



Partnership in Lung Age Testing and Education (PLATE) Programme

**A demonstration project to implement a population-based approach for
management of asthma, associated allergies and COPD**

FINAL REPORT

Prepared by the Asthma Society of Canada for the Public Health Agency of Canada

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Executive Summary

Chronic disease management is difficult to accomplish effectively, particularly as it requires both a team approach and constant attention to ensure the best possible outcomes. This is the case for chronic respiratory disease in Canada, where prevalence of both asthma and COPD, the two most prominent chronic respiratory conditions, are increasing. All members of the healthcare team require information and evidence based best practices to increase their knowledge, particularly in the area of community based education and health promotion interventions. Arguably, the most important team member for the management of chronic respiratory disease is the individual afflicted with the condition; other team members form support networks to ensure adequate resources and information are available for the daily management of the chronic condition experienced by the patient. Effective and targeted interventions are important for increasing the capacity of organizations to make informed decisions about community-based programming.

The Partnership in Lung Age Testing and Education (PLATE) programme was a one year demonstration project that was designed to investigate the effectiveness of a population-based approach to the management of asthma, associated allergies and COPD. The programme consisted of a main intervention of community based Airways Clinics coupled with a survey of current knowledge and disease status in individuals with asthma, COPD, or undiagnosed respiratory conditions (Phase I), followed by a second survey of current knowledge and disease status six months later (Phase II) and a detailed focus group (Phase III) to determine the impact of education and lung testing on the management of the disease. The programme was guided by a steering committee composed of researchers and personnel from the Asthma Society of Canada and was implemented by a dedicated staff team. The format of the programme included a series of Airways Clinics in public areas in two cities (Hamilton and Toronto) to encourage recruitment of participants. Each clinic included a self-administered questionnaire to determine baseline knowledge and respiratory disease characteristics, followed by peak flow and lung age testing and patient specific education. A second questionnaire was administered six months following the clinic and individuals were invited to a mediated focus group session to discuss their experiences during the programme. The ultimate goal of the programme was to improve the implementation of best practices for chronic disease management and prevention through asthma and COPD assessments, the promotion of healthy lifestyles, lung function testing, patient education, and encouraging productive interactions between patients and their primary healthcare providers. As well as the research component described here, a further community outreach component, directed at individuals without respiratory disease, was implemented. The targets for this component included healthcare providers and resources (healthcare teams, doctors, hospital departments, etc.), local community agencies (schools, businesses, libraries, etc.) and finally the general public. The outreach component was designed to increase awareness of chronic respiratory disease to improve the identification and understanding of these conditions.

Participants in the programme were recruited at the newly established Airways Clinics and categorized by their disease status into three different groups: the first group were those who have received a formal diagnosis of asthma from a healthcare provider; the second group were those who have received a formal diagnosis of COPD (emphysema and/or chronic bronchitis) from their healthcare provider; and the third group were those who have significant self-assessed respiratory symptoms but who have not received a formal diagnosis or those who are over 40 years of age with a 20 pack year history of smoking (more than 1 pack per day). The program was voluntary and not all eligible clinic attendees participated; further, many clinic visitors were ineligible but

were able to use the resources offered at the clinic; such interactions were tracked in the program. Program assessment was based on the changes over time in each of the participant groups.

A total of 13 Airways Clinics were implemented during 2008 (7 in Toronto and 6 in Hamilton) and advertised using a number of different methods. During these clinics, 333 visits were recorded, 246 individuals were educated and 87 individuals provided consent to participate in the programme. Airways Clinics were positively received by visitors as well as Clinic hosts. Visitors were pleased with both the educational component and the peak flow testing provided at the Clinics while hosting agencies expressed high appreciation for the Airways Clinics. For patient recruitment, the most successful Clinics were located at community pharmacies while shopping malls and community centres were proven a good location to provide visitors with brief information and educational materials. High need areas, notably the urban cores of Hamilton and Toronto, enjoyed the greatest interest by community members.

There were a number of successes in the model that was used in the PLATE program. The reception desk and information display at the Airways Clinics was a highly visible drawing point for visitors and provided an opportunistic mechanism for providing information and resources to a wide range of individuals. Visitors appreciated the breadth of information that was available. The use of Certified Asthma Educators (CAEs) and Certified Respiratory Educators (CREs) with immediate lung assessment using hand held devices to assess lung function allowed for the delivery of very specific information and immediate feedback to participants. As well, the use of simple and easily understandable analogies (such as lung age) provided clients with a concrete example of their current health status. However, there were a number of challenges to recruitment and the program itself. These included poor disease understanding leading to poor acceptance of the intervention, the lack of access by the public to community or other health resources, language barriers, poor response by the local media in advertising the program, and time required for the interaction (30 minutes) preventing some participation, particularly for opportunistic visitors.

The majority of the participants were 50 to 79 years of age at the time of the Airways Clinics, with nearly two thirds being female. Participants were generally of lower income status and not married. Most participants had a high school education or less, but education levels included individuals with post-graduate training as well. Of the 87 participants who entered the program, the majority (53) had a formal diagnosis of asthma, 10 had a diagnosis of COPD, and the remaining 24 had not received a formal diagnosis.

During the initial interview and from the initial questionnaire, it is apparent that most participants experienced symptoms frequently; most COPD participants experienced symptoms more than one to two times per week, while two thirds of asthma patients experienced the same frequency of symptoms. Most participants without a formal diagnosis had similarly high levels of symptoms. These symptoms that were experienced by the participants included those that are commonly associated with respiratory diseases, particularly coughing, shortness of breath and sputum production, suggesting a high proportion of individuals with undiagnosed COPD. The majority of those participants also demonstrated a number of risk factors for COPD, including history of smoking and sputum production with cough.

The impact of the disease is profound with impact in most individuals on a variety of activities. Although most participants did not report missing school or work, the majority reported respiratory symptoms and half had limited daily or physical activities. These symptoms resulted in a significant number of healthcare visits,

including hospital and emergency room visits and unscheduled doctors' visits. A high proportion of individuals reported that they perceived a high level of control of their disease, but medication and health resource utilization as well as symptom frequency and impact suggests that the disease was not as well controlled as they believed.

Prior to the education initiative, only four in ten participants reported having received any disease specific education or had discussed respiratory symptoms with a healthcare provider. There was a higher proportion (63%) reporting a breathing test; however, this proportion still falls short for proper management of a disease in the population. In most cases, the education was provided by a family physician, except in the case of those with COPD, in which case the education was provided by a pharmacist.

A large number of individuals were not using prescribed medication or were using medication incorrectly. This includes those individuals using rescue medications more frequently than needed (suggesting poor control), individuals using daily medication either sporadically (as rescue medications) or not at all, or individuals who had no prescribed medication. These findings are found despite a high level of understanding of the purposes, benefits and effects of these medications. Similarly, there seemed to be a high level of intellectual understanding of asthma, including the causes, need for proper treatment, and course of the disease. These findings did not translate to a high level of engagement in self-management, suggesting that these individuals were poorly equipped for the daily management of their disease. Self-management plans were extremely rare in all the groups; however, if they were present they were used extensively. Participants reported that they were confident in managing their conditions, but the results demonstrate that they were not effectively doing so.

Nearly 30% of participants reported that they were current smokers with most noting that they had tried to quit in the past and failed. Nearly half of the current non-smokers self-identified as a past smoker. Significant proportions of the groups were exposed to second hand smoke in public places, with fewer exposures at home and work. The highest percentage of current smokers were found in the group with undiagnosed respiratory disease, supporting the premise that this group contains a large proportion of undiagnosed COPD sufferers. Further, the patients with COPD were highly likely to be current smokers, despite an understanding of the extreme detriment of cigarette smoke to their health.

Six months following the initial data collection, participants were contacted and invited to participate in a follow-up questionnaire. Of the original participants, 41% of the asthma group, 30% of the COPD group and 25% of the undiagnosed groups agreed to complete the second questionnaire. The clinical history of these patients was improved when compared with the first survey results. There were decreases in the proportion of those experiencing frequent symptoms and an increase in those with no symptoms or infrequent symptoms. Although most participants reported a similar level of disruption with their regular life activities, there are suggestions that participants were more aware of the interference following the intervention and were therefore more sensitive in reporting these events. These are supported by a decrease in the number of unscheduled doctors' visits, hospital admissions, and specialist visits, suggesting the impact of the disease was less severe. Further, there was an increase in the number of participants that were reporting no asthma attacks in the prior six months when compared with the baseline data.

Nearly half of the participants felt that they had better disease control as a result of the visit to the Airways Clinics. This included the discussion of peak flow testing with their healthcare provider in a large proportion of

participants, the development of asthma action plans for those individuals who had discussed them with healthcare providers, and an increase in confidence in managing their condition. There was a decrease in the number of individuals who were using rescue inhalers regularly, but there was not a significant increase in the proportion of individuals using daily maintenance medications.

There was an impact in understanding the disease following education; however, as there was a strong intellectual understanding prior to the intervention, this is difficult to measure. There were higher proportions of correct responses for all asthma knowledge questions asked. For COPD, the small sample size made it difficult to compare the two groups. Participants noted that the use of CAEs/CREs were highly effective.

Overall, participants were highly supportive of the initiative and suggested expanding the program to other areas. They would recommend the program to their family members and others.

The final component of the program includes the community outreach activities. These activities required contact with a wide range of groups (healthcare providers, healthcare resources such as hospitals, community agencies and groups, schools and daycare centres, and the general public). In each case, an assessment was made to determine the most effective and cost effective method to reach these individuals and the information that should be provided. A number of existing partnerships were leveraged to deliver this information as well as some that were newly developed. The effectiveness of the program was gauged based on the number of requests for information through the various advertised channels in the Asthma Society of Canada (websites, telephone, written) and surveying physicians or other healthcare providers. Through these activities, there was a small but notable increase in the number of requests for information that were received from the target area. Innovative advertisement methods were developed, including the use of radio tags that provided a highly effective and wide disbursement of information at a small cost.

At the completion of the overall program, the Asthma Society of Canada has made a number of recommendations based on the findings of the program's results. These recommendations include the following: extending the current pilot program within the target areas; expanding the current program to new jurisdictions; developing a community outreach model to increase awareness on chronic respiratory disease; developing awareness materials on early signs and symptoms of chronic respiratory disease, and exploring and addressing the issues related to proper chronic disease self-management.

In conclusion, the program succeeded in increasing the level of control and knowledge in respiratory sufferers in the domains that were measured. Community outreach generally improved the public understanding of respiratory diseases and encouraged the general public to seek out further information. This may impact the level of chronic respiratory disease in the community, encourage better understanding of the importance of lung health and allow for a better awareness of the impact the diseases may have on friends, family and coworkers.

1 Introduction

Chronic respiratory diseases are common in Canada and have a profound impact on both individuals and society as a whole. However, the reaction to these conditions is out of proportion to the impact: Canadians largely ignore these conditions, relying on poor knowledge and a stoic acceptance for the management of these conditions, leading to poor outcomes and increased economic and health care costs.

Three million Canadians have asthma, giving Canada the dubious distinction of having one of the highest national rates in the world. In 2005, 8.3% of the Canadian population reported that they were living with asthma (6.9% males and 9.6% females).¹ The TRAC (The Reality of Asthma Control) study found that 97% of people with asthma believed their asthma was under control (59% said it was "very well controlled" and 38% said it was "somewhat well controlled"). However, only 47% of them had their asthma actually under control as assessed by the researchers using the latest Canadian Asthma Consensus Guidelines (CACG) on the management of asthma.² This suggests that most people are not aware that better asthma control is possible and what optimal asthma control means.³

There is a strong association between asthma and allergies with up to 75% of people with asthma suffering from allergies. Considering the strong association, reduction in environmental exposure to the main allergens is the first step addressed in asthma control measures as outlined in the Canadian Asthma Consensus Guidelines.⁴

Chronic obstructive pulmonary disease (COPD) is also a chronic lung disease. Unlike asthma, COPD symptoms do not usually appear in people younger than 55 years of age. Lung changes and degradation begin many years earlier as COPD progresses slowly over a period of years. Chronic bronchitis and emphysema are the two most common underlying processes that contribute to COPD development. As the disease advances, symptoms including shortness of breath limits the activity levels of individuals and reduces their quality of life. In its more advanced stages, the impact of the disease is felt more frequently, often as a result of further reductions in airflow that can lead to premature death. The disease impacts both individuals and their families. Because of this, families face two main challenges: first, of providing an increasing level of care to individuals with the disease; and second, watching the progression of the disease and corresponding decline of health of their loved one. The costs associated with COPD (e.g. loss of productivity and the need for additional services) affects the family, the health care system and the community as a whole.⁵

In 80% to 90% of cases, cigarette smoking is the principal underlying cause of COPD. The contribution of primary smoking is very clearly established, and exposure to second-hand smoke (SHS) likely plays an important, if less well defined role. In a recent survey, almost 84% of Canadians over 35 years of age with self-reported COPD were or had been smokers (91% of men and 77% of women) and almost 40% of those were still smoking.⁶

Of adults over the age of 34 surveyed in the Canadian Community Health Survey (2005), 4.4% (3.9% of men [329,500] and 4.8% of women [425,300]) reported that they had been diagnosed with COPD by a health professional.⁷ Unfortunately, since the early symptoms of the disease are often not recognized, many individuals do not seek diagnosis and treatment. Results from a recent Burden of Obstructive Lung Disease (BOLD) study conducted in Australia indicate that self-reported physician diagnosed COPD may underestimate the prevalence

by at least 50% in individuals 40 years of age and over.⁸ Consequently, the CCHS figures likely severely under-represent the actual prevalence of COPD in the population.

A significant gap exists between the standards of care recommended in the related guidelines and current general management practices, with a significant deficit in the level of knowledge/awareness about asthma and COPD among the general public. Provision of education and resources to those with asthma, allergies and COPD will serve to improve self-management strategies and result in an overall improved quality of life.

2 Background

The Asthma Society of Canada (ASC) recognizes the role of education for people living with chronic respiratory disease (asthma, associated allergies and COPD). To demonstrate the importance of education, the Partnership in Lung Age Testing and Education (PLATE) programme was designed and, following submission of a funding request, supported by the Public Health Agency of Canada. The primary objectives of the PLATE initiative were the following: to increase early detection of asthma and COPD; improve patient education; increase public awareness about asthma, associated allergies and COPD; and promote a healthy lifestyle. These objectives, when applied in individuals with chronic respiratory disease, will improve overall disease control, self-management and quality of life.

A variety of activities were undertaken to meet these objectives including: establishing community based “Airways Clinics”, providing community residents and the general public with screening spirometry/peak flow testing including lung age measures and education sessions tailored to their individual needs, using ASC educational resources for optional support/education, organizing public information sessions, and promoting healthy lifestyles amongst residents and the general public. A community awareness plan was implemented to increase local awareness about asthma, associated allergies and COPD as well as resources offered by the ASC, among both community members and the general public.

Two different municipalities were selected for programme delivery - Toronto and Hamilton - in a variety of community settings. Participants were offered screening spirometry/peak flow testing with lung age estimation and a brief “15-minute education” session with a Certified Asthma Educator (CAE) and/or a Certified Respiratory Educator (CRE). Participants were provided with a take home package of educational resources, including materials specific to their chronic lung disease self-management as well as for ongoing education and support.

It was expected that a number of changes would be observed as a result of the programme. These changes include: an increased number of clients with better control and management of their chronic condition; increased early detection of lung disease; overall improved quality of life; improved knowledge about asthma, associated allergies and COPD; improved understanding about risk factors and triggers for their disease; and better knowledge and practice of healthy lifestyles.

3 Implementation of Community-Based Airway Clinics

The main focus of this demonstration project and its activities was on providing asthma, allergy and COPD education and peak flow testing to community residents and the general public by establishing Airways Clinics at various community settings such as pharmacies, local shopping malls, libraries, community centres, etc. The programme was implemented in two geographical locations (Toronto and Hamilton).

The actual community settings were determined based on the structure and services available in particular communities. A variety of community settings were considered to ensure the implementation of the Airways Clinics in a number of circumstances. The programme team conducted the selection process by research staff contacting a number of locations using phone, email and/or in person site visits. Approximately 30 community venues were approached and asked to host an Airways Clinic. Potential sites for the Airways Clinics were provided with a synopsis letter of the PLATE initiative that included the background information about the programme and its partners, a brief description of the proposed activities, and specified venue roles and responsibilities for Clinic hosting. Local Health Integration Networks (LHINs) for both Toronto (Toronto Central LHIN) and Hamilton (Hamilton Niagara Haldimand Brant LHIN) were consulted during the selection process.

Most of the sites approached were supportive of the Airways Clinic but some were not available to provide space or dates to accommodate the Clinic. At the end of the selection process, 13 community settings were suitable to host Airways Clinics. When the community settings were identified, the schedule of testing/education sessions was established and educational sessions were offered by both appointments and on a drop-in basis (please see *Appendix 1* for details).

3.1 General Clinic Overview

In total, **13** Airways Clinics were organized in both cities (Toronto and Hamilton) at the following community settings: local community pharmacies (7 Clinics), local shopping malls (3 Clinics), large retail store pharmacies (2 Clinics), and a library/community centre (1 Clinic). Detailed information about the Airways Clinics including their location, a brief description of the Clinic atmosphere/environment, and information about surrounding communities is presented in *Appendix 2*. There was an almost equal distribution of the Airways Clinics between Toronto and Hamilton, with **7** Clinics and **6** Clinics, respectively. The distribution of Clinics in Toronto and Hamilton, including venue locations, is presented below in **Table 1**.

Table 1. The Clinics' distribution by the geographical location and community setting

Community setting	Toronto	Hamilton
Community pharmacies	3	4
Retail store pharmacies	2	0
Shopping malls	1	2
Library/community centre	1	0
Total	7	6

The Airways Clinics occurred in the period of September through December 2008. At the majority of the Airways Clinics (9), educational and testing services were available to community residents and the general public for one day. At two locations in Toronto (Novack's Rexall Drugs, Toronto downtown and Yorkdale mall) and two in Hamilton (Eastgate and Jackson Squares), the Airways Clinic were open for two consecutive days. In total,

educational services were available to community residents and the general public during 17 Clinic days (nine in Toronto and eight in Hamilton).

Clinics hours were established in consultation with each venue (see **Table 2** below for details). In summary, most Airways Clinics occurred during weekdays at daytime hours in both geographical locations. In Toronto, all Airways Clinics, with one exception, offered their services during the daytime only. One Clinic (Yorkdale mall) provided services to clients in the evening on Saturday. In both community and large store retail pharmacies, the Airways Clinics were conducted during weekdays with weekend Clinics available at the Mel Lastman Community Centre and Yorkdale mall. In Hamilton, weekday Clinics were offered during the day and night at multiple locations. The weekend Clinics were only available during the daytime at one local pharmacy (Dell Pharmacy, Ancaster) and one shopping Centre (Jackson Square). According to the information provided by the programme personnel, the busiest time at the Airways Clinics was during the daytime at the majority of locations.

Table 2. The Clinics' working hours by the programme geographical location

Geographical location	Weekdays		Weekends	
	daytime	nights	daytime	nights
Toronto	6	0	2	1
Hamilton	4	2	2	0
Total	10	2	4	1
Grand totalⁱ	12		5	

In both cities, nearly all Airways Clinics (12) were set up for drop-in visits. At one Clinic in Hamilton (Dell Pharmacy, Ancaster), services were offered by appointments, accommodating client preferences, as well as on a drop-in basis. Pharmacy staff were responsible for booking participant appointments.

Each Clinic was established in an area within the venue which would generate the highest interest for the Clinic. Each Clinic included a reception table and a separate area to conduct an education session. At the majority of venues the education area was established in a separate room. When the separate room was not available, the education area was separated from public view with screens to ensure participants' privacy. The Clinic area was visible and highlighted by the Asthma Society of Canada (ASC) logo and the display with educational materials on asthma, allergies and COPD. Information brochures on the PLATE demonstration project were usually available at the reception area. Additionally, information about smoking cessation resources (Smokers Helpline materials and contact information of the Canadian Cancer Society) and materials on healthy living (e.g. Canada's Food Guide) were exhibited on the reception table. The Clinic was equipped with Airway models and a placebo inhaler device to be used during educational sessions. To increase public awareness about the Clinics and attract attention, site-specific posters were displayed at the majority of locations (*Appendix 3*). However, posters were not used at two Toronto Clinics (Yorkdale mall and Wal-Mart Pharmacy, Dufferin mall) due to the strict internal rules that did not allow posting of any posters within mall properties.

The reception area of the Airways Clinic was staffed by ASC research assistants, who had a thorough knowledge and understanding of the PLATE demonstration programme. They were also familiar with the services and materials available from the Asthma Society of Canada. The number of research assistants working at each

ⁱ Please note that the grand total presented in **Table 2** is higher than the total number of the Airways Clinics as it shows the total number of Clinic Days.

Clinic depended on the size of the location and varied from 1 to 3 assistants. Educational services and peak flow testing were delivered by Certified Asthma Educators (CAEs) and/or Certified Respiratory Educators (CREs). Both certifications represent the highest standards in respiratory education and are obtained from the Canadian Network for Asthma Care (CNAC).⁹ The number of CAEs/CREs per clinic varied from one to three depending on the size of the location and anticipated number of participants. All CAEs/CREs involved with the programme were provided with comprehensive information about programme objectives, the Airways Clinics set up as well as all relevant documentation and educational materials to be used at the Clinics. As well, they received copies of all Clinic forms prior to their participation in the delivery of asthma and COPD education at the Airways Clinics. Email and telephone correspondence occurred prior to the Clinic dates to ensure all questions/concerns were addressed in an appropriate manner. They were also instructed on how to apply the new concept of “15 minutes respiratory education”. In-service training on the use of PulmoLife Spirometry Screener (*Appendix 4*) was conducted with all CAEs/CREs prior to the Clinics.

3.2 Programme Recruitment and Participation

When visitors approached the reception desk, they were greeted by a research assistant, provided with an explanation about the PLATE project and invited to participate in the project if they expressed interest. Visitors had two options for participation: to be enrolled in the research part of the project or receive information/education based on their needs. A choice between two options was made based on the eligibility criteria described below and the willingness of visitors to participate in the programme research component. Research assistants were trained by the ASC Director of Programming to assess potential participants using the research protocol. They also determined eligibility of visitors to the reception desk to participate in the research part of the project based on one the following criteria:

- Aged 18 and older
- Physician diagnosed asthma
- Physician diagnosed COPD (emphysema and/or chronic bronchitis)
- People experiencing respiratory symptoms without a diagnosis
- Smokers of 1 ppd (20 pack year history) over the age of 40

Not all visitors were eligible based on the inclusion criteria above. Others were eligible but chose not to participate for a variety of reasons. The main two reasons were lack of time (some visitors stated they did not have the time to participate) and a perception that they did not need additional information about their respiratory disease. Additionally, some visitors were seeking information for friends and/or family members and therefore did not have respiratory disease or symptoms themselves. However, all visitors to the Airways Clinics were provided with education and information based on their individual needs, regardless of participation in the research component. The research staff kept details about all these encounters, as it was important to determine their nature and the most asked questions/requested information.

If visitors were eligible to participate in the research component of the project, they were provided with further information regarding the participation process and asked to sign a consent form (*Appendix 5*). After informed consent was obtained, each participant was assigned a unique identification number. Based on the diagnosis, participants were divided into 3 groups: individuals reporting a physician diagnosis of asthma (Group 1), individuals reporting a physician diagnosis of COPD (Group 2), and people with respiratory symptoms without a diagnosis (Group 3). After completing an assessment questionnaire appropriate to the participant's group, a

participant met with a Certified Asthma Educator (CAE) or Certified Respiratory Educator (CRE) to receive respiratory education and screening spirometry/peak flow testing (the detailed content of this educational session is described below). At the end, the participant returned to the reception desk and received a take home education/resource kit. The complete intervention was about 30 minutes in length.

Overall, **333** people received services at the Airways Clinics in both geographical locations (211 in Toronto and 122 in Hamilton). The detailed information about the number of visitors by Clinic location is summarized in *Appendix 6*. In total, 87 individuals (54 in Toronto and 33 in Hamilton) were recruited to participate in the research part of the project and 246 visitors (157 in Toronto and 89 in Hamilton) received information/education tailored to their needs. The largest numbers of participants recruited to the research part were observed at three locations: Novack's Rexall Drugs in Downtown Toronto, Shoppers Drug Mart in Toronto (Beaches), and Jackson Square in Hamilton. The largest numbers of people who received education/information were observed at the Clinics hosted by shopping malls (Yorkdale mall in Toronto and Jackson Square in Hamilton) as well as at the Mel Lastman Community Centre in Toronto.

The average recruitment rate was 0.8 clients per hour with the highest rate of 1.3 clients per hour at Novack's Rexall Drugs and Shoppers Drug Mart in Toronto, and the lowest rate of 0.15 clients per hour at Wal-Mart Pharmacy, Sherway Gardens. Extended Clinic hours into the evening did not substantially affect patient recruitment. However, two sites with the highest numbers of study participants hosted the Airways Clinics two days in a row. Additionally, the high participant recruitment at these two Clinics could be explained by the fact that both Clinics were located in communities with high-needs populations (Downtown Toronto and Hamilton) and therefore, a high potential demand for the services offered at the Clinics. At the Airways Clinic hosted by Dell Pharmacy (Ancaster) all pre-booked clients showed up and participated in the project.

3.3 An Overview of Provided Services

At the Airways Clinics, education and screening spirometry/peak flow testing were provided by CAEs/CREs. At the beginning of each session, a clinical assessment was performed based on the participant's responses to the intake questionnaire as well as questions arising from interactions with the participant. The intake questionnaire (*Appendix 7*) was specially designed for this programme. It includes questions about existing symptoms, general asthma/COPD awareness and knowledge, health-related quality of life, and knowledge/awareness about healthy lifestyles (exercise, diet, etc.) and risk factors underlying the development of respiratory conditions.

After the clinical assessment, spirometry screening/peak flow testing was conducted using the PulmoLife Spirometry Screener (please see *Appendix 4* for details). Participants were screened prior to performing the test for contraindications – recent eye, abdominal, thoracic surgery, heart attack, hemoptysis, and infections. Lung age and the FEV1 (expressed in absolute terms and as a percentage of predicted value) were determined from the test procedure and both measurements were recorded in a clinic re-cap sheet (*Appendix 8*). After testing, all participants were advised to speak to their physician to request the booking of a complete spirometry test if required.

The testing was followed by an educational session that was conducted according to the participant's diagnosis (Group 1, 2 or 3) and tailored to the participant's needs. All information provided was consistent with the Canadian Asthma Consensus Guidelines¹⁰ and the COPD guidelines developed by the Canadian Thoracic

Society (CTS).¹¹ The new concept of “15-minutes respiratory education” was introduced as a part of this initiative and included information about basic concepts of asthma/COPD and their proper management. During a “15-minute education” session for participants with asthma (Group 1), a main focus was on airway inflammation as an underlying mechanism for asthma; the role of anti-inflammatory medications and the importance of their regular, daily use; the necessity to follow a personalized self-management plan; and information about allergen avoidance strategies. A brief overview of airway physiology and changes with disease as well as all necessary explanations about the importance of regular anti-inflammatory treatment were given to participants. Special focus was placed on issues related to optimal level of asthma control, what it means and how to achieve it. Additionally, topics covered included a review of signs and symptoms of asthma and/or allergies and information regarding allergy skin tests to help diagnose potential triggers. “15 minutes education” for participants with physician diagnosed COPD (Group 2) mainly encompassed a review of COPD definition and symptoms, and information about disease-specific self-management including prevention and treatment of COPD exacerbations. Participants with respiratory symptoms without a diagnosis (Group 3) were provided with detailed information about early signs and symptoms of asthma, associated allergies and COPD.

Further, all participants were provided with information regarding spirometry testing and its role in diagnosis and management of lung disease, and a review of inhaler technique with a shown demonstration of the correct inhaler use. Brief counselling about smoking cessation with a referral to programs available from the Canadian Cancer Society - Smokers Helpline was included in educational sessions when necessary. As well, suggestions for appropriate diet, exercise regimens and healthy lifestyle choices were made. A discussion regarding a follow-up appointment with a traditional healthcare provider occurred at the end of each session. Clients who required further information about their treatment strategies and/or spirometry screening results were advised to book a follow-up appointment with a primary healthcare provider. As well, each participant was provided with the clinic re-cap sheet (*Appendix 8*) outlining the topics covered during the educational session and the results of screening spirometry/peak flow testing.

During educational sessions, CAEs/CREs used the following educational materials and devices:

- Airways models to explain the changes in the airways/lungs due to chronic disease
- Placebo inhalers to demonstrate correct inhaler technique
- ASC educational materials
- Educational materials developed through the “Living Well with COPD” program¹²
- The Asthma Circle of Care storyboard¹³
- A sample of the asthma action/COPD management plan to educate about the importance of self-management strategies

In addition, Fletcher-Peto graphs¹⁴ were used to discuss changes in lung function in someone with smoking related illness, and Canadian Cancer Society materials were utilized as information on smoking and smoking cessation.

At the end of each educational session, all participating clients were given an educational kit. There were two educational kits developed: one for participants with asthma and the second one for participants with COPD. The asthma educational kit contained the ASC Basics booklet series (Diagnosis, Medications, and Triggers) and a copy of the asthma self-management plan. Participants were also invited to join the National Asthma Patient Alliance (NAPA)¹⁵ by providing them with the Asthma Patient Bill of Rights, and a NAPA registration form as part

of their educational packages. Educational materials developed through the “Living Well with COPD” program¹¹ were included in the COPD educational kit and distributed to clients with COPD at the end of the education sessions. Participants with respiratory symptoms without a confirmed diagnosis (Group 3) were given various educational materials based on questions/concerns from the participant. Some participants may have received materials from one or more of the packages to suit their individual requirements. The complete content of the asthma and COPD educational kits is presented in *Appendix 9*.

Additionally, all educational packages contained a brochure about the PLATE initiative (*Appendix 10*), an info sheet describing spirometry testing (*Appendix 11*), and a brochure promoting healthy behaviours for adequate physical activity and proper nutrition necessary to maintain appropriate lung health (*Appendix 12*). All these materials were developed by the ASC, with input from the Public Health Agency of Canada, specifically for this demonstration project. Participants were also provided with educational materials about allergies when necessary (*Appendix 9*), and a copy of Canada’s Food Guide¹⁶ to help participants learn about a healthy diet. Further, participants who were current smokers were provided with information about smoking cessation programs and materials developed by the Canadian Cancer Society “For Smokers who want to Quit”/“For Smokers who do not want to Quit”.¹⁷

Information about additional support and education available from the Asthma Society of Canada were included in each educational kit as a sticker inside the package. It contained information about various educational services offered by the ASC, such as the main educational portal (www.asthma.ca) and the Asthma Society Helpline (phone and e-mail-based support services).

All information gathered by a means of spirometry screening/peak flow testing and education was communicated to regular healthcare providers to maintain continuity of care and provide clients with proper clinical follow-up based on the testing results, if required. Results of spirometry screening/peak flow testing were given to clients (see the Clinic re-cap sheet in *Appendix 8*) as well as submitted to their primary healthcare providers by mail when clients had granted their permission in the consent form. Clinic re-cap sheets were mailed to primary healthcare providers in an ASC envelope identified as containing confidential information to ensure participants’ privacy.

3.4 Clinic Promotion

Special attention was given to promoting newly established services (“Airways Clinics”) to the general public and community members. Various methods of Clinic promotion were employed to ensure that community residents would be properly informed about the PLATE programme venues. The ASC developed programme flyers and promotional posters (*Appendix 3*) and distributed them to the chosen venues as soon as the sites and dates were confirmed. The sites were provided with promotional posters as far in advance as possible - usually 3 – 6 weeks prior to the Clinic dates. They were also provided with a PDF version of the poster so they could print additional flyers/posters if required.

In addition to developing and distributing promotional materials, the ASC posted information about the Airways Clinics on its website (www.asthma.ca) and connected with local media to request promotion of the Airways Clinics. PLATE research staff contacted local media in Hamilton and radio ads were placed on Smooth Jazz. They were run the week prior to the Airways Clinics and repeated 6 times a day. Additionally, ads were published in local newspapers such as the Hamilton Spectator, Ancaster News, Stoney Creek News and the

Mountain News. In Toronto, contact (by both phone and e-mail) made by programme staff to local media (e.g. Global TV and City TV) was not returned.

The host venues chose different ways to promote the Airways Clinics. Methods of Clinic promotion utilized by venues during the implementation of the PLATE project are summarized in *Appendix 13*. The main ones are the following:

- Displaying information about upcoming Clinics on site (e.g. in store display of poster, posting on a pharmacy counter)
- Informing potential participants about the Clinics (e.g. letting people know about the Clinic when they came to a pharmacy for inhaler refills, phone calls to pharmacy clients using respiratory inhalers, information letters attached to refill bags, including information about the Clinic in a calendar of events for that location)
- Informing local health care providers (e.g. letters from a pharmacist to community physicians advising them of the Airways Clinics)
- Posting information on sites' websites

In summary, no single promotion method proved to be universally effective in bringing people to the Clinics. Some methods were effective at one location but had no impact at others.

3.5 Programme Outputs

The following main variables were measured to evaluate programme outputs:

- Number of screening spirometry/peak flow tests performed - 84

Screening spirometry/peak flow testing was performed on 84 of the 87 participants. Those that did not perform testing had contraindications and therefore could not do the test.

- Number of individual sessions delivered - 87

Education sessions were provided to 87 participants in the demonstration project. However, that number will be revised based on the data of encounters (n=246) where education was delivered to those visiting the reception areas.

- Number of self-management action plan templates given to asthma and COPD clients - 63

All participants with physician diagnosis of asthma (n=53) were provided with an Asthma Action Plan and all participants with COPD (n=10) were provided with a COPD management plan included in their booklet "Living well with COPD".

- Number of clients with potential (undiagnosed) respiratory disease (asthma and /or COPD) - 24

Overall, 24 individuals were enrolled in group 3 (visitors with respiratory symptoms without a confirmed diagnosis).

- Number of clients referred to smoking cessations programs - 100

All participants (n=87) were provided with educational materials and resources for contacting the Canadian Cancer Society Smokers Helpline. Additionally, visitors to the reception area were offered contact information for the Smokers Helpline when necessary.

3.6 Lessons Learned

3.6.1 What Worked Well?

The reception desk served a number of purposes. First, it was a highly visible drawing point for visitors to the various venues, attracting curiosity and encouraging visitors. However, more importantly, it served as a hub for information distribution and as a resource point for visitors. Individuals visiting the reception desk appreciated the information and education that was available. Individuals who did not participate with the research component indicated that they had gained previously unrealized insight and knowledge about their disease and its management that would allow them to better manage their own condition.

From visitor comments and discussions, it is apparent that there is insufficient, readily available educational materials related to the ongoing management of their chronic disease. Visitors and participants were appreciative of the information available at such a central point, particularly as many expressed concern that they were not able to discuss their chronic disease with their physicians and were generally dissatisfied with the level of care at the primary care level. This was also reflected in the expression of many visitors of not accepting symptoms reflecting an underlying lack of disease control.

The programme utilized a number of innovations which will aid in the improvement of disease management and motivate the client to improve their health outcomes. The focus of this project has been on a screening exercise that allows CAEs/CREs to assess lung function (using a hand-held device) and provide information to the client about “lung age” (i.e. the measured versus chronological age of an individual’s lungs). The lung age assessment has helped determine the lung function of the clients and gave them a clearer insight into the effects of asthma, COPD and related-allergies on their respiratory health and their health in general. Using a simple, easily understood analogy of lung age serves a number of purposes: individuals generally and psychologically adverse to being told they are “older” than they are, encouraging a more aggressive management of the condition and individuals can easily understand the age scale, allowing them a familiar scale to measure their disease progression. Further programme innovations include the combination of both specific targeted education as well as optional educational support available through the Asthma Society of Canada.

3.6.2 What Challenges/Barriers Were Presented?

Several challenges/barriers accounted for low recruitment rates for the research part of the project. The main challenges/barriers can be summarized as follows:

- Lack of awareness and understanding about asthma and COPD as chronic disease which requires ongoing management

This fact may account for a lack of interest in participating as people expect having symptoms and are unaware that optimal asthma control is achievable. People seem to take their disease lightly, likely due to lack of education.

- Lack of knowledge and understanding about spirometry testing and its benefits

In the majority of encounters, individuals were not being referred to spirometry testing.

- Lack of awareness about asthma/COPD education and services available from CAEs/CREs

None of the participants had ever heard of a CAE/CRE until they attended the Airways Clinic.

- Lack of awareness about community resources (e.g. the ASC)

Visitors to the Airways Clinic were not very familiar with the services offered by the Asthma Society of Canada.

- Inadequate exposure to information about the Airways Clinics due to an inability to connect with media and newspapers and post fliers throughout the Clinic venues

The programme staff left multiple voicemails and emails to local media contacts (Toronto) but none of them were returned. The PLATE staff was also often unable to post project fliers at malls due to posting restrictions.

- Language barriers

Language was a barrier in certain Clinic locations due to the population living in the neighbourhood communities (e.g. Asian population near the Mel Lastman Community Centre in Toronto).

- The overall time required (30 min) to participate in the Airways Clinics as well as to complete an intake questionnaire and sign a consent form.

For some visitors, the time required was too lengthy. A large number of individuals (n=246) preferred to receive information/education without participating in the research part of the project.

4 Implementation of the PLATE Research Component

4.1 Overview

As part of the Partnership in Lung Age Testing and Education (PLATE) programme, community-based drop-in “Airways Clinics” were organized (with one clinic running on an appointment-basis) in pharmacies, local shopping malls, libraries, and Community Centres in two geographical locations (Toronto and Hamilton). A total of 87 individuals participated in the screening and health education clinics, 54 in Toronto locations and 33 in Hamilton locations. The main focus of the Clinics was to increase the early detection of asthma and chronic obstructive pulmonary disease (COPD) and improve management of these chronic conditions through public screening and education. The locations for the newly established public Airways Clinics were selected in collaboration with Local Health Integration Networks (LHINs) through the completion of a needs assessment, the development of a community outreach and intervention plan, and the identification of community-based venues for public peak flow testing and education. In the event that medical follow-up was required, the results of the screening testing were communicated back to primary health care providers. In addition, professional associations such as the Ontario Medical Association (OMA) were informed about this demonstration project and its activities.

The PLATE programme was innovative in nature and provided peak flow testing, individual consultations, and education tailored to clients’ needs, delivered by Certified Asthma/Respiratory Educators (CAEs/CREs), in a community “Airways Clinic.” Additionally, particular attention was given to undertake peak flow testing for clients who were at risk for COPD (extended smoking history, persistent cough and sputum production, frequent respiratory tract infections) and had asthma-like symptoms, for which a proper diagnosis had not yet been made by a physician. As well, un-diagnosed clients were provided with detailed information about early signs and symptoms of asthma, associated allergies and COPD. Results of peak flow testing were given to clients and sent to their health care providers if permission was granted.

4.2 Research Design and Tools

The intervention impact on patients was evaluated using a prospective single group pre-test, post-test design; a single cohort of clients were selected and assessed immediately prior to intervention (pre-test) and again assessed at a six month post-questionnaire after the intervention (post-test). Outcome evaluation was based on information collected from questionnaires specifically designed for this programme (see *Appendix 7*). The questionnaires were administered to participants at baseline (Phase I) and again over the phone at a six-month follow-up (Phase II) to determine changes in awareness/knowledge of these chronic diseases and capture indicators required to assess patient outcomes. The post-questionnaire was undertaken only in participants who consented to the follow-up assessment in 6 months. A total of 87 individuals agreed and were included as the Phase I cohort (n=87).

Pre and post questionnaires were designed by the programme team and agreed upon by the members of the Steering Committee. Both questionnaires were aimed to gauge patient perceptions about asthma and COPD, disease specific knowledge, and health-related quality of life. The pre-questionnaire was also used for clinical assessments of participating clients. In order to determine the change in asthma/COPD knowledge and understanding, several questions were adopted from the existing tools (e.g. the Asthma General Knowledge questionnaire,¹⁸ and the Bristol COPD knowledge questionnaire¹⁹). Other questions developed and validated by the World Health Organization (WHO)²⁰ were included in both questionnaires to assess participants’

knowledge and understanding about healthy lifestyle choices and their engagement in physical activities. Client satisfaction with provided services was measured as a part of outcomes evaluation using questions specific to participants' satisfaction with the services provided by this demonstration project, incorporated in the post-questionnaire. Overall, a six-month post-questionnaire with project participants was used to determine the (short-term) impact of the Airways Clinic intervention and the degree of access to community resources.

Confidentiality of participants was ensured based on the standard policies and procedures for studies/projects involving human subjects. Patient consent was obtained prior to collection of additional information via questionnaires and delivering screening spirometry testing and asthma/COPD education (a copy of the consent form is presented in *Appendix 5*). Each participant was assigned a unique identification number to protect personal information/data. All aspects of the research activities as well as research tools were reviewed and approved by the McMaster University Research Ethics Board.

4.3 An Overview of the Recruitment Process

The target groups for this intervention were community residents already diagnosed with asthma, associated allergies and/or COPD, as well as those who are/may consider themselves at risk with respect to lung health and the development of chronic respiratory disease. Smokers who met the criteria outlined previously and those with respiratory symptoms (i.e., cough, wheeze, chest tightness, shortness of breath, difficulty breathing) were also accepted to participate in the project.

As mentioned previously, the recruitment process (initial intake) consisted of the following main steps:

- 1) Assessing eligibility criteria (described on page 14)

Only individuals 18 years of age and older were eligible to participate in the research part of the project because the PulmoLife Spirometry Screener (*Appendix 4*) that was used for peak flow testing only gives accurate predicted lung age values for people who are 18 years of age and older.

- 2) Signing a consent form

Consent was obtained from 87 participants in Phase I and 31 participants in Phase II.

- 3) Completing a pre-questionnaire (self-administration)

Participants were categorized into one of three groups based on client reported clinical diagnosis: Group 1: physician diagnosed asthma; Group 2: physician diagnosed COPD; Group 3: experiencing respiratory symptoms without a diagnosis or if they were a smoker over the age of 40, or an ex-smoker who smoked for 20 years or longer. One pre-questionnaire was developed for each of the three categories of participants. A summary of patient recruitment by participant category and Clinic location is presented in *Appendix 14*.

- 4) Screening spirometry/peak flow testing followed by an individual "15 minute" education session

This session included screening spirometry and peak flow testing with lung age estimation and respiratory education on disease management, lifestyle issues (diet, exercise, and smoking) as well as information about community-resources available for disease management and behaviour change. Screening spirometry testing

was performed using a PulmoLife handheld device (*Appendix 4*). To perform the test, a client simply breathes quickly into a disposable mouthpiece (replaced after each participant). CAEs/CREs used a script to communicate testing results to participants: “Your lung age is determined by many factors, one being disease. This measurement is meant for you to take to your physician for discussion. It is not a diagnosis”.

Privacy and anonymity during individual sessions was ensured by partitioning or dividing testing and education areas for individual clients.

- 5) Receiving an educational kit, a recap sheet and consenting for a post-questionnaire over the phone in six months

At the end of each session, participants were provided with a range of appropriate materials to take home with them (*Appendix 9*) as well as a recap sheet with a summary of their testing results, including lung age and the education delivered (*Appendix 8*).

On average, 30 minutes was required for a participant to complete an Airways Clinic session. All CAEs/CREs interactions were conducted solely in English, as no translators were available on site. Project questionnaires and educational materials were also available only in English.

- 6) A 6 month post-questionnaire

In Phase II, post-questionnaires (n=31) were conducted over the telephone. All 87 participants initially agreed to participate in the post-questionnaire; however, only 31 completed it. Participants were lost to follow-up for a variety of reasons, including refusals, time constraints, inability to contact, etc. Participants were asked to respond to a similar set of questions to those they had responded to at the Airways Clinic in Phase I. The post-questionnaire was conducted to determine the effectiveness of the Airways Clinic by measuring the uptake of self-management strategies reflected by changes in respiratory symptoms and quality of life. The post-questionnaire also included additional questions specific for participants' perceptions and opinion of the usefulness of the Airways Clinic and its educational activities (*Appendix 15*).

- 7) Focus group interviews

In Phase III, focus group interviews (n=2) were conducted in-person, with participants who agreed to participate from Phase II. Participants were asked to respond to questions about the impact and effectiveness of the Airways Clinics, self-management strategies, lifestyle and health and wellness information provided, and future directions (*Appendix 16*). Respondents were given an information letter and a copy of the consent form ahead of time, and were asked to provide the interviewer with a copy of the signed consent form. In addition, respondents were given a small honorarium for their time (\$20).

- 8) Community outreach component

To achieve expected programme outcomes, a strong focus was placed on raising awareness of asthma, allergies and COPD at large through a community outreach initiative. To establish a stronger community presence, the ASC's educational and promotional materials were distributed to local schools, community agencies, physicians (including specialists), and pharmacies to raise awareness about asthma/allergies and

COPD, and proper self-management strategies. The community outreach component of the project is described in detail in Chapter 5, “Implementation of the PLATE Community Outreach Component.”

4.4 Research Context

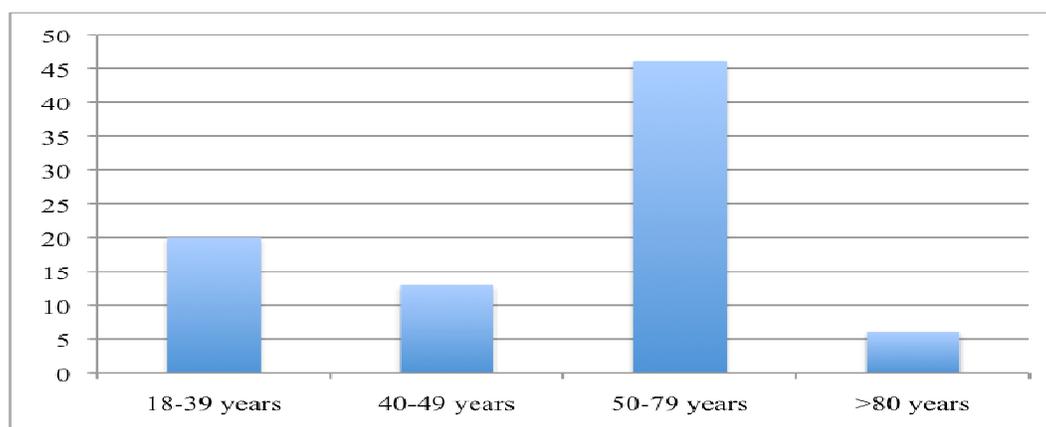
As described previously, 13 Airways Clinics were organized in two cities (Toronto and Hamilton) in a number of community settings: local pharmacies (n=7), shopping malls (n=3), large pharmacies in retail stores (n=2), and library/community centres (n=1). Detailed information about the Airways Clinics, including their location, helped to provide some context (*Appendix 2*). There was an almost equal distribution of the Airways Clinics in Toronto and Hamilton (7 and 6 clinics respectively). This distribution is presented below in **Table 3**.

Table 3. Airways Clinics distribution by geographic location and community setting

Community Setting	Toronto	Hamilton
Independent pharmacies	3	4
Retail store pharmacies	2	0
Shopping malls	1	2
Library/community centre	1	0
Total	7	6

Contextual information helps to describe the sample of participants. In Phase I, a majority of clients who visited the clinics were 40 years of age or older, while a smaller proportion were between the ages of 18 and 39 (see **Figure 1** below). There were a larger number of female clients (60%) in comparison to males (39%), with one participant identified as trans-gendered.

Figure 1. Age of participants



Over 20% of participants indicated that they had a household income of below \$20,000 while only 3% of the participants reported an income of more than \$80,000 a year. Overall, the income distribution of the entire sample is relatively unclear as indicated in **Table 4** below, particularly as 45% of respondents who did not report an income or did not know their income. Twenty eight percent (28%) of participants were either married or living common law with a partner. The remaining individuals were single, widowed or separated/divorced.

Table 4. Household income as reported by participants

Household Income	Frequency	Percent
< \$20,000	20	23%
\$20,000-\$39,999	11	13%
\$40,000-\$59,999	8	9%
\$60,000-\$79,999	6	7%
>\$80,000	3	3%
Don't know	9	10%
No answer	30	35%
Total	87	100%

The educational level of participants is described in **Table 5** below. 39% of participants reported that their highest level of education was the completion of high school level or less. A higher proportion of participants (54%) did report having some post-secondary education. Of the latter group, only 10% attained some university training, while 14% percent of respondents had completed a Bachelor's Degree and 10% reported post-graduate training.

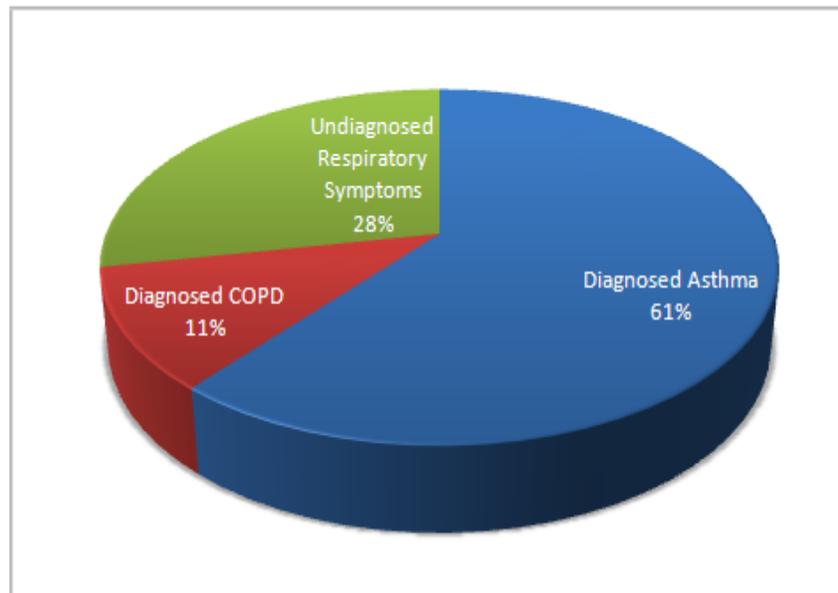
Table 5. Highest level of education attained

Highest level of Education	Frequency (Percent) n=87
High school or less	34 (39%)
Some community college/technical school	10 (11%)
Community college	7 (8%)
Some university	9 (10%)
Bachelor's degree	12 (14%)
Post-graduate training	9 (10%)
No answer	6 (7%)

4.5 Phase I Findings

At recruitment, participants were assigned to 1 of 3 groups based on their diagnosis as follows: Group 1: Participants with client reported physician diagnosed-asthma; Group 2: Participants with self-reported physician diagnosed COPD; Group 3: Self-reported but undiagnosed respiratory symptoms. As presented in **Figure 2** below, of the 87 participants who visited the Airways Clinics and agreed to participate, 53 individuals (61%) reported physician-diagnosed asthma, 10 (11%) individuals reported physician diagnosed COPD, and 24 individuals (28%) reported breathing problems and/or respiratory symptoms who had not received a physician-diagnosis.

The data obtained by administering the pre-and post-questionnaires (*Appendix 7 and Appendix 15*) were organized and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were calculated, as reported in the following results, and provide an overview of sample characteristics, and used to highlight differences between participant groups (1-3) in Phase I and II. Main findings from Phase I are presented below and organized under main sections used in the pre-questionnaire.

Figure 2. Distribution of participants based on their diagnosis

4.5.1 Clinical and Medication History

When participants with diagnosed asthma (Group 1) were asked, only a small minority (7 of 53, 13%) reported having no symptoms in the previous month. Participants most frequently reported daily asthma symptoms (23 individuals or 43%) with fewer participants reporting weekly or monthly frequency of symptoms (see **Table 6**). Participants reporting daily asthma symptoms occur at a rate of nearly 2 to 1 of any of the other groups, suggesting a poor level of control as defined by the Canadian Asthma Consensus Guidelines.

Table 6. Frequency of asthma and COPD symptoms in the last month, by group

Frequency of Symptoms	Group 1 (Participants with asthma)	Group 2 (Participants with COPD)
None	7 (13%)	2 (20%)
Daily	23 (43%)	8 (80%)
1-2 days per week	12 (23%)	0 (0)
1-2 days per month	10 (19%)	0 (0)
No Response	1 (2%)	0 (0%)
Total	53 (100)	10 (100)

* Numbers in parentheses are percentage values

In Group 2, the majority of respondents (80%) identified having COPD symptoms, such as persistent cough, phlegm and/or shortness of breath on exertion (**Table 6**). Furthermore, those participants who reported any symptoms reported daily symptoms. They were also asked to describe the extent to which their symptoms presented themselves each day. Fifty-eight percent of respondents (58%) brought up phlegm and/or coughed most days, while 42% of respondents found themselves out of breath more easily than others their age. In total, 84% of participants in Group 2 were over the age of 40.

Participants in Group 3 (individuals experiencing respiratory symptoms but with no formal diagnosis or smokers over the age of 40 and/or long-term smokers with smoking history of 20 years or longer) were asked to describe their breathing symptoms/problems in the previous 6 months (**Table 7**). Seventy-five percent (75%) of respondents in this group indicated that they had experienced respiratory symptoms. For example, coughing occurred on a daily basis for nearly 30% of respondents, while fewer respondents reported that they experienced tightness in their chest and wheezing on a daily basis (12% in each category). Seventeen percent of respondents (17%) indicated that they had difficulty breathing 3-5 days per week in the last 6 months, while 25% had experienced daily sputum production. Overall, 46% of the sample indicated that they were short of breath at some point in the last 6 months.

Table 7. Occurrence of Respiratory Symptoms in the last 6 months, Group 3

Frequency of Symptoms	Coughing	Chest Tightness	Wheezing	Difficulty Breathing	Sputum Production	Shortness of Breath
Daily	7 (29)	3 (12)	3 (12)	2 (8)	6 (25)	3 (12)
3-5 days/week	1 (5)	2 (8)	0 (0)	4 (17)	1 (5)	2 (8)
1-2 days/week	2 (8)	3 (12)	2 (8)	2 (8)	2 (8)	5 (21)
1-2 days/month	2 (8)	0 (0)	3 (12)	2 (8)	1 (5)	1 (5)
Total	12 (50)	8 (32)	8 (32)	10 (42)	10 (43)	11 (46)

* Totals were calculated using the total number of respondents from Group 3 (n=24)

** Numbers in parentheses are percentage values

Participants in Group 3 were administered brief questions adapted from the Canadian Lung Health Test²¹ in their questionnaire. In a series of yes/no questions, they were questioned for specific indicators of incipient COPD or respiratory disease. For individuals over the age of 40, answering yes to any of the questions may indicate COPD and further evaluation, using spirometry, should be sought from a qualified healthcare provider. In all cases, the largest proportion of individuals (and the majority for regular coughing and sputum production) answered yes to each question, suggesting that undiagnosed COPD may be common. The results for each of the questions are presented in **Table 8**.

Table 8. Responses to the brief Lung Health Test Questions, Group 3

Response	Age of 40 years or over	Frequent Cough	Sputum production	Excessive Breathlessness
Yes	21 (88)	14 (58)	14 (58)	10 (42)
No	3 (13)	9 (38)	9 (38)	10 (42)
Don't Know	0 (0)	0 (0)	0 (0)	2 (8)
No Answer	0 (0)	1 (4)	1 (4)	2 (8)
Total	24 (100)	24 (100)	24 (100)	24 (100)

* Totals were calculated using the total number of respondents from Group 3 (n=24)

** Numbers in parentheses are percentage values

In addition to describing whether or not they had experienced any symptoms of asthma, COPD, or undiagnosed breathing/respiratory symptoms, participants were also asked to describe the impact of these symptoms on their

daily life (e.g. resulting in missed school or work, limitations in physical and social activities, etc.) in the previous 6 months. These results are summarized in **Table 9**.

Overall, a majority (82%) of respondents had experienced asthma, COPD or respiratory symptoms in the period immediately prior to the survey (one month for individuals with diagnosed respiratory disease or six months for individuals with general respiratory symptoms or high risk for COPD). In describing the implications of compromised respiratory health, the majority of participants (81%) indicated that they did not miss school or work in the last 6 months, although approximately one third of the participants (29%) indicated their health was adversely impacting their social life, resulting in missed social activities (e.g. playing with kids, visiting friends). Furthermore, half of the respondents felt that their physical (exercising) and daily activities (e.g. walking, household chores) had been limited in the last 6 months as a result of their respiratory health problems (50% and 49% respectively).

Table 9. Limitations in various activities because of asthma, COPD, and breathing problems, all groups combined

Occurrence of symptoms**	Asthma, COPD or respiratory symptoms	Missed school/work	Missed social activities	Limited physical activities	Limited daily activities
Yes	71 (82)	7 (8)	25 (29)	44 (50)	43 (49)
No	14 (16)	70 (81)	57 (66)	39 (45)	37 (43)
Missing	2 (2)	10 (11)	5 (5)	4 (5)	7 (8)
Total	87 (100)	87 (100)	87 (100)	87 (100)	87 (100)

* Numbers in parentheses are percentage values

** Symptoms in the past 1 month (for diagnosed respiratory diseases, group 1 and 2) or 6 months (for symptoms without diagnosis, group 3)

Detailed analysis, by group, of the impact of respiratory symptoms or disease, demonstrated a profound impact on the daily activities of all groups, consistent with the known impact of chronic disease on society (**Table 10**). Nearly 1 in 10 of Group 1 individuals missed school or work in the previous 6 months due to their disease, similar to COPD (Group 2) individuals. Social activities were more profoundly impacted, with 30% of Group 1 individuals and 40% of Group 2 individuals forced to forgo a social activity. Consistent with activities requiring higher exertion becoming impossible with respiratory conditions, 43% and 57% of Group 1 individuals were forced to limit daily and physical activities, respectively. For Group 3, 50% and 70% of individuals were forced to limit daily and physical activities.

Individuals with undiagnosed respiratory disease (Group 3) also experienced a profound impact on daily life, with a smaller relative impact, compared to those with diagnosed respiratory disease. This is consistent with individuals who have respiratory disease but may be early in disease course (such as COPD in younger individuals), with a less severe presentation (less severe asthma) or a disease that is sporadic in presentation (asthma triggered by specific but uncommon events). In each of these cases, individuals are less likely to be diagnosed or will learn to cope with the impact of the symptoms by self limitation. Group 3 individuals, however, missed school or work (4%), missed social activities (21%), limited daily activities (38%) and limited physical activities (29%). The relative decrease in the limited physical activities may reflect the coping mechanism, as individuals may avoid physical activities or blame limitation on other factors (such as poor physical condition).

Table 10. Limitations in various activities because of asthma and COPD in the last 6 months, by group

Category of respondent	Missed school/ work	Missed social activities	Limited physical activities	Limited daily activities
1- Diagnosed asthma (n=53)	5 (9)	16 (30)	30 (57)	23 (43)
2- Diagnosed COPD (n=10)	1 (10)	4 (40)	7 (70)	5 (50)
3- Undiagnosed symptoms (n=24)	1 (4)	5 (21)	7 (29)	9 (38)
Total (n=87)	7 (8)	25 (29)	44 (51)	37 (43)

* Totals were calculated using the total number of respondents per group

** Numbers in parentheses are percentage values

Participants were asked to identify any unscheduled medical attention they had sought for their respiratory conditions or symptoms in the last 6 months (see **Table 11**). Even though the majority of participants had not sought treatment in a hospital emergency department or walk-in clinic, more than one quarter (26%) of respondents had made an unscheduled visit to their family physician, while 9% had been admitted to hospital. Twenty-one percent of respondents (21%) indicated that they had seen a respiratory specialist about their chronic respiratory disease and/or symptoms.

Table 11: Medical attention sought for respiratory symptoms in the last 6 months, by group

Type of Medical Attention Sought	All Groups (n=87)	Group 1: Asthma (n=53)	Group 2: COPD (n=10)	Group 3: Respiratory Symptoms (n=24)
Hospital Admission	8 (9)	6 (11)	1 (10)	1 (4)
Emergency Room Visit	10 (11)	7 (13)	1 (10)	2 (8)
Specialist Visit	18 (21)	10 (19)	6 (60)	2 (8)
Walk-in Clinic Visit	11 (13)	8 (15)	1 (10)	2 (8)
Unscheduled Doctor Visit	23 (26)	15 (28)	3 (30)	5 (21)

* Numbers in parentheses are percentage values. Percentages calculated using the number in each group.

Sub-group analysis of the medical attention sought data (see **Table 11**), found that 13% of participants with asthma (Group 1) had visited the emergency department and 15% had visited a walk-in clinic during the previous 6 months, suggesting that a significant number of asthma exacerbations were sufficiently serious to require advanced immediate medical attention. Further, 11% of participants in the asthma group were hospitalized for respiratory symptoms in the last 6 months. According to the Canadian Asthma Consensus guidelines,²² there should be no emergency room visits required for well controlled, physician-diagnosed asthma. The participants with asthma were also most likely to make an unscheduled doctor's visit (28%) compared to the other two groups of respondents (10% and 8% in Groups 2 and 3 respectively). Twenty-one percent of respondents with asthma (21%) had visited a specialist in the previous 6 months.

In Group 2, 60% of participants with COPD visited a specialist, but 30% made an unscheduled doctor's visit. A smaller 10% visited the emergency room, attended a walk-in clinic, or were admitted to the hospital (**Table 11**). In Group 3, 21% of respondents with undiagnosed respiratory symptoms made an unscheduled doctor's visit because of respiratory distress, and 8% visited the emergency room, attended a walk-in clinic or went to see a specialist. One participant with respiratory symptoms reported requiring hospitalization (4% of the group).

Respondents with asthma (Group 1) were asked to describe the number of asthma attacks/flare-ups they had experienced in the previous six months. Of the 53 members of the group, 33 (62%) reported attacks/asthma flare-ups in the prior six months. Further, 1 in 4 group members (25%) reported more than 6 attacks in the prior six months. Only 13% of respondents did not report any asthma flare-ups or attacks. With less frequent reported attacks, 25% of respondents reported 1-2 attacks or flare-ups and 13% of participants reported 3 to 5 asthma flare-ups in the previous six months. Unfortunately, 13 participants (25%) could not recall or did not report the number of flare ups or attacks in the prior six months.

Given the relatively high rates of asthma attacks or flare-ups experienced in the previous 6 months, it is not surprising that only 19% of respondents felt that their asthma was under control *all of the time*. Although only 9% of respondents living with asthma felt that their asthma was controlled *none of the time*, the clear majority of participants recognized that they did not have optimally or completely controlled asthma. The majority of participants with asthma (66%) felt that their asthma was under control either *some or most* of the time. Taking into account that individuals with asthma consistently rate control as better than reality, this information clearly demonstrates that control of the disease is poor, at best, in this group. A small minority (6%) were apparently unsure of the level of control, responding that they either did not know how well their asthma was controlled or did not answer.

Forty percent of respondents (40%) with COPD reported no exacerbations in the previous six months and forty percent of respondents (40%) reported one exacerbation or more in the past 6 months. Fifty percent of respondents (50%) with COPD reported one or more respiratory infections in the previous six months, while 40% reported no respiratory infections. Two (20%) of group members did not provide a frequency of COPD exacerbations and one (10%) did not provide information about respiratory infections.

As with the asthma group, a relatively high proportion of individuals (30%) did not know how well their disease was being managed. Of the remaining, 20% and 40% of COPD group members felt that their disease was properly managed either *some or most of the time*, respectively. Only 10% of participants with COPD were confident that their COPD was properly managed *all of the time*.

Key findings/discussion points:

- Almost half of participants with asthma experienced asthma symptoms on a daily basis, which indicates that almost half of the participants with asthma did not have an acceptable level of asthma control according to the Canadian Asthma Consensus Guidelines (CACG), particularly considering that 43% of participants reported having symptoms daily. Further, more than half of the participants with asthma reported limitations in physical and daily activities, indicating that their disease was not properly controlled.
- There is a high probability of undiagnosed COPD among participants in Group 3 based on the results of the Lung Health Test.
- Jeopardized respiratory health has a great impact on quality of life in general and physical and daily activities in particular with at least half of all participants reporting limitations in physical and daily activity.

The majority of participants with COPD (80%) also had reported having COPD symptoms daily, which reflects the direct impact of the disease on their daily lives.

- Overall, there were high rates of unscheduled doctor's visits (26%) showing that participants with chronic respiratory disease (either diagnosed or undiagnosed) consume a significant portion of healthcare resources. Emergency room visits for asthma exacerbations should be zero for controlled asthma, as per the CACG, the highest rate of emergency (13%) among all three groups in the project was detected in Group 1 (participants with asthma). Nearly 10% of participants in all groups required hospitalization in the last six months.
- A high proportion of respondents with asthma perceived their asthma as being well-controlled most or some of the time. This finding is contradictory to other findings presented previously in the report such as the frequency of daily symptoms, the rate of asthma attacks, and the use of emergency health care resources. It is well understood, however, that individuals often consider disease control as better than clinically proven. A disconnect between clinical manifestations of asthma reported by the participants and their perceptions about the disease and its control might signify a certain level of acceptance of asthma morbidity and lack of understanding what proper asthma control means.

4.5.1.1 Breathing Test (Spirometry)

Overall, the majority of participants in all groups (63%) reported that they have had a breathing test (spirometry) before. Chronologically, 20%, 11%, 20% and 10% of all participants reported a breathing test in the last six months, in the last year, in the last 5 years or more than 5 years ago, respectively. A small minority of participants (2%) reported having a breathing test in the past but could not provide the time since that breathing test. However, 37% of participants reported never having a breathing test.

Group analysis showed that there were similar rates for breathing tests for groups with diagnosed respiratory disease, with 68% and 90% of participants reporting having a breathing test in participants reporting diagnosed asthma and diagnosed COPD, respectively (**Table 12**). Among respondents with asthma, 26%, 11%, 17%, and 11% reported testing in the last six months, in the last year, in the last 5 years or more than 5 years ago, respectively and in the COPD group, 30%, 10%, 30%, and 20% reported testing in the same periods, respectively. There is a slightly higher rate of spirometry testing in the COPD group, consistent with lower confidence of family practitioners to manage the condition and therefore a higher rate of specialist treatment. The consensus recommendation for objective monitoring of asthma is the regular use of spirometry (at every visit, for example); participants who have not had spirometry within the last year should be assessed by their physician for asthma control.

The rates for breath testing in Group 3 participants (undiagnosed respiratory symptoms) were generally lower than those participants with diagnosed conditions. In this group, 38% reported a prior breathing test, with 13%, 21% and 4% reporting the test occurring in the past year, past 5 years or more than 5 years ago, respectively. Only 5% of the 58% of the participants who had not undergone a breathing test had discussed the necessity of doing such a test with their physicians since experiencing respiratory symptoms/breathing problems. Spirometry should be performed to aid in diagnosis of the respiratory condition affecting these participants to allow effective treatment.

Table 12. Breathing test and respiratory health education received, by group

Category of respondent	Breathing Test	Education Received
1 - Diagnosed asthma	36 (68)	25 (47)
2 - Diagnosed COPD	9 (90)	3 (30)
3- Undiagnosed symptoms	9 (38)	6 (25)
Total	54 (63)	34 (39)

* Totals were calculated using the total number of respondents from categories 1, 2 and 3 (n=87)

** Numbers in parentheses are percentage values

4.5.1.2 Education

In all the groups, only 39% of participants reported receiving detailed and specific education regarding COPD or asthma (in the diagnosed groups) or discussed respiratory symptoms with a healthcare provider. Individuals with an asthma diagnosis were most likely to report having education, with 47% of participants in the group reporting education received, followed by COPD sufferers (30%) and those with respiratory symptoms (25%) discussing their symptoms with a healthcare provider. Even though the family doctor was identified as a source for this information when provided in the majority of cases (overall, 53%; 52% for Group 1; 33% for Group 2 and 67% for Group 3), there was a large variety of providers in the asthma group, including specialists (36%), nurse practitioners (20%), other providers (16%), Asthma clinics (12%), Asthma educators (12%) and Pharmacists (8%) (**Table 13**). Surprisingly, in the COPD group, the pharmacist was found to be a significant information provider (67%) followed by family doctors and specialists (33%). In Group 3, the majority of information was provided by primary care providers, as expected, as individuals without diagnosed respiratory disease would not be expected to have contact with a specialist.

Table 13. Source of detailed respiratory health education, by group

	All Groups combined (n=87)	Group 1: Diagnosed Asthma (n=53)	Group 2: Diagnosed COPD (n=10)	Group 3: Respiratory Symptoms (n=24)
Education Provided:*	34 (39)	25 (47)	3 (30)	6 (25)
Education Source:**				
Family physician/GP	18 (53)	13 (52)	1 (33)	4 (67)
Specialist	10 (29)	9 (36)	1 (33)	0 (0)
Pharmacist	6 (18)	2 (8)	2 (67)	2 (33)
Nurse Practitioner	6 (18)	5 (20)	0 (0)	1 (17)
Asthma Educator	5 (15)	3 (12)	0 (0)	2 (33)
Asthma Clinic	3 (9)	3 (12)	0 (0)	0 (0)
Other	4 (12)	4 (16)	0 (0)	0 (0)

* Percentages were calculated (in parentheses) based on the total number of participants in each group.

** Education source percentages (in parentheses) were calculated based on the number in each group that received education.

Key findings/discussion points:

- Spirometry testing was more common in the asthma group than had been previously reported²³ (44% with no spirometry test in literature and 32% with no spirometry test in this study). Compared with spirometry testing in the last 5 years, the values are very similar (44% and 45%). However, only 38% of patients could report a recent test (in the past year). As spirometry is really the only effective method of objectively evaluating asthma control and measuring disease progression, in most patients, asthma management must be considered sub-optimal.
- It is worthwhile to note that a relatively large proportion of respondents living with both asthma and COPD as well as undiagnosed symptoms (53%, 70%, and 75% respectively), had *not* received detailed education and information related to their illness, including self-management strategies. These findings show a lack of education provided to project participants and individuals with respiratory disease.
- There is a lack of attention to respiratory symptoms/respiratory health amongst project participants. While 75% of respondents reported respiratory symptoms in the last 6 months, only 25% of respondents in this group had discussed their symptoms with a health care provider. In addition, only 5% of respondents who had not done a breathing test discussed the necessity of doing one with their physicians. This finding could indirectly indicate a lack of awareness about chronic respiratory disease amongst project participants. This finding could also suggest that individuals with respiratory disease are adopting a strategy of coping to deal with symptoms and consider the respiratory symptoms as unavoidable and untreatable.

4.5.1.3 Medication History

An integral part of asthma and COPD management is the regular use of medication. A majority of respondents who were living with asthma or COPD had been prescribed medications for their respiratory disease in the prior 6 months (81% and 90%, respectively).

In Group 1 (participants with asthma), sixty-four percent (64%) of respondents had been prescribed a rescue inhaler in the previous 6 months. In the Group 1 participants with a prescription for a rescue inhaler, one in four (25%) noted that they had a single repeat during the six month period; 19% indicated that they had not had a repeat, and the largest proportion (44% of the responses) noted that they had between two and 10 repeats. Approximately 6% of the responses noted that they had more than 10 repeats, and 6% did not know how many repeats they had used.

The majority of participants with asthma (72%) reported having a prescribed daily maintenance therapy for asthma during the prior 6 months. Slightly more than half of the participants in Group 1 (57%) were still taking a daily medication as prescribed at the time of the survey; however, nearly 1 in 5 individuals (19%) who had indicated they had a prescribed daily maintenance therapy were no longer using the medication.

In Group 2 (participants with COPD), 90% had been prescribed medications for COPD in the last 6 months, with 80% of COPD participants taking a medication for COPD within that period.

Participants from both groups (Group 1 and 2) were asked to list the medications that they had used in the previous 6 months (see **Table 14**).

Table 14. Medication used in the previous six months, Groups 1 and 2

Medication	Total (n=63)	Group 1: Asthma (n=53)	Group 2: COPD (n=10)
Ventolin/Salbutamol	33 (52)	31 (58)	2 (20)
Advair	20 (32)	16 (30)	4 (40)
Flovent	16 (25)	15 (28)	1 (10)
Symbicort	12 (19)	8 (15)	4 (40)
Spiriva	11 (17)	6 (11)	5 (50)
Pulmicort	6 (10)	5 (9)	1 (10)
DuoNeb	3 (5)	3 (6)	0 (0)
Singulair	2 (3)	2 (4)	0 (0)

* Totals were calculated using the number of respondents from each group

** Numbers in parentheses are percentage values

More than half of respondents with asthma (58%) indicated that they were using a rescue inhaler (Ventolin/Salbutamol) for their asthma symptoms. For medications used as maintenance therapies, more than a quarter of respondents (28%) reported using Flovent with a smaller proportion of respondents using Pulmicort (9%). Overall, 45% of respondents with asthma reported using combination therapy – Advair or Symbicort (30% and 15% respectively). For participants with COPD (Group 2), similar proportions of participants reported using Advair, Symbicort and Spiriva for their disease (40%, 40% and 50% respectively) (**Table 14**). Other medications were used in both groups at lower frequency.

Respondents in Groups 1 and 2 were also asked to describe the frequency of their medication use (see **Table 15**). Thirty percent (30%) of participants in Group 1 (asthma) reported using Ventolin or Salbutamol on a daily basis. For maintenance medications (both single and combination), the highest level of daily/regular use was observed for Advair, where 94% of participants with asthma who reported a prescription were using the product regularly. Of the 15 participants who reported a prescription for Flovent, more than half (8) took it regularly/daily. Nearly half of all COPD respondents (n=4) took either Advair or Spiriva on a daily basis each.

Table 15. Regular/daily medication used, Groups 1 and 2

Medication	Total (n=63)	Group 1: Asthma (n=53)	Group 2: COPD (n=10)
Advair	19 (30)	15 (28)	4 (40)
Ventolin/Salbutamol	18 (29)	16 (30)	2 (20)
Flovent	8 (13)	8 (15)	0 (0)
Spiriva	8 (13)	4 (8)	4 (40)
Symbicort	6 (10)	4 (8)	2 (20)
Pulmicort	4 (6)	3 (6)	1 (10)
DuoNeb	3 (5)	3 (6)	0 (0)
Singulair	1 (2)	1 (2)	0 (0)

* Totals were calculated based on the group sizes

** Numbers in parentheses are percentage values

Furthermore, participants were asked to describe the purpose for which they used a medication (the effects or action). For Ventolin/Salbutamol, the majority of the responses from participants in the asthma group correctly identified the product as a rescue medication with a variety of responses (i.e., opening airways, fast acting short-term, emergency/rescue use, for chest tightness and wheezing, helps with breathing, for asthma attacks). Similarly, the daily maintenance medications (Flovent and Pulmicort) were also quite well understood with the responses similar to the following: “extended respiratory protection”, “help to facilitate breathing”, “keep airways open”, “used on a long-term basis for prevention of asthma flare-ups”, and “reduce inflammation”. Flovent was also identified as being a steroid used in addition to medications that give relief during asthma attacks. Considering Symbicort (a combination maintenance medication), responses associated with its use included: breathing/tight chestness, clears the airways, immediate relief, opens up lungs, prevention and reduction of inflammation, and open tubes; all these are consistent with its dual action of opening the airways as well as acting as an anti-inflammatory medication. Advair (a combination maintenance medication) was also seen as a maintenance therapy. It was described as facilitating the following: airway inflammation, clearing airways/lungs, maintenance, preventing coughing and pressure, regularly controlling and treating asthma.

In Group 3 (respondents with undiagnosed symptoms), 13% of them had been prescribed medication for respiratory problems in the prior 6 months. Furthermore, 13% of the group reported they had been prescribed an inhaler for the breathing problem and 13% reported that they had used it. Finally, thirteen percent of respondents (13%) had been prescribed an inhaler for daily use, with 8% of the group reporting continued use of the prescribed medication at the time of the survey. Amongst medication listed were Ventolin (used by 13% of respondents, 4% reporting daily use and 8% when experiencing symptoms), Flovent (used by 8% of respondents, 4% using occasionally and 4% using daily) and Nasonex (used by 4% of the group, daily).

To ensure proper use of inhaler medication, inhaler technique should be demonstrated. When asked to describe whether or not they had been shown how to use their inhaler, the majority of participants with asthma (Group 1) and COPD (Group 2) told us they had been shown proper inhaler technique (77% and 70% respectively). A total of 38% of respondents with undiagnosed symptoms (Group 3) had been shown how to use an inhaler by a healthcare professional.

Key findings/discussion points:

- A high rate of rescue medication prescription renewals in the asthma group was observed. According to the CACG, there are supposed to be less than 2 rescue medication renewals a year for people with well controlled asthma. Only 15% of project participants met this criterion, which meant that asthma is not adequately controlled in the majority of project participants based on their rescue medication use. Furthermore, a quarter of project participants who were using medications for their asthma had reported using a rescue inhaler daily/regularly.
- Seventy five (75%) of participants in Group 1 had reported being prescribed a maintenance therapy with only half of them actually still taking it at the time of the project. Moreover, only a small percentage of respondents with maintenance medication for asthma had been taking it regularly, with the exception of participants using Advair.
- Self-reported compliance in Group 2 seems to be higher with 80% of respondents still taking their COPD medication.
- There is quite a good understanding of the role of asthma medications with proper identification of the effects of the maintenance therapy. Additionally, the majority of participants with asthma and COPD had been shown how to use their inhalers properly.

4.5.1.4 Self-Management Strategies

Action plans are an important component of self-management for asthma and COPD. Similar to findings from other studies²⁴, the majority of project participants did not own a self-management plan developed in collaboration with a healthcare provider. Unfortunately, none of the participants with COPD (Group 2) reported having a formal COPD management plan to follow for COPD exacerbations and/or infections (**Table 16**). Likewise, nearly 72% of respondents with asthma (Group 1) did not have an asthma action plan. Even the 15% reporting having an action plan is slightly better than reported in literature (8% to 11%). However, in those participants who indicated they had an asthma plan, the plan was highly utilized for self management, being used by 88%.

Table 16. Use of self-management strategies

	Total (n=63)	Group 1: Asthma (n=53)	Group 2: COPD (n=10)
Do you have a self management plan?	8 (13)	8 (15)	0 (0)
Do you use a management plan?	7 (11)	7 (13)	0 (0)
How confident do you feel about managing your asthma/COPD?			
Not at all	7 (11)	5 (9)	2 (20)
Somewhat	15 (24)	13 (25)	2 (20)
Fairly	19 (30)	16 (30)	3 (30)
Very	19 (30)	16 (30)	3 (30)

* Totals were calculated using the total number of participants in each category.

** Numbers in parentheses are percentage values

Additionally, the project participants were asked how confident they felt about managing their chronic respiratory condition. Overall, the majority of participants (60%) reported that they were very or fairly confident in managing their condition. Both groups had a similar proportion of participants who were at least fairly confident in managing their condition; however, a slightly higher proportion of the participants with COPD felt not at all confident about managing their condition than those with asthma (20% and 9%, respectively). However, the high rate of use of rescue medications discussed above suggests that participants were not managing their disease effectively to gain optimal asthma control and they likely have adapted coping as a self-management mechanism.

Key findings/discussion points:

- The majority of project participants reported not having a self-management plan to manage their chronic condition but would use it if they had one.
- The majority of participants in Group 1 had not developed an asthma action plan in collaboration with their healthcare provider. These plans are an invaluable resource to ensure that the correct management strategies are applied consistently with both routine management and unanticipated respiratory events. Those participants that did have a plan used it, supporting the utility of these plans. This finding underscores the fact that individuals with respiratory conditions are not universally aware about effective self-management strategies and/or educated by their healthcare providers on how to apply them properly to manage their chronic disease.
- The majority of participants in all three groups noted that they were fairly or very confident in their ability to manage their chronic respiratory conditions. However, the reported findings of frequency of symptoms, medication use, and impact on quality of life suggests that the majority of participants were not optimally managing their conditions, pointing to participant overconfidence with their current disease

management. As already noted, participants generally did not have action plans, seem to accept or cope with symptoms and did not discuss their symptoms with healthcare providers, all indicating a discrepancy in their ability to manage chronic respiratory disease and a poor level of control presented.

4.5.1.5 Allergies

There is a well-articulated relationship between allergies and asthma. Overall, 62% of all participants reported allergies; with 77% of those individuals with asthma, and smaller proportions for COPD and undiagnosed respiratory symptoms (40% and 38%, respectively) (**Table 17**). Further, two thirds (66%) of participants with asthma had undergone an allergy test, while 30% and 25% of the COPD and symptoms groups, respectively had undergone an allergy test. Those individuals with asthma were more likely to seek treatment of allergies, using either over-the-counter (OTC) medications (42% of the group) or allergy shots (23% of the group) than participants in other groups. COPD sufferers reported using OTC allergy medications and having allergy shots 30% and 10% of the time, respectively while those with undiagnosed respiratory symptoms reported values of 13% and 4%. A slightly different pattern was seen for use of prescription allergy medication, where 17% of the participants in Groups 1 and 3 used prescription allergy medication, while none of the COPD group did.

Table 17. Allergies, testing and medication used, by group and combined

	Total (n=63)	Group 1: Asthma (n=53)	Group 2: COPD (n=10)	Group 3: Symptoms (n=24)
Allergies reported	54 (62)	41 (77)	4 (40)	9 (38)
Allergy testing reported	44 (51)	35 (66)	3 (30)	6 (25)
Allergy Treatments used:				
Over the counter	28 (32)	22 (42)	3 (30)	3 (13)
Prescription	13 (15)	9 (17)	0 (0)	4 (17)
Allergy shots	14 (16)	12 (23)	1 (10)	1 (4)

* Totals were calculated using the total number of participants in each group

** Numbers in parentheses are percentage values

Key findings/discussion points:

- There is a frequent association between asthma and allergies: more than three quarters of participants with asthma had reported having associated allergies. Asthma is generally considered an atopic disease and even when it is not triggered by an allergen, the disease invokes systemic and local inflammatory response similar to those invoked by allergic reactions.

4.5.2 Asthma and COPD Knowledge and Understanding

Participants' knowledge and understanding of asthma and COPD was assessed through the use of adaptations of the Asthma Knowledge Assessment Test²⁵ and the Bristol COPD Knowledge questionnaire.²⁶ Both

questionnaires deliver questions or statements to which the respondent provides one of three possible answers: “True”, “False” and “Not sure”.

In Group 1, most (91%) respondents were aware of the fact that asthma is a chronic condition, and also that if left untreated, asthma would not go away (92% agreement with this statement). Two thirds of all respondents with asthma (66%) knew that their medication needed to be taken all the time, not simply when they were experiencing breathing problems. A large proportion of these respondents (75%) were also aware that their airways may have inflammation that needed to be treated on a daily basis. More than half of all respondents with asthma (60%) knew that asthma is not a nervous or psychological illness. Sixty-eight percent of respondents (68%) were aware that you will not become addicted to your asthma medication if used all the time. One of the most important findings is that almost all (91%) respondents knew that although asthma cannot be cured, it can be controlled by the right medications (**Table 18**).

Table 18. Asthma knowledge/understanding, Group 1

Asthma Knowledge/Understanding	
Statements	% Answered Correctly (Diagnosed asthma, n=53)
Asthma is a chronic condition	48 (91%)
If left untreated, asthma will not go away	49 (92%)
My medication needs to be taken all the time, not simply when I am experiencing breathing problems	35 (66%)
My airways may have inflammation that needs to be treated on a daily basis	40 (75%)
Asthma is not a nervous or psychological illness	32 (60%)
You cannot become addicted to your asthma medication if used all the time	36 (68%)
Although asthma cannot be cured, it can be controlled with the right medications	48 (91%)

In Group 2, participants with COPD were asked a series of true/false questions about COPD to test their level of knowledge and understanding (**Table 19**). The results are as follows: 60% believed that with COPD there is a gradual worsening over time; 70% agreed that more than 80% of COPD cases are caused by smoking; 60% believed that quitting smoking is the best way to prevent COPD from progressing; 90% indicated that coughing and phlegm are common in COPD, and 80% thought that people with COPD should exercise even if it makes them short of breath.

Table 19. COPD knowledge/understanding, Group 2

COPD Knowledge/Understanding	
Statements	% Answered Correctly (Diagnosed COPD; n=10)
In COPD, there is usually gradual worsening over time	6 (60%)
More than 80% of COPD cases are caused by smoking	7 (70%)
Quitting smoking is the best way to prevent COPD from progressing	6 (60%)
Cough and phlegm are common in COPD	9 (90%)
People with COPD should exercise even if it makes them short of breath	8 (80%)

In Group 3, respondents with undiagnosed symptoms were asked if they thought that coughing and/or shortness of breath could mean they have asthma, to which 33% agreed. Further, seventy-five percent of respondents (75%) in this group felt that smoking is related to developing COPD, emphysema and/or chronic bronchitis.

Key findings/discussion points:

- The findings reflected a fairly high level of knowledge about asthma; however, the knowledge that participants had does not appear to impact the level of asthma control achieved by project participants, as evidenced by their reported symptoms, medication use, and limitations.
- Similar results were observed in Group 2; more than 60% of participants with COPD correctly answered the questions from the Bristol COPD Knowledge questionnaire.
- There appears to be a general lack of awareness of the signs and symptoms of asthma in the general public, as evidenced by those in the third group unable to identify the symptoms or signs of asthma. Only one third considered shortness of breath and cough to be a sign of undiagnosed asthma.
- The majority (75%) of participants with undiagnosed respiratory disease demonstrated a high level of awareness about smoking being related to the development of COPD. This is surprising as COPD traditionally is poorly recognized by the general population.

4.5.3 Smoking History

4.5.3.1 Current Smokers

Smoking history was an important component of understanding the overall respiratory health of project participants. Overall, 29% of respondents were current smokers. Within Group 1, 13% of participants reported that they were current smokers; 40% of respondents living with COPD were current smokers, and the highest percentage of smokers were observed in Group 3, in which 58% of respondents had identified themselves as being smokers. The number of cigarettes smoked per day is reported in *Table 20*. On average, those with asthma had been smoking for 19 years, those with COPD for an average of 46 years, and those with respiratory symptoms an average of 47 years.

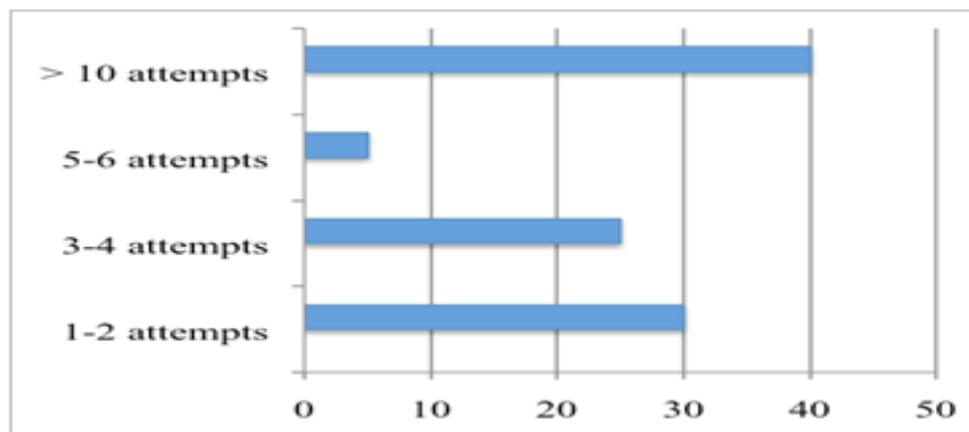
Table 20. Number of cigarettes smoked per day, by group

Category of Respondent	1-5 cigarettes per day	6-10 cigarettes per day	11-20 cigarettes per day	> 20 cigarettes per day
1- Diagnosed asthma (n=53)	2 (4)	4 (8)	1 (2)	0 (0)
2- Diagnosed COPD (n=10)	0 (0)	0 (0)	3 (30)	1 (10)
3- Undiagnosed symptoms (n=24)	0 (0)	0 (0)	5 (21)	7 (29)
Total (n=87)	2 (2)	4 (5)	9 (10)	8 (9)

* Totals were calculated using the total number of participants in each group

** Numbers in parentheses are percentage values

Overall, eighty-eight percent of current smokers (88%) reported trying to quit smoking at some point in their life (see **Figure 3**). The number of times respondents attempted to quit smoking varied: almost half (40%) of the respondents who tried to quit indicated they had attempted more than ten times. A quarter of participants who were current smokers (25%) reported that they had tried 3-4 times to quit smoking, while 30% of respondents indicated that they had tried to quit between 1-2 times. A wide variety of supports were used in quitting attempts. The most commonly used method to attempt quitting was nicotine replacement (in 27% of attempts), followed by prescription medications (12%). Other methods included counselling, smokers' helpline, cold turkey, and hypnosis in 9%, 6%, 6%, and 6% of the attempts respectively. Interestingly, 27% of attempts used no help methods at all, similar to the number of attempts with nicotine replacement.

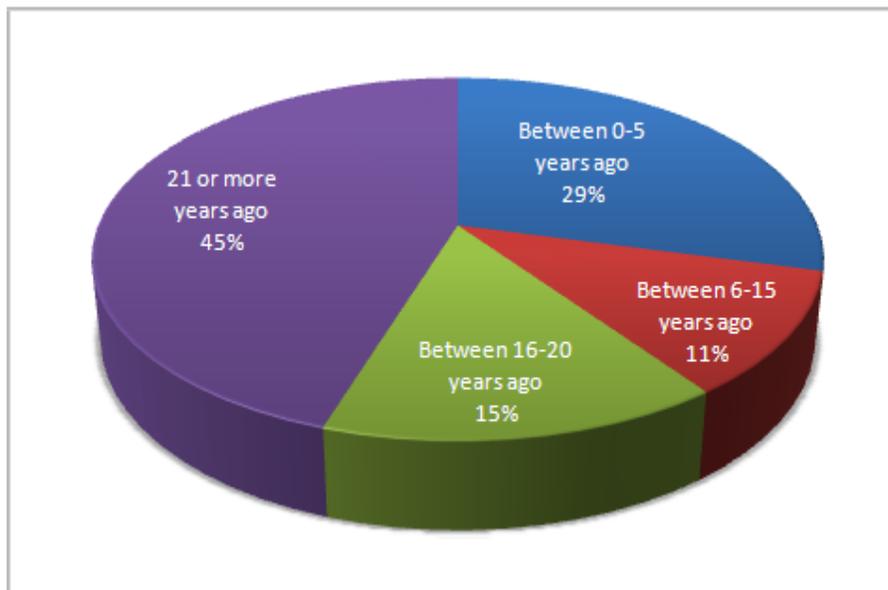
Figure 3. Number of attempts made by respondents to quit smoking, all groups combined

4.5.3.2 Ex-Smokers

Overall, of the 61 participants who identified themselves as not current smokers, 46% reported they were ex-smokers, representing 32% of all participants. Almost half of them (45% of ex-smokers) quit smoking 21 or more years ago, while 15% had quit between 15-20 years prior. Eleven percent of ex-smokers had quit between 6-15 years ago, while almost a third of respondents (29%) had quit in the past 5 years (see **Figure 4**). When asked what smoking cessation resources they utilized, the majority of them (77%) had utilized no resources at all, while 4% used nicotine replacement therapy.

In Group 2 (participants with COPD), 60% of respondents were ex-smokers, two of whom smoked 10 cigarettes per day when they smoked. Three respondents smoked between 20-25 cigarettes per day while they were smokers; the final participant did not report a smoking level. Smoking was a long term habit in the COPD group with 50% of ex-smokers (3 participants) reporting a smoking history of 40-45 years, and other participants reporting a history of 10-25 years.

Figure 4. Number of years ago ex-smokers quit smoking, all groups combined



When respondents were asked to describe the smoking cessation resources they had utilized (all groups), a wide-range of resources were mentioned, including: nicotine replacement therapy (45%); prescription medication (20%); counselling (15%); and the Canadian Cancer Society Smoker's Helpline (10%).

4.5.3.3 Exposure to Second-Hand Smoke

Of the 53 respondents who had been living with asthma, 70% reported second-hand smoke exposure; 50% of respondents living with diagnosed COPD were exposed to second-hand smoke, while 54% of respondents with undiagnosed symptoms indicated they had second-hand smoke exposure.

Overall, participants believed they were most often exposed to second-hand smoke in public places. Generally, participants in Group 1 (diagnosed asthma) were more likely to identify second-hand smoke exposure in any situation, perhaps reflecting an increased sensitivity to smoke exposure in this group. Among the 49% of participants who felt they were exposed to second-hand smoke in public places, participants with asthma (57% of the group) identified exposure, with lesser exposure in COPD (50% of the group) and undiagnosed symptoms (33%). Further, one-third of participants (33%) indicated that they had exposure to second-hand smoke in their home. A greater proportion of participants living with asthma (36%) were exposed to second-hand smoke than those living with undiagnosed symptoms (33%) and COPD (20%). The work environment was identified as the place where the participants felt they were least exposed to second-hand smoke, likely due to strong healthy workplace laws preventing smoking in these areas (**Table 21**).

Table 21. Exposure to second-hand smoke, by group

Category of respondent	Exposure at Home	Exposure at Work	Exposure in Public places
1- Diagnosed asthma (n=53)	19 (36)	13 (25)	30 (57)
2- Diagnosed COPD (n=10)	2 (20)	0 (0)	5 (50)
3- Undiagnosed symptoms (n=24)	8 (33)	4 (17)	8 (33)
Total	29 (33)	17 (20)	43 (49)

* Totals were calculated using the number of participants in each group

** Numbers in parentheses are percentage values

Key findings/discussion points:

- The highest percent of current, long-term smokers (on average for 47 years) was observed in participants with undiagnosed respiratory symptoms/breathing problems (Group 3). Coupled with the findings from the brief Lung Health Test, these findings suggest that there is a significant level of undiagnosed COPD in the group.
- Alarmingly, close to half of participants with COPD (Group 2) identified themselves as being current smokers, even with the high level of understanding that smoking both causes and hastens progression of the disease and lung dysfunction.
- The majority of current smokers self-reported that they had attempted to quit multiple times and 27% of them had not used any smoking cessation aid.
- Almost half of project participants believed that they were most often exposed to second-hand smoke in public places.
- Overall, participants with asthma indicated that they were more at risk to exposure of second hand smoke than participants diagnosed with COPD. This may reflect an increased sensitivity to environmental smoke resulting in asthma flares.

4.5.4 Physical Activity

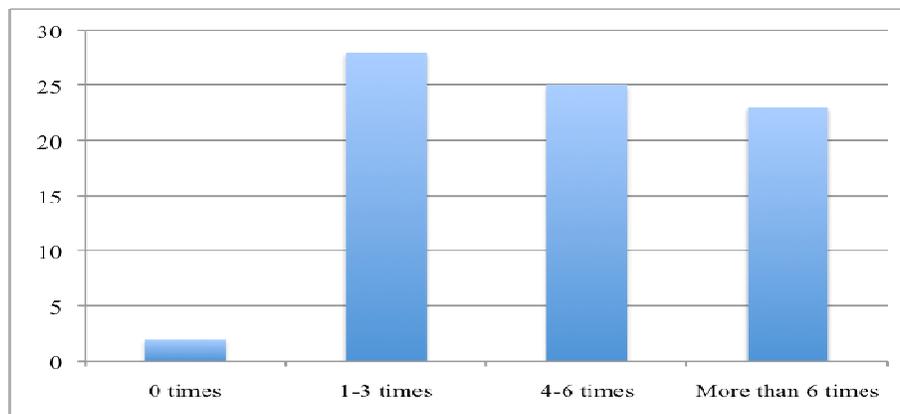
Participants were asked to respond to a series of questions about their physical activity, how often they exercised and what types of physical activities they were involved in. The questions were adopted from tools developed by the World Health Organization (WHO)²⁷ (**Table 22**). Overall, most (**86%**) respondents indicated that they exercised regularly. More specifically, the majority of participants (64%) reported regular walking as exercise; fewer participants reported biking, weight training, and running, with 15%, 14% and 13% of all participants respectively undertaking these forms of exercise. Other forms of exercise included swimming (8%), cardio (8%), and yoga (7%) or other unspecified exercises (11%).

Table 22. Participation in physical activities, by group

Activity	Group 1 Diagnosed Asthma (n=53)	Group 2 Diagnosed COPD (n=10)	Group 3 Undiagnosed symptoms (n=24)
Walking	36 (68)	7 (70)	13 (54)
Running	7 (13)	0 (0)	4 (17)
Biking	9 (17)	0 (0)	4 (17)
Weight training	9 (17)	1 (10)	2 (8)
Cardiovascular exercise	6 (11)	0 (0)	1 (4)
Swimming	5 (9)	0 (0)	2 (8)
Yoga	5 (9)	0 (0)	1 (4)
Other	8 (15)	0 (0)	2 (8)

* Numbers in parentheses are percentage values, based on the group size

Participants were also asked to describe how often they exercised per week, represented in **Figure 5** below. Overall, a fairly equal proportion of respondents indicated that they were engaged in physical activity 1-3 times per week, 4-6 times per week, and more than 6 times per week.

Figure 5. Number of times exercised per week, all groups

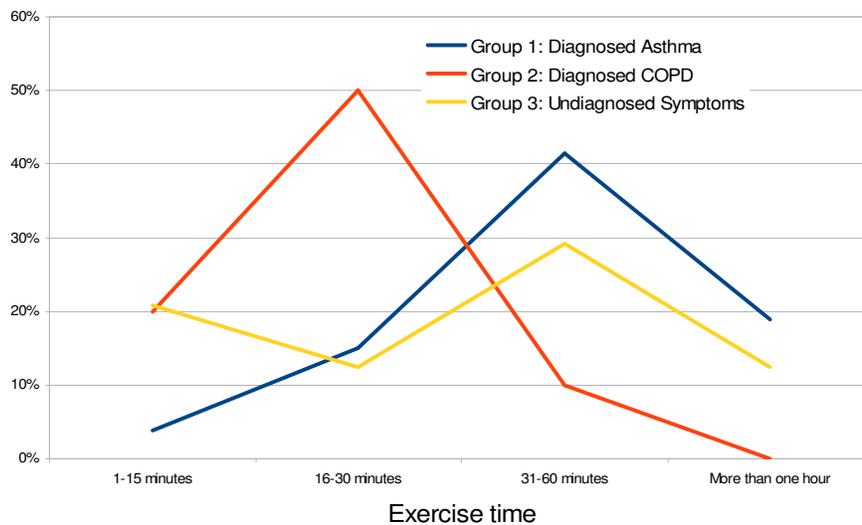
Furthermore, the majority of participants with asthma self-reported exercising 4-6 times a week; a third of participants with COPD indicated to be involved in physical activities more than 6 times a week, while most participants from Group 3 specified that they exercise on average 1-3 times a week (**Table 23**).

Table 23. Number of times exercised per week, by group

Times per week of exercise	Group 1 - Diagnosed Asthma (n=53)	Group 2 - Diagnosed COPD (n=10)	Group 3 -Undiagnosed symptoms (n=24)
1-3 times per week	13 (25)	2 (20)	9 (38)
4-6 times per week	17 (32)	2 (20)	3 (13)
More than 6 times per week	11 (21)	3 (30)	7 (29)

* Numbers in parentheses are percentage values

Participants were also asked how much time they exercised on each occasion. Based on the answers provided, the participants with asthma are more likely to exercise longer during each exercise session than the other two groups, with 42% of the group exercising for 30 to 60 minutes and 19% exercising more than one hour. This compares with 10% and 29% of the COPD and undiagnosed groups respectively exercising for 30 to 60 minutes and 0% and 13% exercising for more than one hour. Half (50%) of respondents with COPD were engaged in 16-30 minutes of exercise on each occasion. Furthermore, both Group 1 and Group 3 have a similar pattern of time spent exercising (with most participants reporting 30 to 60 minutes), while Group 2 participants mostly report 16 to 30 minutes, suggesting that this group has degraded stamina, consistent with ongoing and permanent decrease in pulmonary function and respiratory degradation. Group 3 participants reported a significant proportion of individuals exercising for the shortest period (up to 15 minutes). This data is presented in **Figure 6**.

Figure 6. Length of each exercise session, by group

Participants who reported no regular exercise were asked to identify the specific barriers limiting their ability to exercise. In Group 1, responses included the following: asthma, arthritis, back injury, sinus congestion, “chest feeling tight”, hip/knee replacement, lack of motivation, work schedules, and fatigue. Results were similar for Groups 2 and 3 (participants with COPD and respiratory symptoms).

4.5.4.1 Breathing Exercises

Participants in all groups were asked if they performed specific breathing exercises. Overall, almost a quarter (25%) of participants (28% in Group 1, 10% in Group 2 and 17% in Group 3) self-reported performing breathing exercises, including deep breathing, diaphragm breathing, pursed lips breathing, meditation, tai-chi, yoga, physiotherapy, chair exercises and Pilates. In regards to the frequency, more than half of those who reported breathing exercises (55%) performed breathing exercises between 1-3 times per week. Fewer individuals reported higher frequency of breathing exercises, with 15% and 20% of participants who did breathing exercises reporting four to six sessions and greater than seven sessions per week, respectively.

Key findings/discussion points:

- A high self-reported level of exercising was observed across groups.
- There is a disconnect between the self-reported level of limitation in physical activities (50% of participants overall) and participants reporting engagement in exercising.

4.5.5 Community Resources

Participants were asked to describe any community resources offering respiratory illness management information and educational materials of which they were aware (summary of results in **Table 24**). In total, 40% of respondents were aware of community organizations that offer respiratory health education and resources, including the Asthma Society of Canada (24%), the Lung Association (29%), the Asthma and Allergy Information Association (7%), Public Health (10%), the Canadian Cancer Society/Smoker's Helpline (11%), and COPD Canada (6%). Additional resources that were cited by participants included Centre for Addiction and Mental Health (CAMH), the Firestone Clinic (Hamilton), physicians, drug store and pharmacists, and the Health Canada website (8% combined).

Table 24. Awareness of community resources, all groups combined

Community Resources	Aware of community resources
The Asthma Society of Canada	21 (24)
The Lung Association	25 (29)
Asthma and Allergy Information Association	6 (7)
Public Health	9 (10)
Canadian Cancer Society/Smoker's Help Line	10 (11)
COPD Canada	5 (6)
Other (CAAP, physician, drug store, Firestone clinic, CAMH)	7 (8)

* Totals were calculated using the total number of respondents from categories 1, 2 and 3 (n=87)

** Numbers in parentheses are percentage values

Additionally, participants who indicated their awareness about resources were asked whether or not they had utilized any of the resources. In all, 15 participants (17% of all participants) had made use of these community resources and 10 participants (11% of all participants) found the resources useful and/or helpful. Further analysis by the group showed that 11 respondents with asthma (21%) had utilized resources and nine of them

(17%) found them to be useful and/or helpful. One participant who was living with COPD had used these community resources and found them helpful.

In Group 3, three (38%) of eight participants aware of community-based resources for chronic respiratory diseases had utilized some of them. It is worthwhile to mention that only 8% of respondents with undiagnosed respiratory symptoms had actively looked for information and advice about their respiratory symptoms/breathing problems, while 33% were aware of existing community resources. However, almost half of Group 3 participants (42%) expressed worries about their respiratory health and having breathing problems.

In Group 3, 50% of respondents felt that they had enough information to make a healthy lifestyle choice. Among resources to be most useful for making healthy lifestyle choices, participants noted Canada's Food Guide, diets, physicians, and organic nutrition.

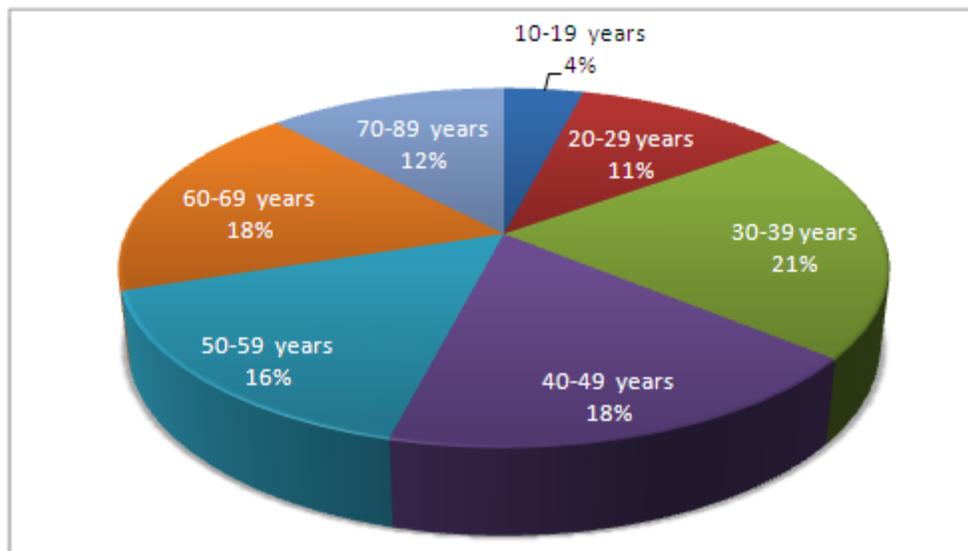
Key findings/discussion points:

- Only a small percentage of participants in the group with undiagnosed symptoms actively looked for information about their symptoms, possibly suggesting a lower interest in respiratory health.
- There is a difference between awareness of community resources that offer educational materials on respiratory health and actually utilizing them as a significant percentage of project participants (40%) were aware of existing resources; however, a much smaller percentage of those participants actually used the resources at some point.

4.5.6 Phase I Encounter Data

Along with people who had agreed to participate in the research component of the PLATE project and completed surveys for Phase I, there were also encounters – conversations with potential participants that occurred at the Airways Clinics. These individuals were unable to participate in the research component mostly due to time constraints and language barriers.

In total, 229 individuals approached the Airways Clinics display table: 140 encounters happened at the Toronto Clinics and another 89 at the Hamilton Clinics. Approximately 52% of these encounters occurred with female participants; ages ranged from 10-89 years (see **Figure 7**).

Figure 7. Age of encounter participants, females

Overall, 34% of participants who were involved in encounters had previously been diagnosed with either asthma or COPD and 39% of them were searching for asthma information for themselves or family members. Notably, these encounters involved 19% of individuals who had general health inquiries. It should also be noted that many participants involved with encounters were looking for more than one type of information.

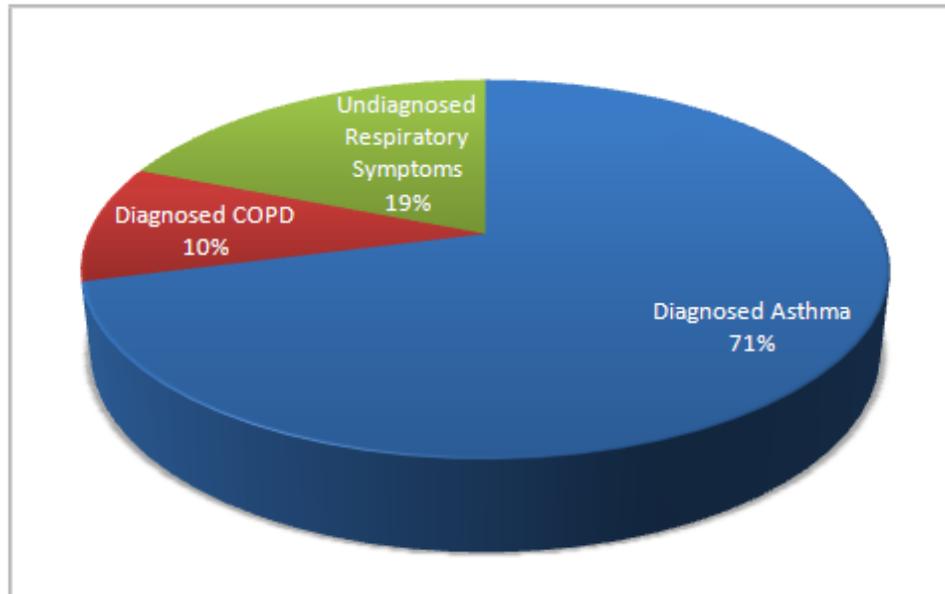
One of the key observations resulting from the encounter data was that there was great interest in the Airways Clinics and the need for information and education related to chronic respiratory disease (asthma, associated allergies, COPD, and smoking cessation) in the community.

4.6 Phase II Findings

At the time of recruitment, all 87 Phase I participants agreed to participate in a post-questionnaire. However, only 31 participants completed Phase II (a telephone post-questionnaire) when contacted 6 months later. A variety of reasons caused the loss of participants, including withdrawn consent, changed contact information, and time constraints. The purpose of this post-questionnaire was to ask respondents to describe their respiratory symptoms and the current disease status as well as the extent to which they were able to utilize knowledge and the self-management skills that they learned at the Airways Clinics (Phase I). The post-questionnaires are presented in *Appendix 15*.

In Phase II, 71% (n=22) of respondents had asthma (Group 1); 10% (n=3) had COPD (Group 2), and 19% (n=6) of respondents were experiencing undiagnosed respiratory symptoms/breathing problems (Group 3) (**Figure 8**).

The nature of the programme has a strong potential to influence the data, particularly during follow-up interviews. The participants for all phases are self selected and those individuals who feel that they want to discuss their conditions will be over-represented. The risk is that individuals who have improved their control of their disease may not wish to continue, or feel that because they don't have as profound symptoms, they are no longer eligible for the programme.

Figure 8. Distribution of participants based on their diagnosis, Phase II

4.6.1 Clinical and Medication History

In Phase II, respondents were asked to describe respiratory symptoms they had experienced within the last month. Overall, more than half (55%) of all respondents indicated they had experienced asthma, COPD or respiratory symptoms; 71%, 41% and 6% of those respondents with symptoms noted daily, 1 – 2 days per week, or 1 – 2 days a month of symptoms, respectively.

By group, 55% of Group 1 participants had experienced asthma symptoms in the last month. Within this subset, 58% experienced these symptoms on a daily basis, 33% experienced symptoms 1-2 days per week and 8% did so 1-2 days per month. Participants who experienced symptoms in Group 1 were asked to describe the symptoms they had been experiencing. Coughing (67%), chest tightness (42%), wheezing (33%), difficulty breathing in general (67%), and shortness of breath (58%) were reported. Comparison with the Phase I data showed an improvement in both the number and frequency of symptoms: In Phase I responses, 87% reported symptoms in the last month, compared with 55% of Phase II participants. Symptoms were experienced daily, 1 to 2 days per week, or 1 to 2 days per month in 43%, 23%, and 19% of Phase I responses, compared with 32%, 18% and 5% of all respondents in Phase II.

For Group 2, two-thirds of Phase II respondents reported experiencing symptoms, with half of these (one third of the entire group) reporting daily symptoms and the other half reporting symptoms 1 to 2 days per week. In Phase I, 80% of participants noted that they were experiencing symptoms, all on a daily basis.

For Group 3, the percentage of participants reporting symptoms in the prior six months decreased from 75% in Phase I to 50% in Phase II. As with Phase I, the participants reporting undiagnosed respiratory symptoms were administered a brief lung health questionnaire. As with Phase I, the participants reported a significant number of risk factors for COPD: All the Phase II participants were over 40 years of age (88% in Phase I), one-third reported frequent cough (58% in phase I), half reported sputum production (58% in Phase I) and finally, two-

thirds reported excessive breathlessness (42% in Phase I). These results demonstrate a similar risk of COPD in this group in both phases. Differences in the percentages are likely due to the differences in the sample size.

As with Phase I, participants were asked to report on any limitations they had experienced due to their respiratory disease or symptoms. Overall, 13% of respondents had missed school or work due to their asthma, COPD, or other breathing problems. Thirty-two percent (32%) of respondents had their social activities limited, while 58% of participants had their physical activities limited. Thirty-five percent of respondents (35%) had experienced limited daily activities because of their asthma, COPD or other respiratory problems (see **Table 25**).

A comparison of the Phase I and Phase II findings show a similar level of interference with most activities categories. However, there is a slight decrease in the proportion of respondents in Phase II reporting interference with regular activities (35% in Phase II, 49% in Phase I). These results must be interpreted with caution; as patients are presumably more educated regarding their condition, it is possible that they are more sensitive to disrupted activities, leading to an increased rate of reporting of disruptions. Further, the small sample sizes introduce greater changes for variability.

Table 25. Limitations in various activities because of asthma, COPD, and breathing problems, all groups combined (Phase II)

Occurrence of symptom	Symptoms of asthma, COPD, breathing	Missed school/work	Missed social activities	Limited physical activities	Limited daily activities
Yes	17 (55)	4 (13)	10 (32)	18 (58)	11 (35)
No	14 (45)	27 (87)	21 (68)	13 (42)	20 (65)
Total	31 (100)	31 (100)	31 (100)	31 (100)	31 (100)

* Numbers in parentheses are percentage values

Within Group 1, 18% of respondents reported they had missed school or work because of their asthma, while 27% had their social activities limited. Fifty-five percent (55%) of respondents had their physical activities limited by their asthma symptoms, while 36% had their regular/daily activities limited by their symptoms. For Group 2, one-third of respondents reported interference with social activities, while all respondents reported interference with physical activities. Finally, for Group 3, interference with daily, social and physical activities were reported by 50% of respondents.

Participants were also asked about the types of medical attention they had received since attending the Airways Clinic six months earlier (see **Table 26**). During the previous 6 months, 10% of participants had visited the emergency room for their respiratory symptoms. Ten percent (10%) of respondents had made a visit to a walk-in clinic, and another 19% made an unscheduled visit to their doctor. Only 3% of Phase II participants reported being admitted to the hospital because of their chronic conditions and/or symptoms.

Table 26. Types of medical attention sought for respiratory symptoms in the last 6 months, all groups combined (Phase II)

Types of Medical Attention	Emergency Room	Walk-in Clinic	Unscheduled Dr. Visit	Hospital Admission	Specialist
Yes	3 (10)	3 (10)	6 (19)	1 (3)	5 (16)
No	28 (90)	28 (90)	25 (81)	30 (97)	26 (84)
Total	31 (100)	31 (100)	31 (100)	31 (100)	31 (100)

* Numbers in parentheses are percentage values

When we compare the findings related to this variable from Phases I and II, we can see that the percentage of respondents who sought emergency room care or visited walk-in clinics were similar in both phases (10-11% and 10-13% respectively). With regards to all other types of medical attention, including unscheduled doctor visits, hospital admissions, and specialist appointments, rates decreased notably from Phase I to Phase II. It is important to note that the sample sizes here are very small so one must exercise caution in drawing any conclusions.

Respondents were asked to indicate the number of asthma attacks they had since attending the Airways Clinic six months earlier. Approximately 41% of participants had no asthma attacks at all; 32% of respondents had between 1-2 asthma attacks, while 14% of respondents told us they had between 3-4 asthma attacks. Fourteen percent (n= 3) of respondents had more than 6 asthma attacks since their visit to the Airways Clinic.

Table 27. Frequency of asthma attacks/flare-ups: Comparison of Phase I and Phase II responses

Number of Flares Experienced	Phase I respondents (n=53)	Phase II respondents (n=22)
No Attacks	7 (13)	9 (41)
1-2 Attacks	13 (25)	7 (32)
3-5 Attacks	7 (13)	3 (14)
6 or More attacks	13 (25)	3 (14)
Not reported	13 (25)	0 (0)
Total	53 (100)	22 (100)

* Numbers in parentheses are percentage values

When we compare the occurrence of asthma attacks/flare-ups from Phase I and Phase II (**Table 27**), the findings illustrate an increase in overall asthma control as evidenced by an increase in clients reporting no asthma attacks/flare-ups in the previous six months (13% of asthma clients in Phase I vs. 41% of participants with asthma in Phase II). Furthermore, fewer clients reported having 6 or more asthma attacks/flare-ups in the previous six months (25% in Phase I, 14% in Phase II). The proportion of clients reporting between 1-5 attacks in the previous six months was similar from Phase I to Phase II (38% and 45% respectively). Similar results were also observed for participants with COPD where there was an increase in participants reporting no COPD exacerbations (40% of COPD clients in Phase I vs. 67% of COPD clients in Phase II).

In the post-questionnaire, 14% of participants indicated that their asthma was under control some of the time, and 50% of participants reported that it was under control most of the time (**Table 28**). Overall, 82% of respondents told us it was under control either most or all of the time; 5% felt it was never under control. Again, with the provision of education, the comparison of the data must be considered carefully. There are possibly two

counter-acting factors: Education will provide the participant with a more realistic understanding of control (resulting in an increase in recognition of poor control) while education will provide the participant with tools to improve control.

Table 28. Participant perception of asthma control: Comparison of Phase I and Phase II responses

Asthma control	Phase I respondents (n=53)	Phase II respondents (n=22)
None of the time	5 (9)	1 (5)
Some of the time	12 (23)	3 (14)
Most of the time	23 (43)	11 (50)
All of the time	10 (19)	7 (32)
Not reported	3 (6)	0 (0)
Total	53 (100)	22 (100)

* Numbers in parentheses are percentage values

Participants were also asked if their asthma was under better control as a result of their participation at the Airways Clinics. Forty-six percent (46%) either agreed or strongly agreed that it was under better control as a result of their participation at the Clinics, 41% were neutral, and 14% disagreed with this statement.

In Group 2, all three participants in Phase II with COPD reported that their illness was properly managed some or all of the time since attending the Airways Clinics.

Key findings/discussion points:

- Overall, there are improvements in the occurrence of symptoms across all groups as a lower percentage of respondents experienced asthma, COPD or respiratory symptoms in Phase II (55%) compared to Phase I (82%). The majority of these participants (n=12 or 70%) were those with physician-diagnosed asthma. This finding helps support the objectives of the PLATE programme by improving disease self-management through a subjective measurement (i.e., symptoms).
- There are also improvements from Phase I to Phase II detected in participants' quality of life measured by interference with daily activities (49% vs. 35% respectively). Similar changes were observed in Group 1 (participants with asthma) where there was a reduction in those reporting impacts on daily activities (from 43% to 36%). It is important to remember that there are small numbers in the Phase II sample with only a total of 22 individuals in the asthma group (Group 1).
- There is a decrease from Phase I to Phase II in the number of hospital admissions and unscheduled doctor visits. The latter is a significant finding given that the objectives of the PLATE programme were to improve overall disease management through a reduction in unscheduled primary care visits.
- There is a large increase in the number of participants reporting no asthma attacks in the last 6 months, suggesting an improvement in asthma management/control. A much higher number of respondents in Phase II than Phase I reported having no asthma flare-ups/attacks (41% vs. 13% respectively). A general trend toward the lower ranges of asthma attacks can be noted when comparing Phase II with Phase I results.

- A smaller proportion of clients (9% of clients with asthma in Phase I vs. 5% of clients in Phase II) indicated that their asthma was under control none of the time, indicating self-perceived improvements in asthma management.

4.6.1.1 Breathing Test (Spirometry) and Education

Twenty nine percent of respondents (n=9) had received a breathing test within the last 6 months; all were from the asthma group. Since attending the Airways Clinics, 10% of participants (all from the asthma group) were sent to do a breathing test by their family physicians. Thirteen of the 31 respondents (42%) discussed their peak flow test results with their regular health care provider; 11 of these were from Group 1 (participants with asthma). No spirometry testing was reported in Group 3.

Twenty-three percent of all respondents (n=7) received additional respiratory health education since visiting the Airways Clinic. Of those participants who received additional education about their respiratory condition, 57% received this education from their family physician.

After visiting the Airways Clinics, 65% (n=20) of participants visited their regular physicians. Most participants who did not see their physician reported having no reason to visit with their physician as they did not have problems. One participant noted that they had difficulty in scheduling an appointment. During a physician visit, 42% of all Phase II participants reported discussing their Airways Clinic visit or their peak flow testing results. Of all the groups, Group 3 participants noted the highest proportion of physician visits following the Airways Clinics (83%), followed by COPD and asthma at 67% and 59% respectively.

Participants were questioned on their inhaler technique before and after the Airways Clinic. At the Clinic, participants were asked to demonstrate their inhaler technique and, if required, information was provided to ensure proper technique and optimal delivery of the medication. The majority of participants (74%) indicated that they had correct inhaler technique during the Airways Clinic; only 10% of the participants noted that they had incorrect technique and most of the remaining indicated that the question was not applicable (likely as they did not use an inhaler). Of the participants that did not have proper technique, most suggested that the information provided in the Clinic was sufficient to correct their technique.

Key findings/discussion points:

- A large number of participants (42%) had discussed peak flow results with their regular health care provider after attending the Airways Clinics, demonstrating that the Clinics helped establish a connection between community-based respiratory health education and primary care.
- Of all the groups, Group 3 participants noted the highest proportion of physician visits following the Airways Clinics (83%). However, for individuals without a diagnosis of respiratory disease (Group 3), there was still difficulty in addressing their conditions. None of the Phase II Group 3 individuals received a diagnosis of COPD or asthma following their participation in the Airways Clinics.
- Some participants (10%) were sent to do a breathing test following the Airways Clinics.
- Almost a quarter of participants (23%) had received additional respiratory health education after attending the Clinics and in the majority of cases education was delivered by family physicians. This fact

demonstrates that the Airways Clinics served as a bridge between the community-based intervention and regular primary care.

4.6.1.2 Medication History

Among respondents who had been prescribed new medication (n=8), 50% were given some type of inhaler. Fourteen percent of Group 1 participants had been prescribed a new daily maintenance therapy for their asthma, but only two-thirds reported continuing to use the medication daily. Only 14% of participants with asthma had been prescribed new maintenance medication following the Airways Clinics including Advair, Flovent, and Symbicort.

In Group 1 (participants with asthma), 86% (n=19) of respondents were currently using medication for their asthma at the time of the follow up survey. Many of the participants in Phase I and II were using a Ventolin inhaler. In Phase I, 16 individuals (30% of the entire group) reported using Ventolin/Salbutamol regularly, representing 38% of all reported Ventolin users. As needed, occasionally, during an attack and never were other responses, representing 29%, 14%, 12%, and 2% of all Ventolin users respectively. In Phase II, fewer individuals were using it regularly (33% of all reported uses) with a higher proportion reporting as needed (56%). Occasional use was reported by 11% of users. The decline of the regular use of this medication coupled with the increase in the as-needed use suggests that asthma may be better managed in this group, requiring less use of a rescue medication on a daily basis.

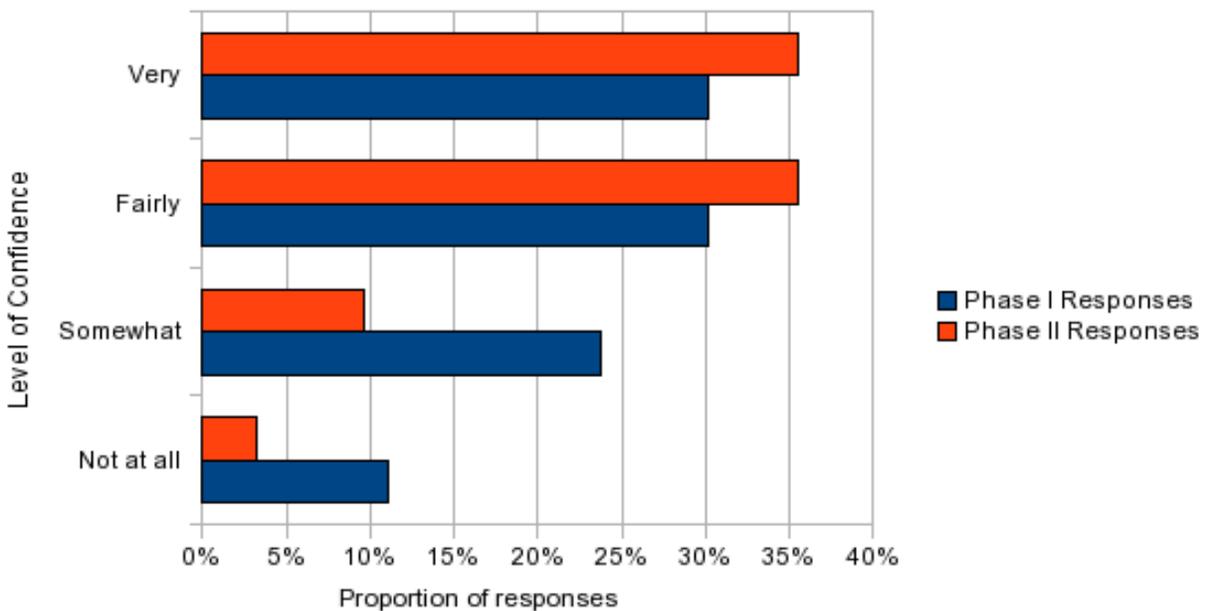
4.6.1.3 Self-Management Strategies

Action plans are an important component of self-management for asthma and COPD. In Phase I, no participants reported having a formal COPD management plan. Similarly, nearly 85% of respondents with asthma did not have an asthma action plan.

In Phase II, a good proportion of respondents (16%) reported that they had spoken with their physician about an Asthma Action Plan/COPD Management Plan. In Groups 1 and 2, all participants who discussed action plans with their physician developed one; however, in Group 3, none of the participants prepared an action plan, despite the fact that 83% of these individuals reported a doctor's visit. It is likely that the action plans were not developed in the absence of a diagnosis of a specific respiratory disease. In Phase II, the majority of action plans (80% of respondents who reported discussing action plans) were completed by a family physician, while the remaining were completed by a specialist. Of participants who developed action plans, 80% indicated that they had actually utilized their asthma action plan and that the use of this plan was very helpful. Among the majority (84%) of respondents in Phase II who indicated that they had not receive an asthma action plan, many felt that it had not come up with their physician, they had forgotten to inquire about getting one, they felt that asthma did not rule their life and, therefore, did not need one, and that they were managing properly without one.

Since visiting the Airways Clinics six months earlier, 82% of respondents in Phase II indicated that they were either confident or very confident about managing their asthma, an improvement over the 60% in Phase I. There was a general trend going from Phase I to Phase II of an increase in the greater confidence levels at the expense of lower confidence levels (**Figure 9**). Overall, 50% of participants indicated that their confidence about managing their respiratory disease had changed after their visit to the Airways Clinics; the confidence change was overwhelmingly positive, with 85% of changes in confidence resulting in increased confidence for disease management.

Figure 9. Confidence for self-managing respiratory disease: Comparison of Phase I and Phase II responses, all groups.



The Group 1 participants were asked how much the Airways Clinics impacted the management of their asthma. The largest proportion of participants either agreed or strongly agreed that participation in the Airways Clinics resulted in better control of their asthma (45%); only 14% thought that their control was not impacted by the Clinics, while 41% did not have an opinion.

Key findings/discussion points:

- There was a shift in how participants had used their Ventolin with a significant increase (56%) of people using it as needed and a decrease (33%) in participants who were using it regularly.
- About a quarter of participants with asthma (23%) had been prescribed new maintenance medication after attending the Airways Clinics.
- A good proportion of respondents (16%) reported that they had spoken with their physician about an Asthma Action Plan/COPD Management Plan and all participants who discussed action plans with their physician developed one. Of participants who developed action plans, 80% indicated that they had actually utilized their action plan and that the use of this action was very helpful.
- Participants reported that, as a result of attending the Airways Clinics, their confidence in self-managing their respiratory disease had increased.

4.6.2 Asthma and COPD Knowledge and Understanding

A key objective of Phase II was to measure the efficacy of education as an intervention in asthma and COPD through objective measures, including changes in the levels of knowledge gained about asthma and COPD management. Many respondents with a diagnosed disease (76% or n=19) agreed or strongly agreed that they had more knowledge about their disease after having attended the Airways Clinics. In Group 1 (participants with asthma), 73% agreed or strongly agreed that they had gained a better understanding of overall asthma management after attending the Airways Clinics and 77% agreed or strongly agreed that their knowledge of the disease had improved.

Participants with asthma in Phase I and II both filled out a knowledge portion of their surveys in order to test their knowledge and awareness of asthma. Results are presented in **Table 29** and articulated below.

Table 29. Asthma knowledge/understanding, comparison between Phases I and II

Asthma Knowledge/Understanding		
Statements	Phase I: % Agree (Diagnosed asthma; n=53)	Phase II: % Agree (Diagnosed asthma; n=22)
Asthma is a chronic condition	48 (91%)	21 (95%)
If left untreated, asthma will not go away	49 (92%)	22 (100%)
My medication needs to be taken all the time, not simply when I am experiencing breathing problems	35 (66%)	17 (77%)
My airways may have inflammation that needs to be treated on a daily basis	40 (75%)	19 (86%)
Asthma is not a nervous or psychological illness	32 (60%)	20 (91%)
You cannot become addicted to your asthma medication, if used all the time	36 (68%)	17 (77%)
Although asthma cannot be cured, it can be controlled with the right medications	48 (91%)	22 (100%)

The findings indicate a clear increase in knowledge and understanding of asthma between Phases I and II. For example, 91% of respondents in Phase I agreed that asthma was a chronic condition, while a slightly higher proportion did in Phase II (95%). Almost every respondent in both phases agreed that asthma would not eventually go away if left untreated, although this number was higher in Phase II (91% vs. 100%). Fewer respondents in Phase II (34% in Phase I vs. 23% in Phase II) believed that they only needed to take their medication when they were having problems breathing. A higher proportion of respondents in Phase II (86%) than Phase I (75%) indicated that airways may have inflammation that needs to be treated daily. Fewer respondents in Phase II (9% vs. 40% in Phase I) believed that asthma was a nervous or psychological illness. A slightly smaller proportion of respondents in Phase II (23% vs. 32% in Phase I) did not know that asthma medication is not addictive. An almost 10% increase in the proportion of respondents in Phase II (91% vs. 100%) agreed that although asthma cannot be cured, it can be controlled with the use of appropriate medications.

In Group 2 (participants with COPD), results from Phase II illustrate an increased level of knowledge and understanding of COPD with respect to the role of smoking in COPD, and the importance of quitting smoking (see **Table 30**).

Table 30. COPD knowledge/understanding, comparison between Phases I and II

COPD Knowledge/Understanding		
Statements	Phase I: % Agree (Diagnosed COPD; n=10)	Phase II: % Agree (Diagnosed COPD; n=3)
In COPD, there is usually gradual worsening over time	6 (60%)	1 (33%)
More than 80% of COPD cases are caused by smoking	7 (70%)	3 (100%)
Quitting smoking is the best way to prevent COPD from progressing	6 (60%)	3 (100%)
Cough and phlegm are common in COPD	9 (90%)	2 (66%)
People with COPD should exercise even if it makes them short of breath	8 (80%)	2 (66%)

In Group 3, participants were asked if they thought that shortness of breath and coughing could be an indicator of asthma. In Phase II, 83% of participants recognized that these symptoms could indicate asthma, an increase from Phase I where only 33% agreed. All Group 3 participants in Phase II could identify smoking as a causal factor for development of COPD, including chronic bronchitis and emphysema, an improvement over the 75% in Phase I. These results demonstrate that even in the absence of a chronic disease diagnosis, participants of the Airways Clinics were being equipped with information to allow for improved management of their respiratory symptoms and the tools required to approach the healthcare system to ensure appropriate treatment and diagnosis.

Key findings/discussion points:

- Findings from Phase II illustrate an increased level of asthma knowledge and understanding amongst project participants.
- Findings illustrate that almost all of the participants in Phase II were aware that asthma was a chronic condition which would not go away if left untreated, indicating a high level of knowledge and understanding of the disease. As well, fewer respondents with asthma in Phase II (34% in Phase I and 23% in Phase II) believed that they only needed to take their medication when they were having respiratory problems, indicating an increased knowledge between Phases I and II about the importance of proper medication use. Findings also illustrate that an increased proportion of respondents with asthma in Phase II were cognizant of the fact that although asthma could not be cured, it would actually be controlled by appropriate medication indicating a better understanding about asthma management and control.
- Fewer respondents in Phase II also believed that asthma was a nervous or psychological condition, indicating an improved and accurate level of knowledge of the overall disease.

- There was an increased level of understanding of the role of smoking in COPD, and the importance of quitting smoking in prevention of COPD progression.
- In Group 3, an increased number of participants recognized cough as a symptom of asthma and all of them indicated that smoking could be a cause of COPD.

4.6.3 Smoking History

In Phase I, findings support the notion that current smokers (29%) were cognizant of the fact that quitting smoking would be beneficial to their respiratory health; 82% of all current smokers had tried to quit at some point in their life, some as many as 10 times. In Phase II, 16% of participants were current smokers; no COPD participants and few asthma participants (9%) were current smokers, but half of Group 3 participants were current smokers. When questioned about the smoking intentions, half of all respondents (50%) who were current smokers considered quitting after attending the Airways Clinics; only 40% of current smokers (two individuals in Group 3) attempted to quit. Unfortunately, there were a few individuals who did not wish to quit smoking and did not see any justification to do so.

Other than smoking, second hand smoke exposure was identified by 26% of participants. This number is greatly different than exposure in Phase I, where 70% of participants identified exposure to second hand smoke. Most participants noted exposure to second hand smoke in public places and at home (13% in each location) and 9% identified exposure at work; however, the exposure in public places was deemed to be occasional in all cases, where half of the exposure at home was considered regular. Similarly, half of the exposure at work was considered regular in nature. A comparison between Phase I and Phase II results for second hand smoke exposure were very consistent for pattern of exposure: approximately one in four individuals identified regular and occasional smoke exposure at home respectively, approximately 15% of individuals identified regular or occasional smoke exposure at work, and approximately half of individuals identified occasional exposure in public places, in both Phase I and Phase II. The only difference noted was that 1 in 4 individuals noted regular exposure in public places in Phase I, while none noted exposure in Phase II. The reason for this difference could be avoidance or many reflect an underlying artefact. Ultimately, it appears that the participants in Phase II were more effective at avoiding smoke exposure (26% reporting exposure compared with 70% in Phase I).

Key findings/discussion points:

- Based on the project findings, it is evident that current smokers were aware of the implications that smoking had on their respiratory health, and as such, either considered, or had attempted to quit.
- According to the findings, respondents seemed to heed the messages regarding the importance of smoking cessation and as a result, in Phase II, 50% of respondents indicated that they had considered quitting since attending the Airways Clinics.
- Second-hand smoke exposure was most common in public places and at home. However, regular exposure was greater in home environments with occasional exposure in public places. Overall exposure to second hand smoke was decreased in Phase II, suggesting that participants are more aware of the impact of smoke and may be avoiding it more effectively.

4.6.4 Physical Activity

In Phase II, respondents were also asked a series of questions related to their level of physical activity. Levels of engagement in physical activity did not change substantially between Phase I and II (87% vs. 91% respectively). Types of physical activity in which participants were engaged in also remained the same including: walking, running, yoga, weight training, and swimming. However, in comparing findings from Phases I and II, there was a dramatic increase in cardiovascular activities and weight training with a decrease in biking, yoga, and walking.

The length of time participants spent undertaking physical activities did not vary from Phase I and II; most participants spent between 1 to 4 hours and more than 6 times each week exercising. However, Phase II participants were more likely to exercise more than 7 times per week than Phase I participants.

4.6.4.1 Breathing Exercises

Overall, 52% of respondents in Phase II performed breathing exercises. In comparison, only 29% from Phase I engaged in similar breathing exercises. In both phases, respondents indicated that they participated in a number of breathing exercises such as: diaphragm breathing; meditation; pursed lips breathing; yoga; and inhalation exercises. Of those participants who were doing breathing exercises, approximately 13% began doing these breathing exercises after their visit to the Airways Clinics six months earlier. Again, looking at participants who noted they did breathing exercises, 44% conducted these exercises between 1-2 times per week, while another 50% engaged in these exercises more than 5 times per week. The group with the highest proportion of individuals who did breathing exercises was Group 1, with 64% noting that they did these exercises. From these individuals, half did exercises 1 to 2 times per week, with 43% doing exercises more than 5 times per week, and 29% doing exercises a full 7 times per week.

Key findings/discussion points:

- In Phase II, participants maintained a healthy level of physical activity, engaging in a wide range of different types of activity, between 1-7 times per week.
- Increased awareness and education related to breathing exercises and physical activity for improved respiratory health translates to an increase in the uptake of these activities. Thus, an increased proportion of respondents began engaging in breathing exercises after their visit to the Airways Clinics.

4.6.5 Community Resources

In Phase II, nearly half (48%) of all respondents indicated that they were aware of community resources that offered advice and information about asthma, allergies and smoking cessation, compared to a smaller proportion (40%) of Phase I respondents. In the six months since the Airways Clinics, 33% of participants with asthma had utilized at least one community resource for their asthma, 75% of whom found it to be helpful. It is important to note that of the participants who had used a community resource in the prior six months, 40% did so as a direct result of their participation at the Airways Clinics. Overall, 90% of respondents had read and/or used the educational materials they were provided with, and nearly every respondent (95% of those who had used the materials) found them helpful. Some of the materials that respondents found most useful included: advice from their physician after discussing their participation in the Clinics; drawing of the alveoli (picture of the lungs); a description of how lungs work; information packages about medications; information about asthma as a chronic

disease; and a book describing asthma triggers. Eighty-two percent of respondents (82%) were aware of the important role that a healthy lifestyle plays in overall asthma management.

Table 31. Awareness of Community resources, all groups combined: Comparison of Phase I and Phase II responses.

Community Resource	Phase I respondents (n=87) aware of resources	Phase II respondents (n=31) aware of resources
The Asthma Society of Canada	21 (24)	6 (19)
The Lung Association	25 (29)	3 (10)
Asthma and Allergy Information Association	6 (7)	2 (6)
Public Health	9 (10)	3 (10)
Canadian Cancer Society / Smoker's Helpline	10 (11)	3 (10)
COPD Canada	5 (6)	1 (3)
Other (CAAP, physician, drug store, Firestone clinic, CAMH)	7 (8)	3 (10)

* Percentages (in parenthesis) are based on the group size.

Participants in Group 3 were questioned about their ability to make healthy lifestyle choices to support their general and respiratory health. Similar to Phase I, only half of the participants thought that they had sufficient information to make correct choices. However, the majority of Group 3 participants (83%) concluded that the information they had gained from the Airways Clinics had increased their understanding of the role that a healthy lifestyle plays in respiratory health.

Overall, 81% of respondents (all groups combined) found their attendance at the Airways Clinics useful: 86% of asthma participants, and 67% each of COPD and undiagnosed participants. Overall, sixty-eight percent of respondents (68%) found the education session with the Certified Asthma/Respiratory Educator (CAE/CRE) most helpful. Forty-four percent of all participants (44%) indicated that they found the materials provided at the Airways Clinics to be most useful (**Table 32**). These materials include: the lung diagram, the medication information package, and the Asthma Society of Canada trigger book.

Table 32. Utility of the Airways Clinics, by group.

	All participants	Group 1 (n=22)	Group 2 (n=3)	Group 3 (n=6)
The Airways Clinic was useful.**	25 (81)	19 (86)	2 (67)	4 (67)
Most Useful Aspect:*				
CAE/CRE Education	17 (68)	13 (68)	2 (100)	2 (50)
Educational Materials	11 (44)	11 (58)	0	0
Peak flow Testing	6 (24)	3 (16)	0	3 (75)
Community Resource Information	3 (12)	3 (16)	0	0
Discussion with M.D.	2 (8)	2 (11)	0	0

* Percentages (in parenthesis) are based on numbers of individuals who found the airways clinic useful.

** Percentages (in parenthesis are based on the total numbers in each group)

All of the participants with asthma and undiagnosed symptoms and two-thirds of COPD participants told us they would recommend the Airways Clinics to family and friends. All respondents (100%) with asthma and undiagnosed symptoms, and 67% of respondents with COPD believed that Airways Clinics should be available across Canada.

Key findings/discussion points:

- There is a general increase in participants' awareness of community resources related to asthma, allergies and smoking cessation; however, there are no specific agencies that have an increased awareness.
- Almost half (40%) of participants in Phase II utilized community resources as a *direct* result of their participation in the Airways Clinics.
- In Phase II, findings support the value of the education session delivered by the Certified Asthma/Respiratory Educator in conjunction with the utilization of educational materials distributed at the Airways Clinics.
- From the Airways Clinics, the majority of Group 3 participants (83%) had gained a better understanding of the role that a healthy lifestyle plays in respiratory health.

4.7 Phase III Findings

A number of participants from Phase II were selected to participate in focus groups in order to elicit their perspectives about the effectiveness of the Airways Clinics, as well as additional related information. Despite the fairly high level of initial interest and commitment of 10 participants, only 2 in-depth interviews were conducted at locations in Hamilton and Toronto.

4.7.1 Primary Themes

The results from the interviews are organized as four primary themes, as outlined in the Focus Group Checklist. Direct quotations from interview transcripts are used to illustrate the participants' experience and knowledge around these topics and issues.

4.7.1.1 Evaluation of Airways Clinics/Effects & Effectiveness of Information

The participants valued the services and resources they received at the Airways Clinics, indicating that the information was interesting and informative. One respondent stated that after being diagnosed at the hospital with COPD, his encounter at the Airways Clinics and the information package he received helped him to understand the implications of his health conditions:

I knew about asthma, and I certainly knew about emphysema because I was a smoker but I didn't know about COPD and I'd never heard about it... I didn't know what it was!...And they [Asthma Educator] gave me this kit with this book, "Living with COPD"...It's invaluable...it really is. It explains exactly what you have and what's going on...It covers everything, living well with COPD, the skills you need to manage your COPD, the whole thing. –P1

The information and resources received by one respondent was educational and helpful, increasing awareness of the health problem, and providing tools and resources for self-management. In addition, it gave the respondent the tools needed for disease self-management, with an improvement in health over the last year.

The other respondent found the peak-flow test to be most informative, alerting the respondent to alarming results. Despite the outcome of the peak-flow test, however, the respondent did not implement an effective plan to manage symptoms after visiting the Airways Clinics.

4.7.1.2 Self-Management Strategies

One respondent believed proper asthma and COPD management is the culmination of two critical things: (1) the result of taking your prescribed medication accordingly; and (2) getting proper medical attention from a trusted physician:

Well you have to use these [medications] all the time. You have to be checked by your doctor. It's just as simple as that. To a great extent, you are your own responsibility. And you have to work with your doctor and your medications. –P1

This respondent emphasized the seriousness of proper respiratory health management and understood that taking his medication regularly is critically important to full health:

I wouldn't be sitting here. I wouldn't be able to see you. I want you to understand this - it really is a very, very serious! We need air to live. And if that air doesn't get through those tubes, you're in trouble...I'd probably be dead or I would be suffering terribly if I didn't have the medication. -P1

The other respondent did not take the prescribed medication regularly, which led to negative thoughts about taking medications. The respondent suggested that the issue of avoiding treatment is also link to denial and fear:

I think perhaps people they don't want to admit it. They are in denial if there is anything wrong or they are scared. I have a girlfriend who is scared. She has other problems and [she says], 'I don't want to know what the doctor says'. – P2

4.7.1.3 Lifestyle/Health and Wellness

One respondent felt that COPD did not interfere with everyday quality of life, maintaining an independent life:

Here again you have to consider age and I again consider that I get around pretty well compared to a number of my contemporaries. I'm not limited. I do not run anymore. I have a cane...even now when I'm out without the cane and I walk my usual fast walk, I do get short of breath. But don't forget here, age! I have to consider that. (P1)

The other respondent disagrees, suggesting that the reason people with asthma do not exercise is because exercise 'constricts their breathing.' As a result, they cannot be involved in vigorous exercise such as playing sports or running:

Well they might do some exercise. I take seated exercise for the heart. Exercise for the heart at the senior centre. I take it easy. I don't do the vigorous ones.

As an ex-smoker, one respondent believes that his previous habitual behaviour is largely the cause of the current health diagnosis:

I guess it had been building over a while. I'd stopped smoking about 6 or 7 years ago...That was one of my resolutions. But as Doctor [names doctor] has said, "it caught up with you". The damage was done. Smoking is a large part of it of course – the cause. (P2)

4.7.1.4 Future Directions/Exploratory Inquiry

Both respondents were uncertain about the need for more public resources and information on respiratory health. One respondent indicated that although resources are available, some individuals just don't seek them out:

Perhaps they have [access to resources] and don't realize it- computer-wise for instance. Not that I have a computer. Perhaps some are not aware as much as they could be...Well you know, there is information in the library and computers and books and so on. If only people would turn to them.

One respondent believed that the public is less informed about COPD overall:

I think there should be more, more things like this. You know I've worked in the periphery of health care for years. I did a lot of work for the CADN Nurses Association in Ottawa and Canadian Public Health and the Vanier Institute of Family...I'd never heard of COPD unfortunately.

COPD is not asthma. It's individual like emphysema; it's a cousin.

Both participants indicated that they would continue to be involved with the Airways Clinics in the future. Both participants affirmed the appropriateness of the location of their Airways Clinics in targeting a broad group of people. Overall, both participants believed in raising the issue of respiratory health; participants made reference to having more focus groups in order to create a forum for open discussion between health care professionals and lay people:

Oh I'm thinking more of the focus group. Include a physician with or as a facilitator. In other words, a doctor who treats and knows about COPD and the Respiratory Department in the North General might be a good starting point. –P1

4.7.2 Key Findings

- Respondents were satisfied with the location of the community-based Airways Clinics.
- There was a level of knowledge of available resources, although respondents knew that many individuals were simply not accessing them.
- There was a need for an open forum for discussions between health care professionals and lay persons in order to facilitate necessary dialogue about asthma and COPD from a patient perspective.

4.7.3 Key Discussion Points

- Improved access and awareness about resources and materials related to asthma, allergy and disease self-management.
- Dialogue needed between health care providers and patients about respiratory health.

5 Implementation of the PLATE community outreach component

As outlined in the original proposal, the main objective of this component was to raise awareness of the Asthma Society of Canada's (ASC) services among healthcare providers, local community agencies, community residents and the general public by informing them about ASC educational resources (e.g. printed materials, educational websites, Asthma Helpline, etc.). The community outreach/awareness program was additionally designed to increase awareness about asthma, allergies and COPD among local healthcare providers and community residents by promoting educational services available through the ASC, highlighting the importance of asthma, asthma/allergy and COPD education, and the proper management of these conditions. The programme was also aimed at establishing linkages with a variety of community resources, namely local schools, pharmacies, hospitals and other community agencies (e.g. sport organizations, senior residences, daycares, etc.). The three specific main goals of the community outreach project were:

- **Goal #1** - To increase awareness about ASC services among healthcare providers and resources;
- **Goal #2** - To increase awareness about ASC services among local community agencies;
- **Goal #3** - To increase awareness about ASC services among community residents and the general public.

The City of Hamilton, one of the pilot sites for the PLATE project, was chosen for the implementation of the PLATE community outreach component. The immediate neighbouring communities of Ancaster, Dundas, and Stoney Creek were also included in community outreach as they represent bordering neighbourhoods and belong to the City of Hamilton catchment area. Both PLATE pilot sites (Toronto and Hamilton) were considered for the community outreach program implementation and the final decision was made based on the community needs, its size, demographic characteristics, the structure of healthcare and community resources as well as human and financial resources available to deliver community outreach activities. Overall, it was believed that the Hamilton community would be a better host for implementation of the community outreach component based on the following community characteristics:

- The size of the community and its demographics. According to Statistics Canada,²⁸ the population of the City of Hamilton in 2006 was 504,500, making it the 8th largest city in Canada. Despite being one of the ten largest cities in Canada, the City of Hamilton still represents a community that is fairly accessible and geographically compact and therefore more feasible for delivering outreach activities. Additionally, the diversity of the population in Hamilton is similar to that of the Canadian population and this facilitates extrapolation of any lessons and experiences gained during the community outreach component implementation to other Canadian communities.
- The structure/availability of healthcare and community resources. Hamilton has a variety of healthcare settings, including hospitals, university/academic centres, Family Health Teams (FHT), Family Health Groups (FHG), independently operating family physicians/specialists in solo or group practices (Medical Centres), Community Health Centres (CHC) and Student Health Centres. This is a good cross section of healthcare resources that could be targeted for outreach activities. Similarly, there is a wide availability of community resources that could be included in community outreach in the city.

- Project capacity and resources. Human resources that can be used to deliver the community outreach component were limited by the project funding. However, the majority of the ASC project staff resided in Hamilton or nearby communities so they were more familiar with the local healthcare and community services. For these reasons, the City of Hamilton was selected as the community outreach site to maximize the resources available and efficacy of the community outreach component.

Community outreach and promotional activities were identified based on the community needs and an assessment of the existing services available at the chosen community (the City of Hamilton). A community awareness plan (*Appendix 18*) was developed, which focused extensively on increasing public awareness and education, and included, but was not limited by, provision of educational materials and resources suitable for a variety of healthcare and community settings. Further, outreach to the general public through advertising in community papers and other local media within the chosen community was planned to be included in community outreach activities.

Based on the PLATE programme logic model and the main goals described previously, three groups were identified as main targets for community outreach within the chosen community of Hamilton:

1. Local healthcare providers and resources (e.g. local primary care physicians, Public Health, Family Health Teams, Community Health Centres, walk-in clinics, pharmacies, etc.)
2. Local community resources and agencies (e.g. schools, daycares, recreation and community centres, libraries)
3. Community residents

Including these three groups in community outreach allows for effective distribution and dissemination of the ASC educational material and resources, raising awareness of asthma, associated allergies and COPD across a broad representation of groups and individuals within the chosen community.

Community outreach activities were implemented using a three phase approach (*Appendix 18*). Phase I involved the identification of healthcare providers, healthcare resources and community resources within the community of Hamilton. It also included the identification of advertisement opportunities with local media (newspapers, radio and TV stations). The goal of Phase II was informing local community agencies, community residents, and the general public about the educational materials and services offered by the ASC. Phase III encompassed the promotion of ASC resources and services among the three groups as described above.

5.1 Outreach to Healthcare Providers and Healthcare Resources

5.1.1 Phase I - Identification of Healthcare Providers and Healthcare Resources within the City of Hamilton

The ASC project staff conducted an extensive electronic search of available databases to identify healthcare providers within the City of Hamilton. This information was collected through an internet search using the Google search engine as well as by accessing websites of professional organizations. For example, the Ontario College of Physicians and Surgeons (www.cpso.on.ca) has a website feature called “Doctor Search”, which can be used to identify healthcare providers working within a particular community. The same listing is also

accessible through the “Find a physician” link on the Ontario College of Family Physicians (OCFP) website (www.ocfp.on.ca). The principle result of the Google search was identification of the City of Hamilton website (www.myhamilton.ca), which provides information about the healthcare resources available in the community.

5.1.1.1 Healthcare Providers

Using the search methods described above, the following types of **healthcare providers** working within the City of Hamilton have been identified:

- **Family Physicians**

Family physicians are the primary point of care for the management of many chronic diseases, including asthma, associated allergies and COPD. Therefore, informing them about the educational materials and resources available through the ASC would improve their awareness and knowledge about existing services and empower them to provide their patients with proper and current information and educational materials as well as encourage patient referrals to the ASC counselling services (e.g. Asthma Helpline). Additionally, many physician offices have a patient information area with a variety of health related information; these displays can be enhanced for the benefit of patients by the addition of information and educational materials about chronic respiratory diseases and their proper management.

Through the “Doctor Search” feature on the Ontario College of Physicians and Surgeons website (www.ocfp.on.ca), the project staff created a contact list of family physicians practising within the community. In total, 377 family physicians were identified. Following the elimination of duplicate practice physicians and practice locations, the list was refined to include 355 family physicians.

Family physicians can practice solo or be part of group practices. There are a variety of group practice models, including Family Health Teams (FHTs), Family Health Groups (FHGs), Community Health Centres (CHCs) and others in the province of Ontario. Some physicians also form Medical Practice Groups by sharing common administrative resources or work in walk-in clinics. The list obtained from the Ontario College of Physicians and Surgeons website did not provide a breakdown of physicians by practice category so this information was compiled by performing additional searches and grouping family physicians under the following types of practices:

- **Family Health Teams (FHTs)**

A Family Health Team (FHT) brings together different healthcare professionals in a coordinated approach to delivering better care. Physicians provide care as part of an interdisciplinary team of healthcare professionals; one of the common goals is the delivery of high quality healthcare for chronic diseases. FHTs in the Hamilton area were identified by accessing the Ministry of Health and Long-Term Care (MOHLTC) website (www.health.gov.on.ca). The Hamilton FHT represents the largest health team within the community (the Hamilton FHT²⁹) and includes 132 family physicians of the 355 physicians identified in the Hamilton area. These physicians and interdisciplinary teams are geographically dispersed across the City of Hamilton and together they serve over 250,000 people. By providing educational and resource materials to the Hamilton FHT, outreach activities were expanded beyond family physicians to include other healthcare professionals, raising their awareness of available ASC services and resources. The inclusion of allied healthcare providers allows for

greater dissemination of information and education to FHT clients, encouraging repeat messaging to patients at each patient-provider interaction.

- **Community Health Centres (CHCs)**

The City of Hamilton website lists 2 CHCs - the North Hamilton Community Health Centre (www.northhamiltonchc.org) and the Hamilton Urban Core Community Health Centre (www.hucchc.com). Additionally, there is a French speaking Community Health Centre (Centre de Santé Communautaire a Hamilton, www.centredesantecommunautaire.com), which provides a full range of services from primary healthcare and social services for the Francophone population of Hamilton and Niagara. CHCs provide primary care services with an emphasis on health promotion, disease prevention and chronic disease management. Typically, CHC primary care teams include physicians, nurse practitioners, nurses, social workers, health promoters, community health workers, and often physiotherapists, chiropractors, nutritionists, dieticians and asthma/respiratory educators. The provision of ASC educational materials and resources at those centres enhances respiratory health information and education delivered to CHC clients and community residents.

- **Family Health Groups (FHGs)**

There is one FHG in the City of Hamilton with 17 associated family physicians (lead physician - Dr. T. Packer). FHG physicians benefit from receiving information and materials from the ASC for distribution to their patients to improve patient understanding about proper management of chronic respiratory disease.

- **Medical Practice Groups**

Medical Practice Groups are practices with more than 5 independent physicians working at the same location and sharing common administrative resources. Four (4) Medical Practice Groups were identified in the City of Hamilton using the Hamilton Public Health website (www.myhamilton.ca). These groups have been singled out as there is an opportunity to provide resources and support to the large number of physicians practicing at the same location with a large patient population served.

- **Walk-in Clinics**

Walk-in clinics were identified through the websites of the MOHLTC and the City of Hamilton. In total, there are 7 walk-in clinics within Hamilton (Locke Street Medical Clinic, Queenston Walk in Clinic, Westdale Medical Clinic, Dundurn Medical Centre, James Street Medical Clinic, Mountain Medical Walk in Clinic, and East Hamilton Walk in Clinic). As many community residents do not have regular family physicians and access walk-in clinics frequently with various concerns (including management of their chronic conditions), this point of contact is considered an excellent opportunity to provide information to patients who are in greater need for proper support and education when it comes to effective management of their chronic respiratory diseases. Patients who use walk-in clinics as their primary contact with the healthcare system lack the continuity and support of a single primary care contact point and would, in many cases, lack the resources and information required to adequately manage chronic conditions, including respiratory disease.

- **Specialists**

Typically, respirologists, allergists and pediatricians provide a high level of patient care for respiratory disease and allergy management as they are the specialists that are involved in providing care to patients with chronic respiratory disease. Pediatricians were included as they manage a large proportion of children with asthma and allergies. The Ontario College of Physicians and Surgeons website, supported by the Royal College of Physicians and Surgeons of Canada website (www.rcpsc.medical.org), provides contact information for 27 respirologists, 7 allergists, and 91 pediatricians working in the Hamilton area. Following consolidation of physicians co-located at the same clinic, 7 pediatric clinics and 5 pediatricians with independent community practices were identified. The specialists were included as a separate group because referrals to the ASC resources and educational materials could help reinforce the key messages and education that their patients and caregivers are currently receiving while attending specialist clinics.

5.1.1.2 Healthcare Resources

The ASC research staff expanded the environmental scan to include healthcare resources in the chosen community as an opportunity to provide educational resources and materials to healthcare providers outside of the traditional primary care locations. Outreach targeting community healthcare resources would enhance the distribution of materials to a different patient population than those accessing primary care resources as well as community residents who utilize these alternative services on a regular basis. The following **healthcare resources** have been identified in the City of Hamilton:

- **Hospitals**

Community hospitals were identified using the Google search engine. The City of Hamilton has 2 community hospitals: St. Joseph's Healthcare (www.stjoes.ca) and Hamilton Health Sciences (www.hhsc.ca), which is a family of hospitals. The latter includes McMaster University Medical Centre and McMaster Children's Hospital, Hamilton General Hospital, Chedoke Hospital, and the Henderson General Hospital. Individual hospital websites were accessed to collect contact information for the following Departments - Emergency Rooms, Out Patient Departments, Pulmonary Function Labs, Respirology Clinics, Asthma/Allergy Clinics, and outpatient hospital pharmacies. These hospital departments and clinics were selected as outreach targets because they generally have a high level of direct involvement in the management of chronic respiratory disease, provide patients with appropriate information and education, and promote patient self-management. Patients attending the above mentioned clinics for diagnostic testing and education would benefit from receiving educational materials and resources. As well, hospitals often have a patient information/education display area that can be viewed by patients as well as the general public visiting the hospitals.

- **Community Pharmacies**

Persons with asthma and other chronic respiratory diseases use local pharmacies to fill their prescriptions for respiratory medications. Pharmacists play an increasing role in chronic disease management by providing their customers with proper information about medications and answering other inquiries related to chronic disease management. Therefore, local pharmacies are considered a good venue for outreach activities to asthma, allergy and COPD sufferers. Provision of educational materials and resources to pharmacists will increase their knowledge about existing educational services and should lead to referrals of their clients and community

residents to resources available from the ASC. The ASC project staff identified pharmacies located in Hamilton and the surrounding communities of Ancaster, Dundas, and Stoney Creek by accessing the Ontario College of Pharmacists (www.ocpinfo.com) and (www.411.ca) websites. In addition, because of the existing “Airways Clinics” partnership with Dell Pharmacy, a list of Dell Pharmacy community pharmacies was available. Dell Pharmacy is a locally owned and operated pharmacy chain with 17 locations in and around the City of Hamilton. In total, 117 pharmacies were listed.

- **Public Health Department**

Many community members access their local public health office for information about disease management and referrals to other organizations, such as the Asthma Society of Canada, for specific information and resources. The ASC has established a partnership with the Public Health Department during implementation of the community-based “Airways Clinics.” The Department was provided with information about the PLATE programme as well as the upcoming clinics in the area. Taking into consideration frequent interactions between public health professionals and community residents, further outreach to the Public Health Department was included in the outreach plan to provide the Public Health Board with more information about educational services offered by the ASC. This information could help public health professionals refer customers to proper sources of health-related information.

- **Community Care Access Centre (CCAC)**

An internet search for Community Care Access Centres on Google identified the Hamilton and area CCAC (www.ccac-on.ca), which provides care in the home, the community and long term facilities for residents of Hamilton. As CCACs deal with many health-related issues across many facilities and individuals within the community, it was felt that they could potentially benefit by having information about ASC services to which they could refer their clients with chronic respiratory disease for further information and education.

- **Workplace Safety and Insurance Board (WSIB)**

The WSIB plays an important role in promoting workplace health and wellness. A Google internet search for a WSIB location in Hamilton led to the www.wsib.on.ca website, where the WSIB Hamilton and area office was identified. As the workplace can be a cause of asthma (work-related asthma) or aggravating factor in those with asthma (work-aggravated asthma), information about the ASC resources and educational materials could help educate WSIB clients on proper asthma management and prevention.

- **University and College Student Health Centres**

The student population frequently suffers from inadequate asthma management and seeks help at their respective student Health Centres. Three (3) main Student Health Centres, namely Mohawk College (www.mohawkcollege.ca), McMaster University (www.mcmaster.ca) and Redeemer University College (www.redeemer.ca), were identified through a Google search for colleges and universities located in Hamilton. Provision of ASC educational materials and links to the ASC web-based resources might serve as a reputable source of up-to-date information about chronic respiratory disease for the student population, which frequents websites and use the internet as a way of finding necessary information and research.

- **Local Representatives of Pharmaceutical Companies**

Local representatives of pharmaceutical companies, which have products in the respiratory area (e.g. AstraZeneca, GlaxoSmithKline, Pfizer, Nycomed, and Merck Frosst), work closely with local healthcare providers to inform them about therapeutical products available in the area and their benefits. One of the roles of the pharmaceutical representatives is to visit individual physicians with the latest information that would be of value to their practice. By providing a sample of ASC educational material and resources, the representatives could further enhance the opportunity to speak with local physicians about the ASC services available both to their offices and patients.

5.1.2 Phase II – Provision of Information about the ASC Educational Materials and Services to Local Healthcare Providers and Healthcare Resources

Following the identification of healthcare providers and healthcare resources, the ASC project staff considered a number of outreach opportunities and methods. A variety of methods were developed to provide healthcare professionals and healthcare resources with information about the ASC educational materials and services:

1) Promotional/Informational Letter

For the initial contact with local healthcare providers and organizations, the ASC project staff developed a promotional/informational letter (*Appendix 19*) describing the Asthma Society of Canada, its educational materials and resources available. The letter was to serve as an introduction establishing an initial connection between the ASC and local family physicians.

2) ASC Promotional package

The ASC project staff prepared a promotional package for distribution to local healthcare providers and healthcare settings. The package included a promotional letter highlighting the educational materials and resources available from the ASC that could benefit healthcare professionals and their patients, an order form to be completed to request ASC educational materials, and a business card with contact information for further inquiries.

3) ASC Resource Kit

A resource kit was developed to provide healthcare professionals with more detailed information about ASC services and contained promotional materials (see a description of the promotional package above) as well as a sample of the ASC educational materials allowing recipients to see and review the educational materials first hand. The kit was professionally designed with all the materials placed in a folder with the ASC logo on the front and includes the following resources (a sample of the resource kit is submitted along with the final report as part of the report package):

- ✓ Promotional/informational letter describing the educational materials and resources available from the ASC and addressed to different healthcare professionals and organizations (physicians, pharmacists, healthcare organizations, etc.)
- ✓ The ASC Asthma Basics Book Series (Diagnosis, Triggers, Medications, Asthma Kids)

- ✓ ASC educational materials order form with contact information for ordering materials
- ✓ Informational letter on spirometry and its use for chronic respiratory disease diagnosis and management to promote the use of this procedure to help assess and manage these diseases properly
- ✓ Promotional brochure on “Healthy Living and Asthma” to promote a healthy lifestyle among people suffering from chronic respiratory disease
- ✓ Fact sheet describing the Asthma and Allergy Friendly Certification Program.³⁰ This letter was provided to inform potential customers about this program, which is designed to provide information on asthma and allergy certified products that can be used to help address environmental control issues faced by people with asthma and associated allergies
- ✓ Information letter from AllerGen,³¹ the National Centre of Excellence for asthma and allergy research, which is located within the City of Hamilton, to inform healthcare providers about recent research findings in the area of asthma and allergies
- ✓ Asthma Patient Bill of Rights brochure and poster developed by the ASC and National Asthma Patient Alliance (NAPA),³² a volunteer-based membership group of the ASC to promote proper asthma management and inform healthcare providers and their respective patients about the NAPA membership and its benefits
- ✓ ASC business cards with ASC Helpline contact information (1-866-787-4050 and info@asthma.ca) to be given to patients with chronic respiratory disease and their caregivers

A variety of dissemination strategies were applied to distribute the described above promotional materials to local healthcare professionals and tailored to the type of promotional materials (e.g. letter, package or resource kit) as well as perceived needs of the exact healthcare setting. **The promotional letter** was used as an initial contact with local physicians and distributed mostly by fax. An initial contact by fax was considered to be an effective strategy for contacting physician offices because the majority of physicians rely heavily on fax transmissions for a great deal of their daily communication (e.g. receiving lab results, sending referrals, renewing prescriptions, etc.). Therefore, their office staff would be comfortable receiving the information using this communication method. In total, the promotional letter was faxed to the **355** family physicians on the list with 88% of faxes (314) being successfully received.

The ASC promotional package was mainly distributed by mail to groups of healthcare providers using Canada Post. The ASC promotional letter was revised for respirologists practicing in the Hamilton area to serve as a reminder about the ASC educational services and materials. As many respirologists are fairly aware about ASC services, the letter aimed to provide them with updates about new programs available through the ASC (e.g. the Asthma Patient Bill of Rights and NAPA). The revised letter was sent out as part of the standard promotional package to 27 respirologists.

The ASC resource kit was distributed to the local healthcare providers applying various strategies such as: distribution by Canada Post, in-person delivery by a member of the ASC project team, and distribution using contacts/partnerships established by the ASC during the implementation of the PLATE programme. The last

method was also used as an opportunity to further promote the ASC services and materials. For a complete distribution list by type of practice and distribution strategy please see **Table 1** in *Appendix 24*. The exact distribution strategies were chosen based on the type of physician practice, its size, perceived needs, and its role in chronic disease management and prevention as follows:

- **Mailing through Canada Post**

Family physicians that were not associated with the Hamilton FHT, Hamilton FHG, Community Health Centres, and Walk-in Clinics, and working in independent practice received the ASC resource kit by mail. Forty two (42) resource kits were mailed out. It was thought that delivery in person would be time and resource consuming and less efficient taking into consideration the size of the practices. The use of this distribution strategy allowed the ASC to connect efficiently with as many physicians as possible.

The 3 Hamilton CHCs also received the information by mailing through Canada Post. The two Community Health Centres (North Hamilton CHC and Urban Core CHC) received the ASC resource kit, along with the French speaking Health Centre (Centre de Santé Communautaire a Hamilton), which obtained the kit with French educational material and resources. Taking into consideration the multidisciplinary nature of the CHCs, it was thought that the resource kit should be addressed to the Centre rather than sent out to individual physicians.

Additionally, the ASC resources kits were mailed to the identified departments within the community hospitals named previously. Each of the hospitals received kits addressed to the Emergency Department, Out Patient Clinics, Out Patient Pharmacies, Pulmonary Function Labs, Asthma Clinics, and the Urgent Care Centre (please see the distribution **Table 1** in *Appendix 24* for details).

The ASC resource kits were also distributed by mail to the following healthcare resources: the Hamilton Public Health Department; the Hamilton and area Community Care Access Centre (CCAC); the Hamilton branch of Workplace Safety and Insurance Board (WSIB); and the University and College Student Health Centres. In total, **5** packages were sent out to the Student Health Centres: 2 to McMaster Campus Student Health Services; 2 to Mohawk Student Health Services; and 1 to Redeemer University College Student Health Services.

As well, the ASC resource kit was mailed to the identified Pediatric Clinics including: McMaster University Medical Centre (Department of Pediatrics); McMaster Children's Hospital (Chedoke Site); St Joseph's Healthcare; and the McMaster Children's Hospital. It was thought that with childhood asthma on the rise, pediatricians could benefit from receiving more detailed information about the ASC educational materials and resources, specifically the Asthma Kids booklet and two educational websites (www.asthmakids.ca for children and www.airsquare.ca for teenagers). The resource packages were also mailed to 5 independently practicing pediatricians in the community.

The ASC resource kit that was sent out to community pharmacies included a revised promotional letter (see *Appendix 20*) highlighting the ASC materials that are more relevant to pharmacists and their customers. In total, 117 pharmacies received the ASC resource kit. The distribution strategies varied because of the previous connections established by the ASC during the implementation of the PLATE programme. The majority of pharmacies (94) within the community received the resource kit by mail including: pharmacy chain stores (e.g.

Shoppers Drug Mart, etc.); independently owned pharmacies; and retail store pharmacies (e.g. Wal-Mart, Zellers, Fortinos, and Sobeys).

- **Distributing in Person**

Personal distribution was used in situations when the ASC had previously established connections (for example, during the PLATE programme implementation). One such partnership was established with Dell Pharmacy, as they hosted three of the initial Airways Clinics conducted in Hamilton. Therefore, during the implementation of the community outreach plan, the Dell Pharmacy Head Office was contacted to arrange for the ASC project staff to deliver 17 ASC resource kits for distribution across their organization.

Local representatives of the pharmaceutical companies, namely AstraZeneca, GlaxoSmithKline, and Pfizer each received a sample of the ASC resource kit through in-person meetings and discussions regarding the PLATE programme and its community awareness component. The representatives were asked to liaise with physicians working in their catchment areas to provide them with information about the ASC materials and resources.

In some cases, in person distribution was used as an opportunity to promote educational services and materials offered by the ASC; therefore, activities in Phase II and III were combined and are described below in detail (see “Phase III - Promotion of the ASC services and resources to local healthcare providers” on page 76).

- **Distributing by ASC Contacts**

The ASC actively used contacts established during the implementation of the PLATE projects to further disseminate its materials and provide information about services available through the ASC to healthcare providers as well as their patients with chronic respiratory disease.

As the potential impact of the ASC resources and educational support for the management of chronic respiratory disease fits with the mandate of the Hamilton FHT, they were approached to help in distribution of the ASC resource kits. A meeting including the ASC project staff, Hamilton FHT Chronic Disease Manager (Kathi Carroll), and the Hamilton FHT facilitators, was held where the ASC project staff presented the PLATE community outreach plan, an overview of the ASC services, and the ASC resource kit. The FHT facilitators’ role was to provide the information about available services and support for chronic respiratory disease management to the FHT physicians. Packages were delivered by a facilitator to the physicians along with the invitation to access the ASC resources as part of their educational and chronic disease management activities.

Furthermore, a meeting was held with the Hamilton FHG (Lead Physician - Dr. Packer) to provide the group with information about the PLATE programme including the PLATE community outreach plan, along with a description of the ASC resource kit and educational resources available through the ASC. The Lead Physician received 17 resource kits to be distributed among FHG physicians. Distribution of the packages was organized during an education meeting attended by the FHG physicians. Due to agenda issues, a representative of the ASC project team was not able to attend the educational meeting.

The ASC promotional package was also delivered to 7 allergists on the list by Dr. Wasserman, who is involved with the ASC on other initiatives, on behalf of the ASC.

5.1.3 Phase III – Promotion of the ASC Services and Resources to Local Healthcare Providers

Promotional activities to raise awareness about the ASC services among local healthcare providers were undertaken by the ASC during the implementation of the community outreach plan. These were classified in two main categories: promotion of the ASC services through professional organizations (e.g. Colleges) and media working in the healthcare field; and promotion of the ASC services to local healthcare providers by a means of personal communication. In some cases, the latter was combined with the Phase II activities as mentioned previously.

- **Promotion of the ASC Services to Local Healthcare Providers**

Independently practising physician offices quite often do not receive as much attention as group practices for healthcare promotion and education. To address this, an in-person information delivery strategy about the ASC educational materials, as well as promotion of the ASC services to physicians and their patients was applied to these practices. The ASC project staff chose physician offices in the Ancaster and Dundas areas as they represent two smaller communities with close proximity to each other, allowing time and resource efficiency during outreach activities to these offices. During visits to each physician office, an introduction of the ASC services and resources was provided, ASC educational materials were distributed and promoted, and any questions arising from the visit were answered. In total, 29 physician offices were visited and 29 resource kits were distributed. Furthermore, community pharmacies located in close proximity to these offices (6) were visited to provide pharmacists with appropriate information about educational materials offered by the ASC.

Similar to independent/solo physician practices, walk-in clinics are also less targeted for health promotion and outreach activities. This is despite the fact that these healthcare points of care are usually extremely busy and often see patients with chronic respiratory disease in times of flare-ups. For that reason, special attention was given to these clinics. Seven walk-in clinics were visited in-person to ensure that they have adequate information and resources to provide respiratory health education to their clients. In total, 18 resource kits were delivered to the walk-in clinics located in the chosen community. The number of packages was determined by clinic receptionists based on the number of physicians working at a particular clinic.

Additionally, four Medical Practice Groups were visited. These clinics are also extremely busy and benefited from the opportunity to discuss the ASC services and receive immediate responses to questions the physicians had about materials and resources offered by the ASC. These Medical Practice Groups use a multidisciplinary team approach to chronic disease management and the ASC project staff had an opportunity to make the ASC resources available to allied healthcare professionals as well (e.g. nurse practitioners, registered nurses, etc.). In total, 20 resource kits were delivered.

- **Promotion of the ASC Services through Professional Organizations (e.g. Colleges) and Media Working in the Healthcare Field**

In order to inform a broader group of healthcare professionals about the PLATE initiative, in particular the community outreach component as well as the ASC resources available to healthcare professionals and their patients, the ASC project staff sought opportunities to increase awareness about the ASC by connecting with the professional Colleges. To achieve this, **the Ontario College of Family Physicians (OCFP)** and **the Ontario**

College of Pharmacists (OCP) were contacted and provided with information about the PLATE programme to explore opportunities to publish this information in their respective communications with their members.

As a result, the OCFP published information about the ASC services in the “Letter to the Members” in June 2009 (*Appendix 25*). As well, an article describing the ASC and the PLATE Programme was published in the September/October edition of the “Pharmacy Connection” (*Appendix 26*) as well as posted on the OCP website (www.ocpinfo.com).

Contact was made with the Medical Post to explore opportunities to advertise in their publication(s). Due to high demand and lack of space available, the ASC was unable to publish information about its services during the implementation of the PLATE outreach component.

5.2 Outreach to Local Community Agencies

The same phased approach as previously described was applied during implementation of outreach activities targeting community organizations located in the Hamilton area.

5.2.1 Phase I - Identification of Community Resources and Agencies within the City of Hamilton

The ASC project staff identified local community resources in Hamilton by conducting an extensive environmental scan. Community resources/organizations were identified to provide current information about the ASC educational materials and services to users of these resources. This allowed for targeting a broader audience of community residents outside of the traditional channels of the healthcare system, increasing outreach scope and targeting community groups that are quite often not included in standard outreach activities. Using the online search engines, the following types of **local community organizations** located within the City of Hamilton have been identified:

- **Schools**

Asthma is a common childhood and young adult condition. Therefore, schools need to be aware and able to provide information and access to educational materials and resources to affected individuals and their families. Increasing awareness about materials and services available through the ASC with school personnel could lead to better teachers’ knowledge and understanding of proper asthma management and increase their comfort level of dealing with children suffering from asthma in school environments. Using the Google internet search engine, the public and separate school websites were found and used to compile a list of elementary and secondary schools within the City of Hamilton. Additionally, the Hamilton Wentworth District School Board and the Hamilton Wentworth Catholic District School Board websites (www.hwdsb.on.ca and www.hwcdsb.ca respectively) were accessed to complete a contact list of 170 schools. Finally, an additional Google search yielded 5 private schools within the region. In total, 175 schools were identified.

- **Community Centres**

The Parks and Recreation Department page from the City of Hamilton website (www.myhamilton.ca) lists 14 local community centres, including recreation facilities, swimming pools, and skating arenas. Community centres are visited regularly by a large number of community residents; therefore, there is an opportunity to

increase visitor awareness of chronic respiratory disease by informing these centres about the ASC services. In addition, program staff at these centres with exposure to individuals with chronic respiratory conditions would benefit from this information and help educate their clients. In turn, greater staff awareness of the ASC resources may lead to referral of community residents to available ASC services for further information and education.

- **Hamilton YMCA**

The YMCA is a community recreational organization that provides aquatic and recreation programs for members of all ages. The YMCA centres are widely attended by the general public and community residents and that fact requires inclusion of these recreational facilities in community outreach. Additionally, the YMCA offers summer day camps to children living in the nearby communities. Two (2) YMCA locations were identified in Hamilton by accessing the YMCA main website www.ymcahb.on.ca. The YMCA website also lists 21 locations for school age programs that provide before and after school daycare at local elementary schools across Hamilton and the neighbouring communities of Ancaster, Dundas, and Stoney Creek.

- **Libraries**

Libraries represent another point of contact with a broader group of community residents as well as the general public. Libraries serve as information resources for those seeking appropriate information on a variety of topics and are especially important for those residents who may not have readily available home internet access. Ensuring availability of information regarding ASC services is essential for those who are seeking further information regarding respiratory conditions. Further, libraries often have public display areas where ASC contact information could be posted for the general public to access. Fourteen (14) local libraries were identified through the City of Hamilton website (www.myhamilton.ca).

- **Daycares**

With the increasing prevalence of asthma amongst preschool children,³³ daycares represent a great opportunity for outreach to parents of younger children as well as educating daycare staff about the importance of proper attention to children with asthma and associated allergies. Frequently, staff members lack sufficient knowledge about asthma and its management; therefore, providing educational materials will increase the level of confidence daycare personnel will have in assisting children with asthma in managing their condition. It will also inform the staff of where they can obtain additional resources and information that can be useful for the parents of affected children. An internet search for Hamilton daycares identified approximately 50 community-based daycare facilities. Most of them were listed on the Coordinated Access for Child Care website (www.cafcc.on.ca). This list was more challenging to collect because there are many private daycares that are not listed.

- **Retirement Residences**

Using a Google search engine, 14 retirement residences were identified within the City of Hamilton to be included in the community outreach. Many seniors have chronic lung conditions and would benefit from having onsite access to educational information and materials.

- **Minor Sports Associations**

A fairly large percentage of children and young people are involved in organized sport and some of them may have exercise induced asthma. For that reason, minor sport associations were included in the community outreach to provide them with information and resources for use by both staff members and participants. Six (6) local minor sport associations were chosen randomly as targets for the community outreach. Contact was made with the Presidents of Ancaster Minor Hockey and Youth Soccer Leagues, Dundas Minor Hockey and Youth Soccer Leagues, and Hamilton Minor Hockey and Youth Soccer Leagues.

- **Local Businesses**

The ASC was approached by ArcelorMittal Dofasco,³⁴ a local steel manufacturing company, and invited to participate in an employee Health Fair. ArcelorMittal Dofasco is one of the largest employers within the City of Hamilton with approximately 5,000 employees. Considering the company's size and its role in the City of Hamilton, this activity was added to the community outreach plan to widen the scope of outreach and reach out to more community members. According to the Health Fair organizing Committee, approximately 100 employees visit the Health Fair each year.

5.2.2 Phase II – Provision of Information about the ASC Educational Materials and Services to Local Community Organizations

Similar methods used to contact the community healthcare providers were used to contact community organizations. The ASC promotional letter, the ASC promotional package, and the ASC resource kit were used to provide local community organizations with information about the ASC educational materials and services. The promotional letter was modified based on the needs of the recipient and the nature of services provided by a particular community agency (see *Appendix 21*). The letter was included in the ASC promotional packages as an introduction to the ASC and its services. The ASC promotional package for community agencies included the promotional letter and the ASC business card with contact information for further inquiries. The ASC resource kit was not modified and contained the promotional letter to community partners along with the same educational materials as provided to community healthcare providers/services.

Similar distribution strategies were utilized to disseminate promotional materials to local community organizations (see Table 2 in *Appendix 24* for details). The ASC promotional letter was primarily used for outreach to local minor sports associations and distributed via e-mail. Presidents of six local minor community sports associations were selected to receive an email with information about the ASC educational materials and resources.

In addition, a special promotional letter was developed for schools and addressed separately to school principals and Parent Advisory Councils (see *Appendix 22 and Appendix 23*). Both school personnel and parents could benefit from the information presented in the promotional letter. The letter, as part of the ASC promotional package, was distributed by mail using Canada Post to 350 recipients at 175 schools located in the community, specifically: 146 elementary schools; 24 secondary schools; and 5 private schools. Separate letters to school principals and Parent Advisory Councils were prepared and sent out to ensure both the school personnel and parents had the opportunity to access educational materials and resources. The letter to Parent Advisory Councils was designed to increase awareness of proper asthma management and facilitate a discussion about

the ASC services at meetings of the Parent Advisory Councils, reaching out to parents or guardians of students with asthma.

Two main strategies were used to distribute the ASC resource kit such as: mailing through Canada Post and personal distribution by ASC contacts. The latter was combined with promotional activities and is described below in detail (see “Phase III - Promotion of the ASC services and resources to local community organizations”). The ASC resource kit was sent out by mail to the following community organizations:

- 1) Community libraries (14 ASC resource kits)
- 2) Local daycares (12 local daycares were randomly selected to receive the ASC resource kit by mail)
- 3) Retirement Residences (14 ASC resource kits) (the kits were addressed to their Health Offices).

5.2.3 Phase III – Promotion of the ASC Services and Resources to Local Community Organizations

Promotional activities focused on providing community organizations, which are usually not included as targets for educational activities, with detailed information about the ASC educational materials and services that could be used by their clients and community members. The City of Hamilton Parks and Recreation Department was contacted to distribute the ASC resource kits to Community Centres. The ASC project staff met with the Program Manager of the Parks and Recreation Department to discuss the PLATE community outreach component and present the ASC educational materials that could be beneficial to community members attending various programs at Community Centres. Fourteen kits (14) were provided to Community Centres by the Parks and Recreation Department.

In the same way, the Hamilton YMCA was approached and asked to distribute the ASC resource kits to their facilities. The ASC project staff met with the Director of Programs (Maria Timpener) to discuss the ASC educational services which could be beneficial for people attending YMCA programs. Six ASC resource kits (6) were given to the YMCA main office to provide to YMCA facilities. The YMCA staff members who were responsible for the summer camps and school programs were also made aware of the ASC services and resources during their staff meetings.

Schools were targeted for an additional promotion to increase teachers' awareness of childhood asthma and prepare them to deal with increasing childhood asthma exacerbations during the September Asthma Peak. Links have been established with the Public Health School Asthma Project³⁵ (the Ontario Asthma Plan of Action) to promote the ASC resources and services to schools participating in the project in the City of Hamilton. The Project Coordinator for the Public Health School Asthma Project (Elizabeth Conti) has previously worked with the ASC on including the ASC materials and contact information in resource packages for schools. The ASC project staff met with the Project Coordinator to update her on the available ASC services and educational materials. The ASC educational materials for school packages were provided and the Public Health School Asthma Project Coordinator distributed the ASC resource kits to 48 Ontario Early Years Centres³⁶ as further outreach to parents and caregivers of children with asthma.

Additionally, the ASC materials specific to the September Asthma Peak were included in the September 2009 Public Health/Healthy Kids newsletters (*Appendix 27*) that are distributed to all City of Hamilton Schools. Once

published, the newsletters are archived at the www.hamilton.ca/teacher website, which is regularly accessed by school personnel for additional information and resource information. Further, an article about cold air and asthma was published in the City Of Hamilton “Child Care Connection” Newsletter (Winter 2010 edition),³⁷ which is distributed to approximately 3500 childcare providers in the Hamilton community (*Appendix 28*).

Representatives of the ASC project staff attended the **ArcelorMittal Dofasco Employee Health Fair**. ASC Certified Asthma Educators set up an information booth and provided education, information, and printed educational materials about asthma, associated allergies, and COPD to 176 booth visitors over the two days.

5.3 Outreach to Community Residents and the General Public

According to the PLATE outreach/awareness plan, outreach activities were further expanded to target community members at large and the general public. The ASC considered various promotional strategies for direct outreach to community members and the general public such as: using local media (e.g. local TV channels and radio stations, community newspapers), mass mailing through Canada Post, and mass distribution by e-mail blast through local internet providers. To implement the latter two, the ASC planned to prepare a promotional flyer/card to be sent out by mail (Canada Post) in the chosen catchment area (one or two postal codes) and/or be disseminated via e-mail using client databases of the local Internet providers (e.g. Bell, Cogeco, Mountain Cable, etc.). Many consumers are comfortable using their email and access it on a regular basis so this mechanism is an opportunity to inform them about ASC services. Contact by email and a subsequent phone call follow-up were made with Sympatico, one of the largest internet providers within the community (with approximately 7400 English and 800 French speaking users). The cost of sending the e-mail blasts was approximately \$150.00/1000 email addresses. Furthermore, contact was made with other local internet providers (Mountain Cable and Cogeco), which did not have such a distribution opportunity. As an additional option to reach the community residents, the ASC contacted Canada Post to enquire about the option of mailing a promotional flyer/card to households within the City of Hamilton and the immediate communities that were included in the outreach. The cost for the Canada Post mailing was quoted at \$.05-\$.10 per flyer delivered.

Although targeting a substantial number of community residents, both distribution methods (mass mail and e-mail blast) would be costly to implement in order to provide flyers to enough of the residential population or send e-mail blast to all existing e-mail users, and target only a limited number of people living in the Hamilton area (e.g. the existing database of the e-mail users). Further, it was felt that the email blast may be ineffective as it would be considered spam and discarded. The mass mailing was also not carried out as the flyer may be seen as “junk mail”, which community residents simply recycle without even looking at the information.

As a result, a decision was made to focus on other outreach strategies during this demonstration project to reach members of the local community. Local mass media was investigated and contact was made with the Canadian Traffic Network (CTN) to explore an opportunity to use broadcasting of live radio ads with traffic reports. Using radio provided a greater opportunity to reach a wider audience and with repetition, as the tags were broadcasted 300 times over a 4 week period. As an alternative to mass mailing, newspaper ads were also used for outreach to the local community.

According to the decision made, the ASC project staff identified potential opportunities with the local media resources and approached the following media companies with a request to publish and/or communicate messages prepared by the ASC and promote the ASC services:

- **Community Newspapers**

The local community papers tend to be read by a large proportion of local community members. With a high community penetration, this medium provides a good opportunity to educate the local community regarding ASC services. Using a Google internet search, the following community newspapers were identified: The Hamilton Spectator (www.thespec.com), Ancaster News (www.ancasternews.com), Dundas Star (www.dundasstarnews.com), Stoney Creek News (www.stoneycreeknews.com), and the Mountain News (www.hamiltonmountainnews.com). Community residents receive the latter 4 community papers on a weekly basis, at no cost while The Hamilton Spectator is the community subscription paper. According to the Media Marketing Guide,³⁸ it is estimated that around 218,700 adults receive the Hamilton Spectator daily.

The ASC project staff prepared an advertisement containing information about the ASC Asthma and Allergy Friendly Certification program³⁹ as well as contact information for other services available through the ASC (see *Appendix 29* for a sample ad). Information on the Asthma and Allergy Friendly Certification program can help promote awareness about the role of proper indoor environmental control in overall asthma/allergy management and its importance in maintaining a healthy lifestyle overall, allowing healthy lifestyle choices. Further, the ad was designed to attract people's attention and prompt them to look for other educational services offered by the ASC. The ad was run in the Hamilton Spectator and appeared in all community newspapers in June 2009. In the community newspapers, it was published in the spotlight on Seniors/Mature Living Section as that section has a high readership.

- **Radio Stations**

The ASC looked for innovative advertising opportunities to reach the community residents at large and the general public. The ASC partnered with the Canadian Traffic Network (CTN)⁴⁰ which provides radio listeners with live traffic reports and can include an information/advertising tag at the end of local traffic reports in major markets across Canada, including the Hamilton community local radio stations. It was felt to be a unique opportunity to reach a large number of individuals as there are a substantial number of drivers/passengers that listen to daily traffic reports during their commutes. The idea of having the tag being read as opposed to a recorded message held additional appeal. Furthermore, the CTN offers a discounted rate for charity organizations that allowed for the purchase of additional time. Discussions between the CTN and the ASC project staff involved targeting key points while communicating main messages such as special attention to childhood asthma during the September Asthma Peak, indicators of uncontrolled asthma and how to learn about proper asthma control, opportunities available through the ASC and National Asthma Patient Alliance (NAPA). Three different messages were prepared (see *Appendix 30*) and ran commencing August 31 through September 27th, 2009.

The CTN holds a contract with all the commercial AM & FM stations in Hamilton and they determine the frequency and placement of the tags for the local traffic reports. On average, they run on weekdays from approximately 6 a.m. to 9 a.m. and from 3:30 p.m. to 6:30 p.m. The contract called for a minimum of 200 spots or 50 per week during the 4 weeks, and overall 301 tags were provided. The radio stations that were included were: CHML, CHAM, CKOC, CKLH, and CJXY. The possible reach for the radio stations was over half a million households.

- **TV Channels**

The ASC project staff approached local TV channels with a request to prepare and run a Public Service Announcement (PSA). Despite multiple attempts and follow-ups, no interest was expressed from the local TV station to work on developing these announcements.

5.4 Evaluation of the Implementation of the PLATE Community Outreach Component

The ASC designed and applied several methods to evaluate the impact of outreach activities and their effectiveness.

First, the ASC evaluated the usefulness of its materials and resources by conducting a follow-up survey of local physicians. The ASC project staff developed a follow-up survey in the format of a fax letter (*Appendix 31*) to be sent out to physicians who received the ASC promotional materials. The follow-up survey contained five questions related to the value of the educational materials received and a request to complete the survey and fax it back to the ASC office. The ASC project staff randomly selected physicians from the list and sent the follow-up survey by fax to 51 of them. Although the response rate was very low (10%), all respondents indicated the high value and usefulness of the educational materials provided and willingness to use them in their practices.

Second, the ASC staff monitored the number of requests for educational materials that were received from the City of Hamilton and surrounding areas (Ancaster, Stoney Creek and Dundas) since the beginning of the PLATE community outreach activities. Specifically, these statistics were collected for the time period prior to the PLATE community outreach project – January through April 2009, and then from May through December 2009, the period when the PLATE outreach activities were conducted. The number of requests after the start of the outreach project was compared to the number of educational inquiries received before the project implementation. Specifically, since May 2009, following implementation of the PLATE community outreach component, the ASC received 13 requests for educational resources while no requests were received from the Hamilton area and surrounding communities prior to the implementation of the PLATE programme. Although the actual number of requests still remains low, it shows a moderate increase in the number of enquiries for educational materials coming from the targeted area. Additionally, all 13 requests came from unique individuals and/or community organizations suggesting that these requests were from new users of the ASC services. Moreover, some requests came from community organizations that were specifically targeted with the outreach activities. Of note, receiving requests from community organizations is not typical for the ASC as it receives most requests from healthcare providers and healthcare institutions. Importantly, some requests were received from community pharmacies reflecting their interest in receiving educational support from the ASC and the value of providing the ASC educational materials to their clients.

Third, the ASC staff also analyzed phone inquiries received at the ASC Helpline from the chosen community during the listed time frames (January-April 2009 and May-December 2009). An increase in inquiries could indirectly demonstrate the successfulness of the conducted outreach activities. Email inquiries were not included in the analysis as they are problematic to track due to the absence of complete contact information (e.g. there is often no address provided). It does not appear that there was any significant increase in phone calls after the implementation of the PLATE community outreach component.

Finally, the ASC checked the number of hits on the website pages to which the links were promoted during the radio advertising campaigns that took place in September 2009. Specifically, the ASC staff monitored the number of total and unique hits to the main website (www.asthma.ca), the National Asthma Patient Alliance (NAPA) webpage (www.asthma.ca/napa), and the website dedicated to children and their parents (www.asthmakids.ca). One of the radio ad messages was related to promotion of the National Asthma Patient Alliance (NAPA), a membership group of the ASC;⁴¹ therefore it was thought that an increase in the number of unique visits to the NAPA webpage could ultimately demonstrate the effectiveness of this media strategy. Analysis of the number of unique visitors to the NAPA webpage has shown that there was a marked increase (up to 15-30%) in the number of unique visitors during the time when the radio ads were running (August-September 2009) compared to the same time last year. As the ASC had not conducted any other campaigns to promote NAPA during this period, this increase is likely due in part to the success of the outreach advertising campaign (the radio ads), with a corresponding increase from community members to visit the NAPA webpage.

As a significant effort was made to reach both parents and the school communities, the ASC staff measured the number of visits to www.asthmakids.ca, a website solely designed to educate children with asthma and their parents. Monitoring the number of visits to the website showed an increase of unique visits over the months following school principal and parent advisory council directed community outreach activities. This notable increase could be a reflection of better recognition of the availability of the ASC websites and resources with people dealing with childhood asthma, including residents of the Hamilton area.

In conclusion, the increase in educational enquiries for the ASC materials demonstrates the effectiveness of the conducted outreach activities. As these enquiries came from the organizations located in the outreach targeted area, it is very likely that this increase is related to the implementation of the PLATE community outreach project. Further, the sources of requests received are unique for the ASC and it is anticipated that these types of requests will continue to be received.

Another measure of success was the increase of enquiries about NAPA detected at the NAPA website at the time when promotional activities, in particular radio ads, were conducted. This increase could be attributed to the radio advertising campaigns as no other promotional activities were implemented at the same time. The increasing access of materials presented on the websites demonstrates better public awareness about the ASC resources. The increased number of visitors to asthmakids.ca is also reflective of the activities that were undertaken in the Hamilton area. The ASC implemented other initiatives related to the September Asthma Peak which could also partially explain the greater interest shown, reflected by the number of unique visitors.

Although we witnessed a low response rate to the follow-up survey conducted with the local physicians, positive feedback obtained from the survey showed their appreciation for materials and information provided. The low response rate could not be automatically related to the questionable success of the project but rather to the time constraints physicians have in their daily practices.

There were certain limitations in applying the above methods to evaluate the PLATE community outreach component, including:

- 1) Time allocated to analyze and demonstrate results

Main outreach activities were delivered in the months of June-October 2009. Usually, it takes time for people to digest provided information and incorporate it in their current practices. The ASC will continue monitoring the number of enquiries for educational materials as well as phone requests originating from the Hamilton area. It is thought that there may not have been enough elapsed time to show a true reflection of the promotional activities organized by the ASC. Therefore, the ASC anticipates a further increase in enquiries for educational materials from clients residing in the targeted community.

- 2) Limited ability to evaluate the origin of website visitors

The observed increase in the unique visits to the websites could not be analyzed by exact geographical location of the visitor. The existing application at the ASC allows detecting the source only by the country and/or provinces within Canada. For that reason, it was not feasible to analyze sub-provincial regional distribution of website visitors in detail.

- 3) Administering the follow-up survey to family physicians only

Due to limited resources, the follow-up survey was administered only to the local family physicians. Local pharmacists were excluded from follow-up, preventing assessment of impact of the materials and information provided on their patient education practices. Other healthcare providers (e.g. nurse practitioners, registered nurses, etc.) were also not included in the follow-up survey. Those providers might have been in a better position to comment on the distributed materials, particularly as they are often more involved in direct patient education and responsible for providing clients with proper information, including referrals to existing resources.

5.5 Outreach to Healthcare Providers and Community Organizations across Canada

The ASC applied the experience gained during the implementation of the PLATE outreach plan in the City of Hamilton to initiate outreach to other communities across Canada. The purpose of this outreach was to inform healthcare providers and community partners about educational materials available from the ASC as well as offer its services to people living in underserved areas (e.g. North Bay). The ASC currently uses the promotional materials developed for the PLATE outreach component (the ASC promotional letter, the ASC promotional package, and the ASC resource kit) to increase awareness about the ASC services among healthcare providers, healthcare organizations, and community agencies, a further success of the PLATE community outreach component.

The ASC conducted an outreach project in the City of North Bay, Ontario offering its services and materials to people with asthma and associated allergies who are living in underserved areas. The same strategies and distribution methods were employed to disseminate information and educational materials. The ASC promotional and resource packages were distributed in person and by mail to community healthcare providers including physicians' offices, local pharmacies (chain - Pharmasave, Guardian; retail - Zellers, and independently owned), allergists, the medical office at the military base (CFB North Bay), walk-in clinics, Student Health Centres (e.g. Cannadore College), and the Children's Treatment Centre (One Kid's Place). They were also

delivered to community organizations such as sports outlets and arenas. Additionally, both the English and French Catholic School Boards were informed about educational services and materials available through the ASC.

The ASC is continuing to use the protocols, methods and lessons learned from the implementation of the PLATE community outreach component in Hamilton and North Bay. The ASC is using these activities to inform the public about its services as well as increase public awareness about proper management of asthma and associated allergies.

5.6 Lessons Learned during the Implementation of the PLATE Community Outreach Component

5.6.1 What Worked Well?

Several strategies and methods were highly successful during implementation of the PLATE community outreach component, as follows:

Phase I - Identification of local healthcare providers, resources, and community organizations

- **Using Internet Search Engines**

The Google search engine proved to be an effective means of performing the environmental scan to identify healthcare providers, healthcare resources and community agencies within the City of Hamilton and the neighbouring communities. It enabled the ASC project staff to create a comprehensive listing of community healthcare services and local healthcare providers as well as compiling information about community services, such as walk-in clinics and Community Health Centres. In many cases, Google provided links to other information sources, such as the Ontario College of Physicians and Surgeons that provided complete information.

Phase II - Provision of information about the ASC educational materials and services to local healthcare providers, healthcare resources, and community organizations

- **Using the ASC Promotional Letter as a Point of Introduction**

Based on the anecdotal comments received, the ASC informational letter was perceived as a good tool to provide an introduction about the ASC educational materials and services. Many clients appreciated that their organizations were included in the list and provided with the letter.

- **Outreach to Community Organizations**

The finding that many community organizations in the Hamilton area made a first request for ASC materials suggested that these organizations were unaware and therefore underserved previously. The exact needs of these organizations and the population they serve should be considered in the future to properly identify materials suitable for them. They should also be considered for future outreach activities, if appropriate.

- **New and Established Partnerships**

New and established partnerships have proven to be crucial for and effective in disseminating required information and the ASC promotional materials. The existing partnership with the City of Hamilton Public Health School Asthma Project enhanced the distribution of information in an effective manner using existing newsletters and websites that are available to all Hamilton teachers, Ontario Early Years Centres and visitors to the Hamilton Public Health website. As well, the previously established community-based Airways Clinics partnership with Dell Pharmacy helped continue the programme implementation and encouraged the company's participation in the community outreach component. As some of the Airways Clinics were held at Dell Pharmacy locations, the company was keen to provide further resources and educational materials to their pharmacists.

In addition, the contact made with the Hamilton FHT was an effective strategy for the distribution of the ASC educational materials and resource kits. The meeting of the ASC staff, the Hamilton FHT Chronic Disease Manager, and the FHT facilitators reinforced the importance of proper management of chronic respiratory disease as well as provided educational materials and resources to FHT physicians to support them in providing their clients with proper education and resources. Further, outreach activities conducted by the ASC reflected the mandate of the Hamilton FHT regarding chronic disease management.

Moreover, our existing partnership with the Public Health School Asthma Project provided us outreach to teachers and school personnel working at Hamilton schools and supplied them with referrals to necessary resources.

Phase III - Promotion of the ASC services and resources to local healthcare providers and community organizations

- **In-Person Visits**

In-person visits were proven to be effective, allowing the identification of specific needs unique to particular healthcare settings or community organizations. This allowed for the appropriate provision of information and resources. Staff appreciated the ASC effort, both in considering their organization and then calling on them to deliver ASC materials and resources.

- **Partnerships with Professional Colleges**

Establishing partnerships with professional Colleges (the OCFP and OCP) allowed the ASC to inform the broader audience of family physicians and pharmacists about the PLATE programme and services offered by the ASC. All information included in Colleges' correspondence with their members undergoes a rigorous internal approval process and is distributed using their standard communication channels. As a result, the information provided is perceived as being highly credible.

- **High Receptiveness of Community Pharmacists**

Community pharmacists in both outreach locations (Hamilton and North Bay) were supportive of the connection being made and very receptive of materials and information provided. Many of them indicated an interest in staying connected and receiving similar services in the future. Some pharmacists were open to discuss further collaboration and potential joint activities in delivering respiratory health education to their clients and community members (e.g., organizing Airways Clinics).

- **Contacting School Boards**

Connecting with local School Boards is more effective than outreach activities directed at individual schools. Information distributed from the Boards is highly regarded and taken seriously into consideration.

- **Using radio tags as an outreach method to community residents at large**

Based on the evaluation results described above, this method was proven to be effective to communicate with community members. Consideration should be given to the use of this media strategy along with typical Public Service Announcements (PSA).

- **Participating in Health Fairs**

The ASC participation in the ArcelorMittal Dofasco Health Fair allowed personal interaction with a fairly large number of people. Employer-driven Health Fairs represent an effective means of providing information and education in a venue with a guaranteed, defined attendance.

5.6.2 What Challenges/Barriers Were Presented?

Several challenges and barriers were identified during the implementation of the PLATE community outreach component, specifically:

- **Inability to Connect with the Right Person during Visits to Local Physicians' Offices**

Although being beneficial in general, some unsolicited visits to the local physicians' offices, walk-in clinics, and Medical Practice Groups proved to be somewhat challenging. There was not always the appropriate contact made on the first visit. Due to the busy nature of the offices and clinics, the ASC project staff was not able to present information about the PLATE programme directly to healthcare providers and it is unknown whether the promotional materials provided were reviewed by them. In some places, a few visits would be required to ensure the effectiveness of outreach activities.

- **Insufficiency of One Visit to Physicians' Offices**

During the PLATE community outreach activities, most physicians' offices received one visit from the ASC project staff. It has been noted that one visit is sufficient to make an introduction; however, a follow-up visit is required to build a strong connection and provide resources according to the needs of a particular healthcare setting. Alternatively, follow-up calls could be used to establish a sense of collaboration with the offices. Follow-ups can create a better rapport as it takes time to establish a proper relationship.

- **Lack of Promotional Materials that are Suitable for Display**

It has been suggested that some promotional materials should be available in a format that can be easily displayed. Flyers or posters that can be posted in open public areas and attract attention should be developed. It would also be beneficial to have a type of display that would attract attention to show that these were asthma/COPD resources. Additionally, small size promotional/informational materials (e.g. business cards, tear-off sheets, etc.) could also be useful, especially at pharmacy settings where they could be displayed on the counter. The ASC included a business card in all promotional packages; however, the quantity of the cards provided was not sufficient. Similar materials would also be useful in Student Health Centres and sports facilities (e.g. outlets, arenas, pools, etc.).

- **Lack of Interest from Individual Schools**

The ASC did not receive any requests to provide educational materials from schools in the targeted community. This may indicate a lack of interest in materials received directly at school level or a perception at the local school level of a lack of authority to pursue such a programme. Considerations should be given in approaching School Boards before connecting with individual schools.

- **Low Interest Expressed by Some Local Media, Particularly TV Channels**

The ASC had little success in using local TV channels as a means of promotion. The information that was asked to be disseminated appeared to be of low interest for them. Activities that increase the profile of chronic respiratory disease might help overcome this barrier.

- **Insufficient Time and Resources to Build Community Capacity**

Due to time and resource constraints, the ASC did not have an opportunity to work closely with the community and develop partnerships with community organizations, allowing identification of their exact needs and providing support and resources accordingly. The implemented outreach activities simply provided an opportunity to learn about the ASC and understand the relevance of the existing ASC services to refer clients appropriately. The informational outreach conducted had more of an exploratory nature and should be complemented by further initiatives aimed to build community capacity according to the expanded Chronic Care Model.⁴²

- **Limited Collaboration with the Hamilton Public Health Department**

Although the ASC collaborated with the Hamilton Public Health Department in outreach activities to schools through partnership in the Public Health School Asthma Project, participation of public health personnel in other outreach activities was limited. One of the main reasons of limited collaboration was the restricted mandate of Public Health regarding education and prevention of asthma and other chronic respiratory diseases. As a result, educational information about asthma and COPD is yet not available at the Hamilton Public Health website under “Topics A to Z - Public Health & Social Services.”⁴³

5.7 Conclusions and Recommendations

Regarding the implementation of the PLATE community outreach component, the following **conclusions** can be made based on the experiences gained during conducting outreach activities in the cities of Hamilton and North Bay:

- There is a need to inform local community organizations and healthcare providers about the ASC services available for them and their clients in regards to proper disease management of chronic respiratory disease.
- The ASC promotional materials, in particular the ASC promotional letter distributed by fax and mail, are considered a good way to provide general information about services available through the ASC. Follow-ups, either in person or over the phone, are important and should be conducted in order to establish a better rapport and identify the exact needs of particular organizations.
- New and established partnerships play a crucial role in implementing outreach activities and help deliver them according to the exact needs of particular organizations. Thus, the ASC partnerships with the Hamilton FHT and the Hamilton Public Health Department have proven to be effective; however, the latter was somewhat limited by the existing Public Health mandate.
- Community organizations and educational institutions (e.g. Colleges, Universities) should be included as a target for promotional/outreach activities as they typically receive less attention than healthcare providers and healthcare settings.
- Connecting with Professional Colleges has proven to be an effective way of disseminating information to physicians and pharmacists province-wide by using a credible source.
- Based on the anecdotal comments received, community pharmacists appeared to be highly satisfied with the services and information provided and expressed an interest to continue collaborations by receiving the ASC educational materials in the future as well as developing new activities (e.g. organizing Airways Clinics, establishing information booths, etc.).
- School Boards should be considered a first point of contact for school outreach. The partnership with the Public Health School Asthma Project also helped disseminate information to school personnel in the City of Hamilton.
- Innovative outreach methods, such as radio tags attached to traffic reports, should be given consideration along with typical PSAs while developing promotional activities to community members at large.
- The ASC faced a low interest from some local media particularly TV channels in disseminating necessary messages. It was commented that this was partially due to the low profile of chronic respiratory disease and absence of any “burning” stories that could potentially attract the attention of a large audience.

- Display materials that can attract people's attention are required to reach a larger audience. Flyers or posters that can be posted in open public areas should be developed as well as small size promotional materials (e.g. business cards, tear-off sheets, etc.) to be displayed at points of contact, specifically pharmacies.
- Building community capacity was not included in the scope of the PLATE demonstration project; however, it should be taken into consideration while designing future community-based initiatives.

Summarizing its experiences in implementing the PLATE community outreach plan and taking into consideration lessons learned, the ASC would like to put forward the following **key recommendations**:

1. Asthma and other chronic respiratory diseases (e.g. COPD) should be considered for the Public Health mandate, especially when it comes to education about their early detection and prevention. This measure will also lead to a potential increase in the profile of chronic respiratory disease in the eyes of the general public and the media.
2. Consideration should be given to the development of a community outreach model that can be used by various disease organizations to promote their services and resources. The role of public health nurses should be identified and partnerships between them and disease organizations should be explored and specified to ensure proper collaboration and nurture relationships. Outreach to community organizations should be included in the model.
3. Promotional materials on early signs and symptoms of chronic respiratory disease (e.g. posters, flyers, etc.) should be developed to be displayed in various community settings (e.g. community centres, sports facilities, retirement residences, student health centres, etc.) to increase public awareness about chronic respiratory disease and its early detection. These materials can also be used to organize information booths in pharmacies and other venues to allow more of the general public and community residents to be aware of the ASC educational resources and materials, assisting them in proper chronic disease management. In accordance with recommendations of the Global Alliance against Respiratory Diseases (GARD),⁴⁴ similar materials could be developed for healthcare providers or adopted from other organizations (e.g., "Is it asthma" symptom card designed by GARD) to aid healthcare practitioners in making a proper diagnosis.
4. The role of the pharmacists should be explored further and specified in detail in the community outreach model. Considerations should be given to future research and development of a collaborative practice between Public Health and pharmacists as providers of primary care services. Pharmacies could also be used to further promote the ASC services by distributing the ASC business cards that could be placed in medication dispensing packages.
5. Innovative methods of outreach to community residents at large and the general public (e.g. radio tags, etc.) should be taken into account while designing promotional initiatives with involvement of the media.

6 Established Partnerships and Linkages

The PLATE demonstration project established partnerships to assist in the delivery of the program. A Steering Committee was formed that included representation from The Asthma Society of Canada, McMaster University, AllerGen and the Canadian Network for Asthma Care (CNAC). The Steering Committee met initially with a face-to-face meeting to help with the process of implementation for the project. Further to this meeting, correspondence was via email and teleconference. The Steering Committee reviewed and provided comments on all the material that was used in the PLATE project along with the material prepared for the REB submission to McMaster University.

Additionally, both the LHINs (Toronto Central LHIN and Hamilton Niagara Haldimand Brant LHIN) were informed of the demonstration project along with both local Public Health units. Both groups were invited to have representation on the Steering Committee, but declined due to time constraints and demands.

Moreover, the Ontario Medical Association (OMA) and the Ontario College of Family Physicians were informed about the PLATE demonstration programme, its main objectives and components. Both organizations had received the synopsis letter outlining main project activities.

Other partnerships were established or strengthened during the course of the programme:

Hamilton Family Health Team. The ASC established a partnership with the Hamilton FHT for the delivery of the PLATE community outreach component. The partnership was successful as both organizations have a common goal in chronic disease management through education and patient empowerment. The Hamilton FHT was receptive to obtaining and distributing the ASC promotional packages for each of their 132 physician members. Many of these physicians work as part of a multi-disciplinary team providing healthcare so the potential for materials to be received by more than 132 individuals, including allied healthcare providers, was enhanced.

Hamilton Family Health Group. This partnership allowed for the effective distribution and provision of ASC promotional packages to their 17 members during their staff meetings. The ASC established contact with the lead physician in order to provide the resource material in person and to answer any questions that the physician may have with respect to the PLATE community outreach plan and/or the ASC services and materials.

City of Hamilton Public Health/School Asthma Project. The partnership with the City of Hamilton Public Health Department, School Asthma Project already existed from a previous collaboration with the Public School Asthma Coordinator and the School Asthma Project. The Asthma Society of Canada provided educational references in the development of newsletter articles prepared by the Program Coordinator which were distributed to teachers, parents and students. This partnership will carry on as the ASC will continue to provide information, resources and support for the Public Health Department in the future. This partnership is viewed as a great opportunity to assist in the provision of educational material and support to many residents of the community.

Dell Pharmacy. During the initial phase of the “Airways Clinics,” Dell Pharmacy hosted 3 clinics. The Dell Pharmacy chain is a locally owned and operated chain with the aim of providing enhanced patient information and material. Through this partnership, the ASC provided promotional packages to all of their locations, including those outside the community of Hamilton, as they felt the value of the resources was worth the

inclusion of all their locations. Additionally, Dell Pharmacy is promoting Asthma Awareness month in August 2010, as published in their 2010 calendar distributed to their customers through their pharmacy locations. They have requested input in this campaign, along with ongoing support and educational resources from the Asthma Society of Canada for this event. (Pam Lotimer - Sr. Executive/ Marketing Assistant)

7 Conclusions and Recommendations

Chronic respiratory diseases have a profound effect on the health of Canadians and the Canadian healthcare system, because of both the frequency of these diseases and their insidious nature. Disease sufferers, the public, and the healthcare system largely underestimate the costs and impacts of these diseases and poorer than optimal outcomes are common. There are approximately 3 million asthma sufferers in Canada, and while the overwhelming majority have stated that they feel their asthma is well controlled, the reality is that the majority have poorly controlled disease. This suggests that individuals are unaware that either better asthma control is possible or they are unaware what optimal asthma control means. As with asthma, COPD also has a profound effect on the health of Canadians. Smoking is the principal cause of the condition, but smoking rates remain high in a number of segments of the population, raising the risk of COPD. COPD rates are also highly underestimated, with high numbers of COPD sufferers in the population not being diagnosed.

The PLATE program was conceived as a pilot program to improve the level of care, increase early detection of respiratory disease, promote healthy lifestyles, and improve the overall disease control and management in both patients and the general public. To meet these objectives, a program including direct educational interventions with patients such as peak flow testing was developed and implemented, in conjunction with a major educational campaign with specific messaging aimed at the general public, healthcare practitioners, community agencies and patients.

Based on the results of the PLATE program, a number of conclusions can be made regarding respiratory health in the two pilot communities.

The majority of individuals with respiratory conditions had diagnosed asthma; however, based on the information collected during the project, a larger proportion of individuals who identified with undiagnosed respiratory concerns were likely to have undiagnosed COPD. The undiagnosed group was nearly three times the size of the group who had COPD and if even half of these individuals have COPD, this suggests that the proportion of undiagnosed COPD in the population may be even greater than appreciated.

As with other studies, it is apparent that most individuals failed to appreciate the impact of the respiratory disease on their life. While many individuals felt they were effectively managing their condition, based on reported impact on their life and their medication usage patterns, these individuals were not managing their condition effectively. The provision of specific education and recommendations to patients mitigated this impact somewhat, but further and continuing reinforcement of expectations of symptom-free or symptom-minimized disease would continue to encourage better management and alignment of clinical and perceived impact.

The one time education component appears to have had an impact on the utilization of healthcare resources in this group. This reduction in use of expensive medical resources (emergency departments, unscheduled visits), saw a corresponding increase in the use of inexpensive resources (daily pharmacology, regular office visits, pharmacists, action plans). The proportion of participants reporting zero or few asthma attacks increased significantly with decreases in the proportions reporting frequent attacks. There was little change in the perception of asthma control; however, as the clinical measures of control (the number of asthma flares and medication usage) suggests that there is improved control with similar perceptions, it is likely that the patient perceived control and clinical control are becoming more aligned.

During the Airways Clinics, it was apparent that there was a lack of credible and local sources of information of which individuals were aware. Few participants were aware of any information from the major information sources, such as the Lung Association or the Asthma Society, and even fewer would actively seek this information out. The Airways Clinics offered patients, the public, and in some cases some healthcare providers a rich resource of information that they would not have to seek out in the form of information displays and printed information. This information is generally not gathered together in a single place, making it difficult for individuals to collect sufficient information to advance their learning. This is particularly important as many individuals had significant impacts on daily activities but did not discuss these with their physicians. Clinic participants were also receptive to receiving information about healthy lifestyle choices and breathing exercises.

The Airways Clinics and the PLATE program had impact beyond the direct education of the individuals. It encouraged interactions between the patient and their healthcare provider and discussions regarding their respiratory disease. In some cases, the information identified during the Airways Clinics was important enough to trigger further investigations by an attending physician.

The impact of the program was likely beyond that as identified during the program. Overall, only 38% of the encounters at the Airways Clinics participated in the research component; the remaining did not choose or were not eligible to participate. However, essential information was available to the individuals who could not participate as well as their friends and families.

The community outreach program was integral to the success of the PLATE program, but the impact of this is more difficult to measure. Although cost of delivery could be measured and the number of individuals reached estimated, the change in behaviour is difficult to identify. To fully realize any changes in affected individual behaviours, it is necessary to change the behaviour in a number of areas of society at large, including changing the behaviour of healthcare practitioners and community organizations (for example, to decrease respiratory disease due to pollution). To measure impact on these groups, careful measurements of existing measures must be made in the hopes of identifying these changes; for example, noting a variation in the number of requests for information from the general public for the specific regions.

The impact of the community outreach component was assessed directly in the healthcare practitioner target group. This was accomplished using surveys to gauge the interest in these individuals for the information that was provided. Generally, these individuals were very supportive of the initiative and felt that it had a strong value, supporting the continuation of the program.

In any educational initiative, the provision of information is a necessary first step and valuable component of overall disease self-management. However, the ultimate goal is to induce a behaviour change in the target group. To achieve this, the group must be encouraged to implement the new information in their daily activities. This requires repetition and demonstration of the benefit of adopting the new behaviour. One-on-one education sessions delivered by Certified Asthma/Respiratory Educators at the community-based Airways Clinics seems to be appropriate for the provision of asthma, allergy and smoking cessation information and the delivery of peak flow testing as well as education sessions.

Based on the findings and experiences of this program, the Asthma Society of Canada would make **five** main recommendations as follows:

1. Extend the current pilot program within the target areas

There was demonstrated utility in the program as implemented; however, as the time scale was short, the full impact of the program may not have been realized. As with any educational initiative, it is important to reinforce the messages and information to encourage utilization and behaviour changes. Behaviour change is a multi-step process, requiring more than a single intervention. The target populations will include patients (encouraging more effective self-management), physicians and healthcare providers (encouraging better diagnosis, monitoring and support of patients), and the general public (encouraging better knowledge and implementation of changes beneficial of respiratory disease sufferers).

2. Expand the current program to new jurisdictions.

The current pilot was made available in two different cities, but chronic respiratory disease is a national problem. Participants overwhelmingly felt the program was useful and would recommend expansion to other cities and other individuals they knew. The program demonstrated utility for improving the outcomes of individuals with respiratory disease. Although a formal cost benefit analysis is not possible, the modest cost per patient of such a program will likely decrease with wider implementation (the economies of scale).

3. Develop a community outreach model

To continue using the best methods of reaching the target communities in the outreach component, consideration should be given to the development of a community outreach model that can be used by various disease organizations to promote their services and resources to support proper chronic disease management and facilitate behaviour change amongst broader community members. Asthma and other chronic respiratory diseases (e.g. COPD) should be considered to be included in the Public Health mandate, especially focusing on education about their early detection and prevention. The role of public health nurses in delivering outreach activities should be identified and partnerships between Public Health and disease organizations should be explored and specified to ensure proper collaboration and nurture relationships. The role of pharmacists should also be explored further and specified in detail in the community outreach model. Innovative methods of outreach to community residents at large and the general public (e.g. radio tags, online tools, etc.) should be taken into account while designing promotional initiatives with involvement of the media. Further, an examination of the facilitators and barriers to accessing appropriate resources and educational materials related to asthma, allergy and smoking cessation in the community should be performed.

4. Develop awareness materials on chronic respiratory disease

The development of resources for community-based education is integral to improving knowledge levels of asthma more generally and other types of chronic respiratory disease more broadly. Promotional materials on early signs and symptoms of chronic respiratory disease (e.g. posters, flyers, etc.) should be developed to be displayed in various community settings (e.g. community centres, sports facilities, retirement residences, student health centres, etc.) to increase public awareness about chronic respiratory disease and its early detection. These materials can also be used to organize information booths in pharmacies and other venues to allow more of the general public and community residents to be aware of the existing educational resources and materials, assisting them in proper chronic disease management and prevention. Further, the development of asthma and COPD-targeted resources for clients with asthma and COPD who are current smokers would be highly beneficial and represent a valuable resource.

5. Explore and address the issues related to proper chronic disease self-management

The adoption of self-management strategies needs to be examined as a way of increasing overall health-related quality of life. Additional materials are needed to provide support with regard to self-management and bring attention to its role in overall chronic disease management of asthma and COPD. Education about healthy lifestyle changes including physical activity and breathing exercises should be included in overall disease self-management education. Educational materials are also needed to improve knowledge on what proper asthma control means and explain ways on how to achieve it.

In order to explore a “do-know” gap, additional research is needed to examine the process of decision-making of clients who have diagnosed-asthma or COPD, and who are non-compliant with their medication regimen, and/or who do not practice regular self-management strategies.

8 Appendices

Appendix 1. Summary of the Airways Clinics by Location, Community Setting and Timing of the Clinics

Location	Community setting	Dates	Day of the week	Time of the Clinic
Toronto				
Toronto (Downtown)	Novack's Rexall Drugs	September 18-19, 2008	Thursday Friday	10 - 6 10 - 6
Toronto (Dundas St. West)	Rexall Pharmacy	October 30, 2008	Thursday	10 - 6
Toronto (Beaches)	Shoppers Drug Mart	November 27, 2008	Thursday	10 - 5
Toronto (Dufferin Mall)	Wal-Mart Pharmacy	November 13, 2008	Thursday	10 - 6
Toronto (Sherway Gardens)	Wal-Mart	November 17, 2008	Monday	10 - 5
Toronto (North York)	Mel Lastman Community Centre/North York Central Library	September 20, 2008	Saturday	10 - 5
Toronto (North Central)	Yorkdale Mall	September 27-28, 2008	Saturday Sunday	9:30 - 8:30 10 - 6
Hamilton				
Hamilton (East Mountain)	Dell Pharmacy	December 02, 2008	Tuesday	10 - 4
Hamilton (Central Mountain)	Dell Pharmacy	December 03, 2008	Wednesday	1 - 7
Hamilton (Central Mountain)	Rexall Pharmacy	November 26, 2008	Wednesday	10 - 8
Hamilton (Ancaster)	Dell Pharmacy	November 15, 2008	Saturday	10 - 4
Hamilton (Stoney Creek)	Eastgate Square	October 01-02, 2008	Wednesday Thursday	5 - 9 5 - 9
Hamilton (Downtown)	Jackson Square	October 03-04, 2008	Friday Saturday	9:30 - 5:30 9:30 - 4

Appendix 2. Summary of the Airways Clinics by Location, Clinic Environment and Community Served

Clinic Location	A brief description of Clinic environment	Community served
Toronto		
Novack's Rexall Drugs, Toronto Downtown	*Mainly singles *No families noticed *Store Customers that are well known to pharmacy staff	Small pharmacy serving immediate community in Downtown Toronto
Rexall Pharmacy on Dundas St. West	*Large percentage of ethnic groups, ESL	Small local pharmacy
Shoppers Drug Mart	*Predominately mothers with young children and seniors *Clinic ran on Seniors Day	Local pharmacy for community residents
Wal-Mart Pharmacy, Dufferin Mall	*Many people at mall, predominately families *Lower end stores likely reflecting population and socio-economics of the neighbourhood	Pharmacy located at the mall serving local community residents
Wal-Mart Pharmacy, Sherway Gardens	*Various types of shoppers – singles, older couples, families	Large store in 'big box area, near a large mall
Mel Lastman Community Centre/North York Central Library	*Predominately Asian population and many families and students	North Toronto
Yorkdale Mall	*Many families, notably both couples and single shoppers * Very busy mall with "high end" stores	One of the largest malls in Toronto serving residents of nearby cities due to its location (Hwy 401 and Dufferin Street)
Hamilton		
Dell Pharmacy, East Mountain	*Clinic ran on the "Save the tax day", very busy *Older population noted	Local pharmacy for community residents Smaller store, a "blue collar" area
Dell Pharmacy, Central Mountain	*Local pharmacy for community residents	Large pharmacy area with 7 counter staff
Rexall Pharmacy, Central Mountain	*One of the largest locations	Serves local residents, largely a "blue collar" area
Dell Pharmacy, Ancaster	*Serves local population in the original downtown sector, mainly an older population	Small local community in the old downtown area
Eastgate Square	*Lots of families and couples	Small community mall serving the local residents
Jackson Square	*Multicultural community, lower class, special needs (people with scooters, walkers).	Large downtown mall, home of Hamilton farmers market

Appendix 3. “Airways Clinics” Poster

Inspiring Innovation and Discovery



Asthma.ca
Asthma Society of Canada
ASTHMA·ALLERGY·COPD

DO YOU know your Lung Age??

**The Asthma Society of Canada is Hosting
“AIRWAYS CLINICS” at:**

Date: _____
Time: _____

Who Should Visit Us?

 You are a smoker, over the age of 40

 Your Physician has given you a diagnosis of asthma or Chronic Obstructive Lung Disease
(COPD includes Chronic bronchitis, emphysema)

 You are experiencing: coughing, wheezing, difficulty breathing, chest tightness

Come see us for information about Asthma, Allergies and COPD

ALL are welcome. For more information please contact: Michelle@asthma.ca

or: 905-525-9140, ext. 20438 

Appendix 4. Micro PulmoLife Spirometry Screener/Peak Flow Monitor MPL10, Manufactured by the Micro Medical

PulmoLife continues the Micro Medical tradition of being accurate and simple to use and provides health professionals with a useful and unique mass-screening tool to help reduce the burden of chronic lung disease.



This small, hand held device measures FEV1, the measurement of choice in screening of chronic respiratory disease. The unit will display a patient's result together with the FEV1 (Forced Expiratory Volume in the First Second of Expiration) as a percentage of their predicted value. These results are used to calculate a 'Lung Age'. The associated 'Lung Age' graphical display may help the patient realize the physical damage caused by smoking/lung disease, encouraging attendance for smoking cessation advice and full spirometry assessment, leading to early diagnosis and appropriate management of their respiratory condition. The measurement of the FEV1 will indicate the degree (if any) of airflow obstruction – seen in persons with sub-optimally controlled asthma and/or COPD.

Suitable for:

- FEV1 testing programs to assess airflow
- Identification of early signs of COPD in smokers over 40 or anyone with respiratory symptoms

'Lung Age'

The 'Lung Age' estimation is based on a patient's FEV1 results and predicted values. A 'Lung Age' example; a 40 year old 5'9" (1.75m) male smoker has an FEV1 of 3.4L giving an estimated 'Lung Age' of 52 years. This is because the FEV1 is 100% of the predicted value that a 52 year old would be expected to get.

'Features'

- Measures FEV1 (Forced Expiratory Volume in the First Second of Expiration)
- Gives FEV1 result as a percentage of predicted values
- 'Lung Age' Interpretation (Morris and Temple)
- Used as a motivational tool for smoking cessation

Appendix 5. Letter of Information/Consent



_____, 2008

Letter of Information/Consent Partnership in Lung Age Testing and Education (PLATE)

Investigators: The Asthma Society of Canada

Principal Investigator: Dr. Susan Elliott
School of Geography and Earth Sciences
McMaster University
Hamilton, Ontario, Canada
(905) 525-9140 ext. 23139

Co-Investigator: Meridene Haynes
Asthma Society of Canada
Toronto, Ontario, Canada
416-787-4050, ext. 108

Purpose of the Study

The purpose of Partnership in Lung Age Testing and Education (PLATE) is to find out if community airways clinics can improve the management of compromised lung health.

Procedures involved in the Research

You will be asked to fill in a 10-minute questionnaire about your lung health, medications, smoking and demographics (age, education, income). A Certified Asthma Educator (CAE) will assess the functioning of your lungs by asking you to breathe into a handheld tool. She will tell you your lung age (measured lung function age compared to your chronological age). You will be given a brief (less than 15 minutes) education session on disease management, lifestyle issues (diet, exercise, smoking) and community resources. In 6 months, we will call you to ask you about your health. The researchers will be providing you with a re-cap sheet that will outline the peak flow reading, as well as the educational materials that were reviewed; a copy of this sheet will be forwarded to your Family Physician for follow-up, if necessary.

Potential Harms, Risks or Discomforts:

Peak flow testing sometimes induces cough or temporary light headedness, which subsides after resting in a chair for a few minutes. Participants may feel worried or upset about the results of the lung age measurement if they feel their lung health is currently compromised. If you are worried about your results, you should discuss them with your family physician. We will also ask you demographic questions like your age, education, and income, and such questions may make you feel uncomfortable. You do not need to answer questions that make you uncomfortable or that you do not want to answer.

Potential Benefits

There are several possible benefits to individuals participating in the study including potential early detection of a health concern; substantial guidance with respect to disease management; and short and long term impacts on health and well being with respect to lung health.

Payment or Reimbursement:

Participants will receive an Education Package upon completion of education session.

Confidentiality:**Who will know what I said or did in the study?**

No personal information will be recorded on the two questionnaires being used; rather, a unique identifier will be used that will allow researchers to link the research participant to a master list, kept in a locked filing cabinet in the PIs office at McMaster. All data will be reported in the aggregate so that no individual can be identified in the reporting of results.

Legally Required Disclosure:

Information obtained will be kept confidential to the full extent of the law and I will treat all information provided to me as subject to researcher-participant privilege. This information will only be available to the main researchers in the study, and will only be used for the objectives outlined above.

Participation:**What if I change my mind about participating in the study?**

If participants decide to participate, they may decide to stop at any time, even after signing the consent form or part-way through the study, without penalty. Should they withdraw, any data provided up to that point will not be used. If a participant decides to withdraw from the study, they will still receive relevant educational materials but will not be contacted for the 6 month follow up survey.

Information about the Study Results:

Each individual participant will receive a re-cap sheet that outlines their personal results. In addition, they may obtain a summary of the study results by indicating so in the participant registration process.

Information about Participating as a Study Subject: Rights of Research Participants

If you have questions or require more information about the study itself, please contact Michelle Vine, Project Manager, PLATE, McMaster University, 905-525-9140, ext. 20438, or at: vinemm@mcmaster.ca.

This study has been reviewed and approved by the McMaster Research Ethics Board. If you have concerns or questions about your rights as a participant or about the way the study is conducted, you may contact:

McMaster Research Ethics Board Secretariat
Telephone: (905) 525-9140 ext. 23142
c/o Office of Research Services
E-mail: ethicsoffice@mcmaster.ca

CONSENT

I have read the information presented in the information letter about a study being conducted by The Asthma Society of Canada/McMaster University. I have had the opportunity to ask questions about my involvement in this study, and to receive any additional details I wanted to know about the study. I understand that I may withdraw from the study at any time if I choose to do so, and I agree to participate in this study. I also agree to participate in a follow-up questionnaire 6 months from now; the researchers will contact me by telephone to administer the follow-up questionnaire. I have been given a copy of this form.

PLATE Demonstration Project- Initial assessment and education session

Printed Name of Participant: _____

Participant Signature: _____

Participant Postal Code: _____

Name of Family Physician: _____

Date: _____

Appendix 6. Summary of the Airways Clinics by Location, Community Setting and the Number of Visitors

Community setting	Day of the week	Time of the Clinic	Number of visitors		
			Total	Study participants	People received education/information
Toronto					
Novack's Rexall Drugs	Thursday Friday	10 - 6 10 - 6	31	21	10
Rexall Pharmacy on Dundas St. W	Thursday	10 - 6	17	2	15
Shoppers Drug Mart	Thursday	10 - 5	30	10	20
Wal-Mart Pharmacy, Dufferin Mall	Thursday	10 - 6	18	3	15
Wal-Mart Pharmacy, Sherway Gardens	Monday	10 - 5	10	1	9
Mel Lastman Community Centre/North York Central Library	Saturday	10 - 5	37	8	29
Yorkdale Mall	Saturday Sunday	9:30 - 8:30 10 - 6	68	9	59
<i>Total for Toronto</i>			211	54	157
Hamilton					
Dell Pharmacy, East Mountain	Tuesday	10 - 4	9	2	7
Dell Pharmacy, Central Mountain	Wednesday	1 - 7	7	3	4
Rexall Pharmacy, Central Mountain	Wednesday	10 - 8	4	0	4
Dell Pharmacy, Ancaster	Saturday	10 - 4	8	7	1
Eastgate Square	Wednesday Thursday	5 - 9 5 - 9	13	5	8
Jackson Square	Friday Saturday	9:30 - 5:30 9:30 - 4	81	16	65
<i>Total for Hamilton</i>			122	33	89
Grand total			333	87	246

Appendix 7. Pre-Questionnaires

Version 1 - Asthma



ASTHMA SOCIETY OF CANADA - PLATE Pre-Questionnaire

Version 1 - Please complete if you have been given a diagnosis of asthma by a physician

The Asthma Society of Canada is organizing community-based “Airways Clinics” to improve the quality and access to services for those suffering from asthma and COPD, or simply experiencing breathing problems. The project is implemented in partnership with AllerGen, the National Centre of Excellence in allergy and asthma research (McMaster University) and the Canadian Network for Asthma Care (CNAC), and funded by the Public Health Agency of Canada. It has been approved by the Research Ethics Board of McMaster University. As part of the project, we are asking you to complete the following questionnaire.

This questionnaire contains questions related to your asthma, your smoking history, your level of physical activity, and your experience with community resources that offer information/advice about asthma and allergies. It should take you no more than 10 minutes to complete. Your answers will help us better understand how asthma education and other services affect the health and well being of those living with asthma, associated allergies and COPD, and what should be done to improve existing resources. All the answers you provide will be kept strictly confidential, and data will be coded and reported in such a way that will protect your anonymity and that of all respondents.

When completing the questionnaire, please follow the instructions found at the beginning of each section. **Once you have completed the questionnaire, please hand it to the person at the registration desk and you will be directed to your session.**

Thank you very much for taking the time to complete this questionnaire!

First, we would like to ask you a few questions about *your* asthma and related allergies. Please **CIRCLE/CHECK** the response that most accurately reflects your current status and fill in the blanks when applicable.

Section 1: Clinical and Medication History

1. **In the last month**, have you had any asthma symptoms (i.e. cough, chest tightness, wheeze, difficulty breathing, and/or shortness of breath)? Yes No (zero symptoms); please go to **question 2**

a) **If YES**, please check the appropriate box below:

- Daily
- 1-2 days per week
- 1-2 days per month

2. **In the last 6 months**, have you:

- | | | |
|--|-----|----|
| a) Missed school or work because of your asthma? | Yes | No |
| b) Had your social activities (e.g. playing with kids, visiting friends, etc.) limited because of your asthma? | Yes | No |
| c) Had your physical activities limited by asthma? | Yes | No |

d) Had your regular/daily activities (e.g. walking, household chores, going upstairs, etc.) limited by asthma?
 Yes No

3. In the last 6 months, have you:

- a) Gone to the Emergency Room because of your asthma? Yes No
- b) Gone to a walk-in clinic because of your asthma? Yes No
- c) Made an unscheduled visit to see your Doctor because of your asthma? Yes No
- d) Been admitted to hospital because of your asthma? Yes No
- e) Been seen by a specialist because of your asthma? Yes No

4. In the last 6 months, how many asthma flare ups/attacks did you have? _____

5. In the last 6 months, how often did you feel that your asthma was under control?

- None of the time
- Some of the time
- Most of the time
- All of the time
- Don't know

6. In the last 6 months have you been prescribed any medications for your asthma?

Yes No; please go to **question 11**

- a) In the last 6 months, have you been prescribed a rescue inhaler? Yes No
- b) If YES, how many repeats have you used? _____

7. In the last 6 months, have you been prescribed a daily maintenance therapy (inhalers, pills) for your asthma?

Yes No

- a) If YES, do you still take it daily? Yes No

8. Are you currently using any inhalers for your asthma? Yes No

9. Please list **ALL** medications (inhalers and pills, and colour), how often you use them and tell us what your inhaler/medication does. If you are unsure of what your inhaler does, please indicate this.

Name of Medication:	i)	ii)	iii)
Colour of Medication	i)	ii)	iii)
I use it:			
Regularly/Daily			
Occasionally (from time to time)			
Only as needed			
During asthma flare up/attacks			
Never			
This inhaler is used for:			

10. Have you ever been shown/demonstrated how to use your inhalers? Yes No

11. Have you ever had a breathing test? Yes No; please go to **question 12**

a) **If YES**, when was the last test you had?

- Last 6 months
- Last year
- Last 5 years
- More than 5 years ago

12. Have you received detailed education about your asthma?

Yes No; please go to **question 13**

a) **If YES**, from whom did you receive this information?

- Family Physician
- Doctor’s Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Asthma Educator/Respiratory Educator
- Asthma Clinic

Other: _____

13. Have you ever been given an asthma action plan?

Yes No; please go to **question 14**

a) **If YES**, do you use it?

Yes No

14. How confident do you feel about managing your asthma?

- Not confident at all
- Somewhat confident
- Fairly confident
- Very confident

15. Do you have allergies?

Yes No; please go to **question 16**

If YES:

- a) Have you had an allergy test?
- b) Do you use over the counter medications for allergies?
- c) Do you use prescription medications for allergies?
- d) Have you received allergy shots?

Yes No
Yes No
Yes No
Yes No

Next, we would like to ask you a few questions about your asthma knowledge/understanding. If you feel that the statement is true, please indicate by placing a **CHECK MARK** in the true column. If you feel that the statement is untrue, please indicate by placing a check mark in the false column. If you are unsure, please indicate by placing a check mark in the Not Sure column.

Section 2: Asthma Knowledge/Understanding

16. Knowledge of Asthma	True	False	Not Sure
a) Asthma is a chronic condition.			
b) Left untreated, asthma will eventually go away.			
c) I only need to take my medication when I am having trouble with my breathing.			

d) Airways may have inflammation that needs to be treated on a daily basis.			
e) Asthma is a nervous or psychological illness.			
f) You can become addicted to asthma medications if you use them all the time.			
g) Although it cannot be cured, asthma can be controlled by taking the correct medication.			

Now we would like to ask you a few questions about your health history, including your smoking history and your level of physical activity. Please **CIRCLE/CHECK** the response that most accurately reflects your current status and fill in the blanks when applicable.

Section 3: Smoking History

17. Are you a current smoker? Yes No; please go to **question 22**

18. **IF YES**, for how many years have you been smoking tobacco products daily?
 _____cigarettes per day x _____years

19. Which of the following products do you smoke each day?

- Manufactured cigarettes
- Hand-rolled cigarettes
- Pipefuls of tobacco
- Other: _____

20. Have you ever tried to quit smoking? Yes No; please go to **question 22**

a) **IF YES**, how many quit attempts have you made? _____

21. What did you use to help you try to quit?

- Nicotine replacement therapy (i.e. nicotine patch/gum/lozenge/inhaler)
- Prescription medication
- Counselling
- No help used
- Smokers Helpline
- Other: _____

22. Are you ever exposed to second-hand smoke? Yes No; please go to **question 23**

a) **IF YES:**

i) Home	ii) Work	iii) Public Places
Regularly	Regularly	Regularly
Occasionally	Occasionally	Occasionally
Not at all	Not at all	Not at all

Don't know	Don't know	Don't know
------------	------------	------------

23. Are you an ex-smoker? Yes No; please go to **question 28**

a) **If YES**, when did you quit? (or how many years ago?) _____

24. **If YES**, for how many years did you smoke tobacco products daily?
 _____cigarettes per day x _____years

25. What products did you smoke?

- Manufactured cigarettes
- Hand-rolled cigarettes
- Pipefuls of tobacco
- Other: _____

26. How many quit attempts did you make? _____

27. What did you use to help you quit?

- Nicotine replacement therapy (i.e. nicotine patch/gum/lozenge/inhaler)
- Prescription medication
- Counselling
- No help used

Other: _____

Section 4: Physical Activity

28. Do you exercise (including walking)? Yes No; please go to **part b**

a) **If YES**, what do you do for exercise? _____

b) **If NO**, what limits your ability to exercise? _____

Please go to **question 31**

29. How often do you exercise? _____times/week

30. About how much time did you spend on average on each occasion?

- 1 to 15 minutes
- 16 to 30 minutes
- 31 to 60 minutes
- More than one hour
- Do not know

31. Do you perform breathing exercises? Yes No; please go to **question 33**

a) **If YES**, please specify which ones (e.g. tai-chi, yoga, diaphragm breathing, pursed lips breathing, etc.):

32. How often do you perform these exercises? _____/week

Now we would like to ask you a few questions about your experience with community resources that offer information/advice about asthma and allergies. Please **CIRCLE** the response that most accurately reflects your current status and fill in the blanks when applicable.

Section 5: Community Resources

33. Are you aware of any community resources that offer advice/information/educational materials about asthma, allergies, and smoking cessation? Yes No; please go to **question 35**

a) **If YES**, please specify these community resources:

- The Asthma Society of Canada
- The Lung Association
- Asthma and Allergy Information Association
- Public Health
- Canadian Cancer Society/Smoker's Help Line
- COPD Canada
- Others: _____

34. **If YES**, have you utilized any of the resources? Yes No; please go to **question 35**

a) **If YES**, did you find them useful/helpful? Yes No

Finally, we would like to ask a few questions about you. Please put a check mark in the box that corresponds to you. **Please be assured that you have the right to refuse to answer any of these questions.**

Section 6: Socio-Demographic Information

35. In what year were you born? 19_____

36. What is your sex?

- Male
- Female

37. What is your marital status?

- Single
- Married/Common Law
- Widowed
- Separated/Divorced
- Other

38. What is your highest level of education?

- No schooling

- Some elementary school
- Completed elementary school
- Some high school/junior high school
- Completed high school
- Some community college
- Some technical school (CEGEP, College Classique)
- Completed community college
- Completed technical school (CEGEP, College Classique)
- Some university
- Completed bachelor's degree (Arts, Sciences, etc...)
- Post-graduate training: MA, MSc, MLS, MSW, etc...

39. What is the age of your current (primary, if you have more than one) dwelling (i.e. house, apartment, assisted living centre, shelter, etc)? _____ years old

40. How many people currently live in your household? _____

41. Are any of your household members less than 18 years of age? Yes No

42. Do you have any pets in your home? Yes No; please go to **question 43**

a) **If YES**, how many do you have? _____

b) Please list the types of pets you have: _____

43. Could you please tell me how much income you and all other members of your household received in the past year? Be sure to include FROM ALL SOURCES such as savings, pensions, rent, and unemployment insurance as well as wages.

- Less than \$20,000
- Between \$20,000 and \$30,000
- Between \$30,000 and \$40,000
- Between \$40,000 and \$50,000
- Between \$50,000 and \$60,000
- Between \$60,000 and \$70,000
- Between \$70,000 and \$80,000
- Between \$80,000 and \$100,000

- More than \$100,000
- Do not know
- Refused

Thank you for taking the time to complete this questionnaire!

Date: _____

Location: _____

Version 2 – COPD**ASTHMA SOCIETY OF CANADA - PLATE Pre-Questionnaire**

Version 2 - Please complete if you have been given a diagnosis of Chronic Obstructive Pulmonary Disease (COPD), including chronic bronchitis or emphysema, by a physician.

The Asthma Society of Canada is organizing community-based “Airways Clinics” to improve the quality and access to services for people suffering from asthma and COPD, and experiencing breathing problems. The project is implemented in partnership with AllerGen, the National Centre of Excellence in allergy and asthma research (McMaster University) and the Canadian Network for Asthma Care (CNAC), and funded by the Public Health Agency of Canada. It has been approved by the Research Ethics Board of McMaster University. As part of the project, we are asking you to complete the following questionnaire.

This questionnaire contains questions related to your COPD, your smoking history, your level of physical activity, and your experience with community resources that offer information/advice about COPD. It should take you no more than 10 minutes to complete. Your answers will help us better understand how education and other services affect the health and well being of those living with asthma, associated allergies and COPD, and what should be done to improve existing resources. All the answers you provide will be kept strictly confidential, and data will be coded and reported in such a way that will protect your anonymity and privacy.

When completing the questionnaire, please follow the instructions found at the beginning of each section. **Once you have completed the questionnaire, please hand it to the person at the registration desk and you will be directed to your session.**

Thank you very much for taking the time to complete this questionnaire!

First, we would like to ask you a few questions about *your* COPD. Please **CIRCLE/CHECK** the response that most accurately reflects your current status and fill in the blanks where applicable.

Section 1: Clinical and Medication History

1. **In the last month**, have you had any COPD symptoms (persistent cough, phlegm, or shortness of breath on exertion?) Yes No (zero symptoms); please go to **question 2**

a) **If YES**, please check the appropriate box below:

- Daily
- 1-2 days per week
- 1-2 days per month

2. a) Do you cough several times most days? Yes No

b) Do you bring up phlegm or mucus most days? Yes No

c) Do you get out of breath more easily than others your age? Yes No

d) Are you older than 40 years? Yes No

3. **In the last 6 months**, have you:

a) Missed school or work because of your COPD? Yes No

b) Had your social activities (e.g. playing with kids, visiting friends, etc.) limited because of your COPD? Yes No

c) Had your exercise level limited by COPD? Yes No

d) Had your regular/daily activities (e.g. walking, household chores, going upstairs, etc.) limited by COPD? Yes No

4. **In the last 6 months**, have you:

a) Gone to the Emergency Room because of your COPD exacerbation and/or a respiratory infection? Yes No

- b) Gone to a walk-in clinic because of your COPD exacerbation and/or a respiratory infection? Yes No
- c) Made an unscheduled visit to see your Doctor because of your COPD? Yes No
- d) Been admitted to the hospital because of your COPD? Yes No
- e) Been seen by a specialist because of your COPD? Yes No

5. In the last 6 months:

- a) How many COPD exacerbations did you have? _____
- b) How many respiratory infections did you have? _____

6. In the last 6 months, how often do you feel that your COPD was properly managed?

- None of the time
- Some of the time
- Most of the time
- All of the time
- Don't know

7. In the last 6 months, have you been prescribed any inhalers or medications (pills, antibiotics, etc.) for your COPD? Yes No; please go to **question 8**

8. In the last 6 months, have you been taking any medications (inhalers, pills, etc.) for your COPD?

Yes No; please go to **question 9**

- a) If **YES**, please list **ALL** medications (inhalers or pills), how often you use them, and tell us what your inhaler/medication does. If you are unsure of what your inhaler does, please indicate this.

Name of Medication:	i)	ii)	iii)
Colour of Medication	i)	ii)	iii)
I use it:			
Regularly/Daily			
Occasionally (from time to time)			
Only as needed			
Never			

9. Have you ever been shown/demonstrated how to use your inhalers? Yes No

10. Have you ever had a breathing test? Yes No; please go to **question 11**

- a) If **YES**, when was the last test you had?

- Last 6 months
- Last year
- Last 5 years
- More than 5 years ago

11. Have you received detailed education about your COPD? Yes No; please go to **question 12**

- a) If **YES**, from whom did you receive this information?

- Family Physician

- Doctor’s Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Asthma Educator/Respiratory Educator/COPD Educator
- Other: _____

12. How confident do you feel about managing your COPD?

- Not confident at all
- Somewhat confident
- Fairly confident
- Very confident

13. Do you have a COPD management plan to follow for flare-ups of your COPD?

- a) If **YES**, do you use it? Yes No; please go to **question 14**
Yes No

14. Do you have allergies? Yes No; please go to **question 15**

If YES:

- a) Have you had an allergy test? Yes No
- b) Do you use over the counter medications for allergies? Yes No
- c) Do you use prescription medications for allergies? Yes No
- d) Have you received allergy shots? Yes No

Next, we would like to ask you a few questions about your asthma knowledge/understanding. If you feel that the statement is true, please indicate by placing a **CHECK MARK** in the true column. If you feel that the statement is untrue, please indicate by placing a check mark in the false column. If you are unsure, please indicate by placing a check mark in the Not Sure column.

Section 2: COPD Knowledge/Understanding

15. COPD (including chronic bronchitis and emphysema)	True	False	Not Sure
a) In COPD there is usually gradual worsening over time.			
b) More than 80% of COPD cases are caused by smoking.			
c) Quitting smoking is the best way to prevent COPD from progressing.			
d) Cough and phlegm are common in COPD.			
e) People with COPD should exercise even if it makes them short of breath.			

Now we would like to ask you a few questions about your health history, including your smoking history and your level of physical activity. Please **CIRCLE/CHECK** the response that most accurately reflects your current status and fill in the blanks when applicable.

Section 3: Smoking History

16. Are you a current smoker? Yes No; please go to **question 20**

a) **If YES**, for how many years have you been smoking tobacco products daily?
 _____cigarettes per day x _____years

17. Which of the following products do you smoke each day?

- Manufactured cigarettes
- Hand-rolled cigarettes
- Pipefuls of tobacco
- Other: _____

18. Have you ever tried to quit smoking? Yes No; please go to **question 20**

a) **If YES**, how many times have you tried to quit? _____

19. What have you used to help you quit?

- Nicotine replacement therapy (i.e. nicotine patch/gum/lozenge/inhaler)
- Prescription medication
- Counselling
- No help used
- Smokers Helpline
- Other: _____

20. Are you ever exposed to second-hand smoke? Yes No; please go to **question 21**

a) **If YES:**

i) Home	ii) Work	iii) Public Places
Regularly	Regularly	Regularly
Occasionally	Occasionally	Occasionally
Not at all	Not at all	Not at all
Don't know	Don't know	Don't know

21. Are you an ex-smoker? Yes No; please go to **question 25**

a) **If YES**, how many years ago did you quit? _____ years

22. **If YES**, for how many years did you smoke tobacco products daily?

_____cigarettes per day x _____years

23. What products did you smoke?

- Manufactured cigarettes
- Hand-rolled cigarettes
- Pipefuls of tobacco
- Other: _____

24. What did you use to help you quit when you were successful at quitting?
- Nicotine replacement therapy (i.e. nicotine patch/ gum/lozenge/inhaler)
 - Prescription medication
 - Counseling
 - No help used
 - Smokers Helpline
 - Other: _____

Section 4: Physical Activity

25. Do you exercise? (including walking) Yes No; please go to **part b**

a) **If YES**, what do you do for exercise? _____

b) **If NO**, what limits your ability to exercise? _____

Please go to **question 28**

26. How often do you exercise? _____ times/ week

27. About how much time do you exercise on average on each occasion?

- 1 to 15 minutes
- 16 to 30 minutes
- 31 to 60 minutes
- More than one hour
- Do not know

28. Do you perform specific breathing exercises? Yes No; please go to **question 30**

a) **If YES**, please specify which ones (e.g. tai-chi, yoga, diaphragm breathing, pursed lips breathing, etc.):

29. How often do you perform these exercises? _____ times/week

Now we would like to ask you a few questions about your experience with community resources that offer information about COPD and smoking cessation. Please **CIRCLE/CHECK** the response that most accurately reflects your current status and fill in the blanks where applicable.

Section 5: Community Resources

30. Are you aware of any community resources that offer advice/information/educational materials about COPD and smoking cessation? Yes No; please go to **question 32**

a) **If YES**, please specify these community resources

- The Asthma Society of Canada
- The Lung Association
- Public Health

- Canadian Cancer Society/Smoker's Help Line
- COPD Canada
- Local community organizations(please specify) _____
- Others: _____

31. **If YES**, have you utilized any of the resources? Yes No; please go to **question 32**
a) **If YES**, did you find them useful/helpful? Yes No

Finally, we would like to ask a few questions about you. Please put a check mark in the box that corresponds to you. **Please be assured that you have the right to refuse to answer any of the questions.**

Section 6: Socio-Demographic Information

32. In what year were you born? 19_____
33. What is your sex?
- Male
 - Female
34. What is your marital status?
- Single
 - Married/Common Law
 - Widowed
 - Separated/Divorced
 - Other
35. What is your highest level of education?
- No schooling
 - Some elementary school
 - Completed elementary school
 - Some high school/junior high school
 - Completed high school
 - Some community college
 - Some technical school (CEGEP, College Classique)
 - Completed community college
 - Completed technical school (CEGEP, College Classique)
 - Some university

Completed bachelor's degree (Arts, Sciences, etc...)

Post-graduate training: MA, MSc, MLS, MSW, etc...

36. What is the age of your current (primary, if you have more than one) dwelling (i.e. house, apartment, assisted living centre, shelter, etc)? _____ years old

37. How many people currently live in your household? _____

38. Are any of your household members less than 18 years of age? Yes No

39. Do you have any pets in your home? Yes No; please go to **question 40**

a) **If YES**, how many do you have? _____

b) Please list the types of pets you have: _____

40. Could you please tell me how much income you and all other members of your household received in the past year? Be sure to include FROM ALL SOURCES such as savings, pensions, rent, and unemployment insurance as well as wages.

Less than \$20,000

Between \$20,000 and \$30,000

Between \$30,000 and \$40,000

Between \$40,000 and \$50,000

Between \$50,000 and \$60,000

Between \$60,000 and \$70,000

Between \$70,000 and \$80,000

Between \$80,000 and \$100,000

More than \$100,000

Do not know

Refused

Thank you for taking the time to complete this questionnaire!

Date: _____

Location: _____

Version 3 – Respiratory Symptoms

ASTHMA SOCIETY OF CANADA - PLATE Pre-Questionnaire

Version 3 - Please complete if you have been experiencing respiratory symptoms and/or any difficulty with your breathing, but have not been given a diagnosis of asthma or COPD by a physician, or if you are a smoker over the age of 40, or an ex-smoker who smoked for 20 years or longer.

The Asthma Society of Canada is organizing community-based “Airways Clinics” to improve the quality and access to services for people suffering from asthma and COPD, and anyone else experiencing breathing problems. The project is implemented in partnership with AllerGen, the National Centre of Excellence in allergy and asthma research (McMaster University) and the Canadian Network for Asthma Care (CNAC), and funded by the Public Health Agency of Canada. It has been approved by the Research Ethics Board of McMaster University. As part of the project, we are asking you to complete the following questionnaire.

This questionnaire contains questions related to your symptoms, your smoking history, your level of physical activity, and your experience with community resources that offer information/advice about asthma, COPD, allergies and smoking cessation. It should take you no more than 10 minutes to complete. Your answers will help us better understand how education and other services affect the health and well being of those living with breathing disorders. All the answers you provide will be kept strictly confidential, and data will be coded and reported in such a way that will protect your anonymity and that of all respondents.

When completing the questionnaire, please follow the instructions found at the beginning of each section. **Once you have completed the questionnaire, please hand it to the person at the registration desk and you will be directed to your session.**

Thank you very much for taking the time to complete this questionnaire!

First, we would like to ask you a few questions about *your* respiratory symptoms and related allergies. Please **CIRCLE/CHECK** the response that most accurately reflects your current status and fill in the blanks when applicable.

Section 1: Clinical and Medication History

1. **In the last 6 months**, have you had any respiratory/breathing problems/symptoms?

Yes No (zero symptoms); please go to **question 2**

a) **If YES**, please check the appropriate box below:

	1 - 2 days/week	3 - 5 days/week	Daily	1 - 2 days/month
Cough				
Chest Tightness				
Wheeze				
Difficulty Breathing				
Sputum Production				
Shortness of Breath				

2. a) Do you cough several times most days? Yes No

b) Do you bring up phlegm or mucus most days? Yes No

c) Do you get out of breath more easily than others your age? Yes No

d) Are you older than 40 years? Yes No

3. **In the last 6 months**, have you:

a) Missed school or work because of these symptoms/breathing problems? Yes No

b) Had your social activities (e.g. playing with kids, visiting friends, etc.) limited because of your symptoms/breathing problems? Yes No

- c) Had your exercise level limited by respiratory symptoms/breathing problems? Yes No
 d) Had your regular/daily and/or social activities (e.g. walking, household chores, going upstairs, etc.) limited by your symptoms/breathing problems? Yes No

4. In the last 6 months, have you:

- a) Gone to the Emergency Room because of your symptoms/breathing problems? Yes No
 b) Gone to a walk-in clinic because of your symptoms/breathing problems? Yes No
 c) Seen your doctor about these symptoms/breathing problems? Yes No
 d) Been admitted to the hospital because of your breathing symptoms? Yes No
 e) Been seen by a specialist because of your symptoms/breathing problems? Yes No
 f) Been referred to see a specialist because of your breathing problems? Yes No

5. In the last 6 months have you been prescribed any medications for your breathing problems?

- Yes No; please go to **question 8**
 a) In the last 6 months, have you been prescribed an inhaler? Yes No; please go to **question 6**
 b) In the last 6 months, have you taken an inhaler? Yes No; please go to **question 8**

6. In the last 6 months, have you been prescribed an inhaler for **daily/regular** use to treat your breathing problems?

- Yes No; please go to **question 7**
 a) If **YES**, do you still take it daily? Yes No

7. Are you currently using any inhalers for your breathing problems? Yes No

8. Please list **ALL** medications (inhalers and pills), how often you use them and tell us what your inhaler/medication does. If you are unsure of what your inhaler does, please indicate this.

Name of Medication:	i)	ii)	iii)
Colour of Medication	i)	ii)	iii)
I use it:			
Regularly/Daily			
Occasionally (from time to time)			
Only as needed			
When I experience symptoms			
Never			
This inhaler is used for:			

9. Have you ever been shown/demonstrated how to use your inhalers? Yes No

10. Have you ever had a breathing test? Yes No; please go to **question 10b.**

a) If **YES**, when was the last test you had?

- Last 6 months
 Last year
 Last 5 years
 More than 5 years ago

b) If **NO**, since your symptoms/breathing problems began, has your Doctor discussed the necessity to do a breathing test? Yes No

11. Have you discussed your respiratory symptoms/breathing problems with a health care professional and/or received detailed education? Yes No; please go to **question 12**

a) **If YES**, from whom did you receive this information?

- Family Physician
- Doctor's Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Asthma Educator/Respiratory Educator
- Asthma Clinic
- Other: _____

12. Do you have allergies? Yes No; please go to **question 13**

If YES:

- a) Have you had an allergy test? Yes No
- b) Do you use over the counter medications for allergies? Yes No
- c) Do you use prescription medications for allergies? Yes No
- d) Have you received allergy shots? Yes No

Next, we would like to ask you a few questions about your health history, including your smoking history and your level of physical activity. Please **CIRCLE/CHECK** the response that most accurately reflects your current status and fill in the blanks when applicable.

Section 2: Smoking History

13. Are you a current smoker? Yes No; please go to **question 18**

a) **If YES**, for how many years have you been smoking tobacco products daily?
 _____ cigarettes per day x _____ years

14. Which of the following products do you smoke each day?

- Manufactured cigarettes
- Hand-rolled cigarettes
- Pipefuls of tobacco
- Other: _____

15. Have you ever tried to quit smoking? Yes No; please go to **question 17**

a) **If YES**, how many times have you tried to quit? _____

16. What have you used to help you quit?

- Nicotine replacement therapy (i.e. nicotine patch/gum/lozenge/inhaler)
- Prescription medication
- Counselling
- No help used
- Smokers Helpline

- More than one hour
- Do not know

26. Do you perform breathing exercises? Yes No; please go to **question 28**
 a) **If YES**, please specify which ones (e.g. tai-chi, yoga, diaphragm breathing, pursed lips breathing, etc.): _____

27. How often do you perform these exercises? _____/week

28. Do you feel you have enough information/resources to make healthy lifestyle choices? Yes No
If YES, what resource did you find to be most useful? _____

29. Do you feel that smoking is related to developing Chronic Obstructive Pulmonary Disease (COPD), including chronic bronchitis and emphysema? Yes No

30. Do you think that having a cough, and/or shortness of breath could mean you have asthma? Yes No

Now we would like to ask you a few questions about your experience with community resources that offer information/advice about asthma, COPD, allergies and smoking cessation. Please **CIRCLE/CHECK** the response that most accurately reflects your current status and fill in the blanks when applicable.

Section 4: Community Resources

31. Are you aware of any community resources that offer advice/information/educational materials about asthma, COPD, allergies and smoking cessation? Yes No; please go to **question 33**

a) **If YES**, please specify which resources you are aware of:

- The Asthma Society of Canada
- The Lung Association
- Asthma and Allergy Information Association
- Public Health
- Canadian Cancer Society/Smoker's Help Line
- COPD Canada
- Local community organizations
- Others: _____

32. Have you utilized any of these resources? Yes No; please go to **question 33**
 a) **If YES**, did you find them useful/helpful? Yes No

33. Have you looked for helpful information/advice about your respiratory symptoms/breathing problems? Yes No; please go to **question 34**

a) **If YES**, please specify the source: _____

34. Are you worried about having respiratory symptoms/breathing problems?

Yes; please go to **question 35** No

a) If NO, please specify why? _____

Finally, we would like to ask a few questions about you. Please put a check mark in the box that corresponds to you. **Please be assured that you have the right to refuse to answer any of the following questions.**

Section 5: Socio-Demographic Information

35. In what year were you born? 19_____

36. What is your sex?

- Male
- Female

37. What is your marital status?

- Single
- Married/Common Law
- Widowed
- Separated/Divorced
- Other

38. What is your highest level of education?

- No schooling
- Some elementary school
- Completed elementary school
- Some high school/junior high school
- Completed high school
- Some community college
- Some technical school (CEGEP, College Classique)
- Completed community college
- Completed technical school (CEGEP, College Classique)
- Some university
- Completed bachelor's degree (Arts, Sciences, etc...)
- Post-graduate training: MA, MSc, MLS, MSW, etc...

39. What is the age of your current (primary, if you have more than one) dwelling (i.e. house, apartment, assisted living centre, shelter, etc)? _____ years old

Appendix 8. Participant Re-Cap Sheet**PLATE - Partnership in Lung Age Testing and Education
Participant Re-Cap Sheet**

_____ participated in the PLATE demonstration

programme hosted by the Asthma Society of Canada on _____

Participant Number: _____

Held at: _____

The following measures were recorded:

Peak Flow Results: _____ Predicted Value of: _____

Lung Age Measure: _____ Chronologic Age of: _____

The education points below were addressed and a take home resource kit was given for:

- Asthma
- Signs and symptoms
- Strive to achieve asthma control
- Triggers and environmental control
- Airway bronchoconstriction (muscle tightening) and airway inflammation
- Use and role of medications
- Sample of an Asthma Action Plan
- Chronic Obstructive Lung Disease
- Smoking cessation support where applicable

- Living Well with COPD booklet
- Use and role of medications
- Smokers
- Risks of smoking and related disease
- Community resources for smoking cessation

All take home education kits include brochures on healthy living and physical activity, Canada's Food Guide, community resources for information, the ASC educational material and other educational material specific to physician diagnosed asthma and/or COPD as stated by participant.

Please feel free to contact us with any questions at: Michelle@asthma.ca

Appendix 9. Educational Packages

1. Asthma education kit

- ☞ Asthma Society of Canada Helpline – phone and email contact information
- ☞ Asthma Basics booklet series from the Asthma Society of Canada (3 asthma booklets: Diagnosis, Triggers, and Medications)
- ☞ Asthma Action plan (available at www.asthma.ca)
- ☞ Patient version of the Circle of Care Asthma Storyboard (asthma education booklet)
- ☞ Information sheet on spirometry testing
- ☞ Canada's Food Guide (available at http://www.hc-sc.gc.ca/fn-an/alt_formats/hpfb-dgpsa/pdf/food-guide-aliment/view_eatwell_vue_bienmang-eng.pdf)
- ☞ Brochure "A guide to healthy living with asthma"
- ☞ Asthma Patient Bill of Rights (available at www.asthma.ca/napa)
- ☞ Registration form for National Asthma Patient Alliance (NAPA)
- ☞ Booklet on Allergic Rhinitis: Managing your allergies
- ☞ Information from the Canadian Cancer Society: Smokers Helpline books/Business card if participant was a smoker (available at www.smokershelpline.ca)

2. COPD education kit

- ☞ Asthma Society of Canada Helpline – phone and email contact information
- ☞ Brochure "Living Well with COPD" (available at www.livingwellwithCOPD.com , password COPD)
- ☞ Information sheet on spirometry testing
- ☞ Canada's Food Guide (available at http://www.hc-sc.gc.ca/fn-an/alt_formats/hpfb-dgpsa/pdf/food-guide-aliment/view_eatwell_vue_bienmang-eng.pdf)
- ☞ Information from the Canadian Cancer Society: Smokers Helpline books/business card if participant was a smoker (available at www.smokershelpline.ca)
- ☞ Materials from the Canadian Cancer Society "For Smokers who want to Quit"/ "For Smokers who do not Want to Quit" (available at www.cancer.ca)

3. Allergy information

- ☞ Asthma Society of Canada Triggers book
- ☞ "Allergic Rhinitis: Managing your Allergies" – from the Canadian Society of Allergy and Clinical Immunology

Appendix 10. PLATE Information Brochure

(It is included in the hard copy of the report)

Appendix 11. Information Sheet on Spirometry Testing



How is Asthma and Chronic Obstructive Pulmonary Disease diagnosed?

Your doctor may be able to confirm if you have asthma and/or COPD by looking at the results of breathing tests. Be sure to talk to your Doctor about your signs and symptoms, your medical and family history and your environment. All this will help your doctor make the diagnosis.

Your doctor can determine if you have asthma and/or COPD with a simple breathing test called **spirometry**. The spirometry test measures how much air you have in your lungs and how fast you can blow the air out. It is recommended that you go for the spirometry test every year, or more often if you are having trouble with your breathing.

Sometimes your doctor may send you for more testing after the spirometry results are known, to help in the diagnosis. These additional tests may be a methacholine challenge test, and/or a Full Pulmonary Function test.

People who smoke and are over the age of 40 should also go for a spirometry test once a year whether they are having trouble with their breathing or not as the spirometry test can help detect early airway disease, even before you have symptoms.

Conditions like pneumonia, heart disease, cystic fibrosis, gastroesophageal reflux disease and accidental inhalation of foreign substances have to be ruled out before your doctor can be certain that you have asthma or COPD.

Appendix 12. Brochure “A Guide to Healthy Living with Asthma”

(It is included in the hard copy of the report)

Appendix 13. Methods of Clinic Promotion Used by the Sites and the Number of Visitors

Clinic location	Promotion by the ASC	Promotion conducted by sites	Number of visitors	
			Study participants	People received education/information
Toronto				
Novack's Rexall Drugs	*Posters placed outside of the store during Clinic hours	*Staff contacted potential participants in advance *Pharmacist faxed Clinic invitations to local family physicians *Clinic posters throughout the store	21	10
Rexall Pharmacy on Dundas St. W	*Supplied the site with posters	*Clinic posters throughout the store *Staff contacted potential participants in advance	2	17
Shoppers Drug Mart	*Supplied the site with posters	* Info posted in the pharmacy * Pharmacist spoke with customers who filled inhaler prescriptions	10	20
Wal-Mart Pharmacy, Dufferin Mall	*Supplied the site with posters	* Posters on store entrance * Pharmacist let customers know about the Clinic * Info posted on pharmacy counter	3	15
Wal-Mart Pharmacy, Sherway Gardens	* Supplied the site with posters	* Info posted in the pharmacy and on the events bulletin board *Overhead announcements	1	9
Mel Lastman Community Centre/North York Central Library	* Supplied the site with posters	* Info posted on the Toronto Library website * Posters on entrance to the library	8	30
Yorkdale Mall	* Supplied the site with posters * Contacted the New Heights and Black Creek CHCs with information on the Clinic *Contacted pharmacies located at the Mall on the day of the Clinic with invitations	*Info posted on the Mall website	9	59
Hamilton				
Clinic location	Promotion by the ASC	Promotion conducted by sites	Number of visitors	
			Study participants	People received education/information
Dell Pharmacy, East Mountain	*Supplied the site with posters	*Posters in the pharmacy * Pharmacist informed customers who filled inhaler prescriptions * Info posted on the Dell website	2	7
Dell Pharmacy, Central Mountain	*Supplied the site with posters	*Posters in the pharmacy * Pharmacist informed customers who filled inhaler prescriptions	3	4

		* Info posted on the Dell website		
Rexall Pharmacy, Central Mountain	*Supplied the site with posters	*Posters in the pharmacy and at front entrance * Pharmacist faxed a personalized letter with Clinic information to 27 local physicians *Stapled invitations on inhaler refills for 2 weeks prior to the Clinic	0	4
Dell Pharmacy, Ancaster	*Supplied the site with posters	*Pharmacist called potential customers * Info included in a community newsletter *Invitations sent to local family physicians * Info posted on the Dell website	7	1
Eastgate Square	*Supplied the site with posters *Placed ads in local community papers * Ads on local radio	*Info posted on the Mall website	5	8
Jackson Square	*Supplied the site with posters *Placed ads in local community papers *Ads on local radio *Invitations distributed to mall stores and Drug Stores * Info posted in Farmers Market area	*Info posted on the Mall website *Invitations distributed to local stores	16	65

Appendix 14. Patient Recruitment for the Research Part of the Project by Clinic Location

Clinic location	Study participants			Total
	Group 1	Group 2	Group 3	
Toronto				
Novack's Rexall Drugs	6	4	11	21
Rexall Pharmacy on Dundas St. W	1	0	1	2
Shoppers Drug Mart	7	0	3	10
Wal-Mart Pharmacy, Dufferin Mall	3	0	0	3
Wal-Mart Pharmacy, Sherway Gardens	0	0	1	1
Mel Lastman Community Centre/North York Central Library	3	3	2	8
Yorkdale Mall	9	0	0	9
Hamilton				
Dell Pharmacy, East Mountain	1	1	0	2
Dell Pharmacy, Central Mountain	2	0	1	3
Rexall Pharmacy, Central Mountain	0	0	0	0
Dell Pharmacy, Ancaster	5	2	0	7
Eastgate Square	4	0	1	5
Jackson Square	13	0	3	16
Total	53	10	24	87

Appendix 15. Post-Questionnaires**Version 1 - Asthma****ASTHMA SOCIETY OF CANADA - PLATE Post-Questionnaire****Version 1 - Please complete if you have been given a diagnosis of asthma by a physician**

Hello, my name is _____. Approximately 6 months ago, you gave consent and participated in an “Airways Clinic” presented by the Asthma Society of Canada in partnership with McMaster University. At that time, you filled out a questionnaire and had correspondence with a Certified Asthma Educator.

At that time, you indicated your willingness to participate in a 6 month follow-up questionnaire. This questionnaire is similar to the initial version, and will include a few additional questions related to your clinical history, your knowledge and understanding about asthma and or COPD, your smoking history, your level of physical activity and community resources in order to gain some insight into your participation at the Airways Clinic. It will take approximately 20 minutes to complete. You may skip any question you would rather not answer. All of your information will be kept confidential and no personal identifying information will be included in our reports. Participation in this questionnaire is voluntary. Are you willing to take part in this follow-up questionnaire? Is this a good time to speak with you or would you prefer we made an appointment for me to return this call?

Thank you, I will now begin the questionnaire.

At the end of the questionnaire: please note that you are welcome to contact us for more information about the study or about the Asthma Society of Canada at any time: Michelle Vine, Project Manager, PLATE Programme, 905-525-9140, Ext. 20438, Email: vinemm@mcmaster.ca.

Thank you very much for taking the time to complete this questionnaire!

First, we would like to ask you a few questions about *your* asthma and related allergies. Please **give** the response that most accurately reflects your current status.

Section 1: Clinical and Medication history

1. **In the last month**, have you had any asthma symptoms (i.e. cough, chest tightness, wheeze, difficulty breathing, and/or shortness of breath)?

Yes No (zero symptoms); please go to **question 2**

a) **If YES**, please check the appropriate box below:

- Daily
- 1-2 days per week
- 1-2 days per month

b) Can you please describe what symptoms you experienced?

- Cough
- Chest tightness
- Wheeze

- Difficulty breathing
- Shortness of breath

2. **In the last 6 months since your visit to the Airways Clinic**, have you:

- a) Missed school or work because of your asthma? Yes No
- b) Had your social activities (e.g. playing with kids, visiting friends, etc.) limited because of your asthma? Yes No
- c) Had your physical activities limited by asthma? Yes No
- d) Had your regular/daily activities (e.g. walking, household chores, going upstairs, etc.) limited by asthma? Yes No

3. **In the last 6 months since your visit to the Airways Clinic**, have you:

- a) Gone to the Emergency Room because of your asthma? Yes No
- b) Gone to a walk-in clinic because of your asthma? Yes No
- c) Made an unscheduled visit to see your Doctor because of your asthma? Yes No
- d) Been admitted to hospital because of your asthma? Yes No
- e) Been seen by/referred to a specialist because of your asthma? Yes No

4. **In the last 6 months since your visit to the Airways Clinic**, how many asthma flare ups/attacks did you have? _____

5. **In the last 6 months since your visit to the Airways Clinic**, how often do you feel your asthma was under control?

- None of the time
- Some of the time
- Most of the time
- All of the time
- Don't know

a) **In the last 6 months since your visit to the Airways Clinic**, you feel your asthma is under better control as a result of your participation in the Airways Clinic:

Strongly Agree Agree Neither agree or disagree Disagree Strongly disagree

6. **In the last 6 months since your visit to the Airways Clinic**, do you agree you have more knowledge about your disease?

Strongly Agree Agree Neither agree or disagree Disagree Strongly disagree

7. **In the last 6 months since your visit to the Airways Clinic**, do you agree you have a better understanding about your asthma management?

Strongly Agree Agree Neither agree or disagree Disagree Strongly disagree

8. Did you visit your physician after visiting the Airways Clinic? Yes, please go to question 9 No
Do not have a physician; please go to **question 10**

a) **If NO**, please tell us why (hard to get an appointment, no time, not a first priority, etc.)

9. Did you speak with your physician about your attendance at the Airways Clinic?
Yes; please go to **question 9b** No

a) **If NO**, please tell us why (not a first priority, discussed other health issues, etc.)

b) Did you discuss peak flow meter results obtained at the Airways Clinic with your physician?
 Yes; please go to **question 10** No

c) **If NO**, what was a reason? _____

10. Overall, did you find your attendance at the Airways Clinic useful? Yes No; please go to **question 11**

a) **If YES**, what do you feel helped you the most?

- Education session with Certified Asthma Educator (CAE)
- Peak flow monitoring
- Materials provided
- Access to community resources
- Discussing with your physician your visit at the Airways Clinic
- Other: please specify

11. **In the last 6 months since your visit to the Airways Clinic**, have you been prescribed any new medications (puffers and/or pills) for your asthma?

Yes No; please go to **question 12**

a) **In the last 6 months since your visit to the Airways Clinic**, have you been prescribed a rescue inhaler?

Yes No; please go to **question 11c**

b) **If YES**, how many repeats have you used _____

c) **In the last 6 months since your visit to the Airways Clinic**, did your physician prescribe any new inhalers?

Yes No; please go to **question 12**

d) **If YES**, please indicate the name and colour of the new inhaler:

12. **In the last 6 months since your visit to the Airways Clinic**, have you been prescribed a daily maintenance therapy (inhalers, pills) for your asthma? Yes No; **please go to question 13.**

a) **If YES**, do you still take it daily? Yes No

13. Are you currently using any medications for your asthma? Yes No; please go to **question 15**

14. Please tell me **ALL** the medications (inhalers, pills, and colour) you take for your asthma, how often you use them and tell me what that inhaler/medication does. If you are unsure of what your inhaler does, please indicate so.

Name of Medication:	i)	ii)	iii)
Colour of Medication	i)	ii)	iii)
I use it:			
Regularly/Daily			
Occasionally			

(from time to time)			
Only as needed			
During asthma flare up/attacks			
Never			
This inhaler is used for:			

15. When your inhaler technique was checked at the Airways Clinic, was your inhaler technique correct at the time? Yes; please go to **question 16** No

a) **If NO**, did the education session at the Airways Clinic provide you with enough knowledge to be able to use it correctly? Yes; please go to **question 16** No

b) **If NO**, have you had your inhaler technique checked/reviewed by a health care professional since your visit to the Airways Clinic? Yes; please go to **question 16** No

c) **If NO**, could you please give me a reason why?

16. Have you had a breathing test in the last 6 months? Yes; please go to **question 18** No

17. Did your physician send you for a breathing test **since your visit to the Airways Clinic**? Yes No

18. **In the last 6 months since your visit to the Airways Clinic**, have you received any additional education about your asthma? Yes No; please go to **question 19**

a) **If YES**, from whom did you receive this information?

- Family Physician
- Doctor's Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Certified Asthma Educator/Respiratory Educator
- Asthma Clinic (other than the Airways Clinic)
- The Asthma Society of Canada
- Other: _____

19. Since your visit to the Airways Clinic, did you speak to your physician about an asthma action plan? Yes No; please go to **question 19d**

a) **If YES**, who completed the asthma action plan for you?

- Family Physician
- Doctor's Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Certified Asthma Educator/Respiratory Educator

Asthma Clinic (other than the Airways Clinic)

Other: please specify _____

b) **If YES**, have you used this asthma action plan? Yes No; please go to **question 19d**

c) **If YES**, was it helpful: Yes No

d) **If NO**, please tell us why (e.g. do not see any value in having/using it, no time, etc.)

20. **Since your visit to the Airways Clinic**, how confident do you feel about managing your asthma?

Not confident at all

Somewhat confident

Fairly confident

Very confident

a) Has your confidence about managing your asthma changed since visiting the Airways Clinic?

Yes No; please go to **question 21**

b) **If YES**, it has: increased decreased

21. Do you have allergies? Yes No; please go to **question 22**

a) **In the last 6 months since your visit to the Airways Clinic**, did you speak to your physician about having an allergy skin test done? Yes No; please go to **question 22**

b) **If YES**, have you done or are you being referred to do the test? Yes No

Next, we would like to ask you a few questions about your asthma knowledge/understanding. Please tell me if you feel that the statement is true, false or if you are not sure.

Section 2: Asthma Knowledge/Understanding

22. Knowledge of Asthma	True	False	Not sure
a) Asthma is a chronic condition.			
b) Left untreated, asthma will eventually go away			
c) I only need to take my medication when I am having trouble with my breathing			
d) Airways may have inflammation that needs to be treated on a daily basis			
e) Asthma is a nervous or psychological illness			
f) You can become addicted to asthma medications if you use them all the time			
g) Although it cannot be cured, asthma can be controlled by taking the correct medication			
h) TOTAL			

Now I would like to ask you a few questions about your health history, including your smoking history and your level of physical activity. Please provide the response that most accurately reflects your current status.

Section 3: Smoking History

23. Are you a current smoker? Yes No; please go to **question 27**

24. Which of the following products do you smoke each day?

Manufactured cigarettes

- Hand-rolled cigarettes
- Pipefuls of tobacco
- Other: _____

25. After your visit to the Airways Clinic, have you considered quitting smoking?
 Yes No; please go to **question 27**

26. **If YES**, have you tried to quit smoking?
 Yes No; please go to **question 27**

a) **If YES**, how many quit attempts did you make? _____

- b) What did you use to help you try to quit?
- Nicotine replacement therapy (i.e. nicotine patch/gum/lozenge/inhaler)
 - Prescription medication
 - Counselling/smoking cessation programs
 - No help used
 - Smokers Helpline
 - Other: _____

c) If you are still a smoker, do you wish to quit smoking? Yes No; please go to **question 26d**

d) **If NO**, what is a reason? _____

e) Do you think it is important that you quit smoking? Yes No

27. Are you currently exposed to second-hand smoke? Yes No; please go to **question 28**

a) **If YES:**

i) Home	ii) Work	iii) Public Places
Regularly	Regularly	Regularly
Occasionally	Occasionally	Occasionally
Not at all	Not at all	Not at all
Don't know	Don't know	Don't know

28. Are you an ex-smoker? Yes No; please go to **question 29**

a) **If YES**, did you quit after visiting the Airways Clinic? Yes No; please go to **question 29**

b) How many quit attempts did you make? _____

- c) **If YES**, what did you use to help you quit?
- Nicotine replacement therapy (i.e. nicotine patch/gum/lozenge/inhaler)
 - Prescription medication
 - Counselling/smoking cessation program
 - No help used
 - Smokers Helpline
 - Other: _____

Section 4: Physical Activity

29. Do you exercise (including walking)? Yes No; please go to **question 32**

a) **If YES**, what do you do for exercise?

b) **If NO**, what limits your ability to exercise? _____

Please go to **question 32**

30. How often do you exercise? _____ times/week

31. About how much time did you spend on average on each occasion?

- 1 to 15 minutes
- 16 to 30 minutes
- 31 to 60 minutes
- More than one hour
- Do not know

32. Do you perform breathing exercises? Yes No; please go to **question 34**

a) **If YES**, please specify which ones (e.g. tai-chi, yoga, diaphragm breathing, pursed lips breathing, etc.):

b) **If YES**, have you started doing them after visiting the Airways Clinic?

Yes No

33. How often do you perform these exercises? _____/week

Next I would like to ask you a few questions about your experience with community resources that offer information/advice about asthma and allergies.

Section 5: Community Resources

34. Are you aware of any community resources that offer advice/information/educational materials about asthma, allergies, and smoking cessation? Yes No; please go to **question 36**

a) **If YES**, please specify these community resources:

- The Asthma Society of Canada
- The Lung Association
- Asthma and Allergy Information Association
- Public Health
- Canadian Cancer Society/Smoker's Help Line
- COPD Canada
- Others: _____

35. Have you utilized any of these resources in the last 6 months? Yes No; please go to **question 36**

- a) **If YES**, did you find them useful/helpful? Yes No
- b) Have you utilized these resources as a direct result of attending the Airways Clinic? Yes No

36. Did you read/use educational materials that were provided to you at the Airways Clinic?
- Yes No; please go to **question 37**
 - a) **If YES**, did you find them useful/helpful? Yes No; please go to **question 36c**
 - b) **If YES**, which materials did you find most useful? _____

Please go to **question 37**

- c) **If NO**, how could the educational materials be improved upon to make them more helpful?

- 37. Since visiting the Airways Clinic, are you more aware of the role that healthy lifestyles play in overall asthma management? Yes No

- 38. If the Airways Clinics were available across Canada, would you recommend them to family and friends?

Yes No

- a) **If YES**, in your opinion, should clinics like the Airways Clinic be available across Canada?

Yes No

Do you have any additional comments about the Airways clinics or your participation?

Thank you for taking the time to complete this questionnaire!

Date: _____

Location: _____

Version 2 - COPD**ASTHMA SOCIETY OF CANADA - PLATE Post-Questionnaire**

Version 2 - Please complete if you have been given a diagnosis of Chronic Obstructive Pulmonary Disease (COPD), including chronic bronchitis or emphysema, by a physician

Hello, my name is _____. Approximately 6 months ago, you gave consent and participated in an “Airways Clinic” presented by the Asthma Society of Canada in partnership with McMaster University. At that time, you filled out a questionnaire and had correspondence with a Certified Asthma Educator.

At that time, you indicated your willingness to participate in a 6 month follow-up questionnaire. This questionnaire is similar to the initial version, and will include a few additional questions related to your clinical history, your knowledge and understanding about asthma and or COPD, your smoking history, your level of physical activity and community resources in order to gain some insight into your participation at the Airways Clinic. It will take approximately 20 minutes to complete. You may skip any question you would rather not answer. All of your information will be kept confidential and no personal identifying information will be included in our reports. Participation in this questionnaire is voluntary. Are you willing to take part in this follow-up questionnaire? Is this a good time to speak with you or would you prefer we made an appointment for me to return this call?

Thank you, I will now begin the questionnaire.

At the end of the questionnaire: please note that you are welcome to contact us for more information about the study or about the Asthma Society of Canada at any time: Michelle Vine, Project Manager, PLATE Programme, 905-525-9140, Ext. 20438, Email: vinemm@mcmaster.ca.

Thank you very much for taking the time to complete this questionnaire!

First, I would like to ask you a few questions about *your* COPD. Please provide the response that most accurately reflects your current status.

Section 1: Clinical and Medication history

1. **In the last month**, have you had any COPD symptoms (persistent cough, phlegm, or shortness of breath on exertion?) Yes No (zero symptoms); please go to **question 2**

a) **If YES**, please check the appropriate box below:

- Daily
- 1-2 days per week
- 1-2 days per month

2.

- a) Do you cough several times most days? Yes No
- b) Do you bring up phlegm or mucus most days? Yes No
- c) Do you get out of breath more easily than others your age? Yes No
- d) Are you older than 40 years? Yes No

3. **In the last 6 months since your visit to the Airways Clinic**, have you:

- a) Missed school or work because of your COPD? Yes No
- b) Had your social activities (e.g. playing with kids, visiting friends, etc.) limited because of your COPD? Yes No
- c) Had your physical activities limited by COPD? Yes No
- d) Had your regular/daily activities (e.g. walking, household chores, going upstairs, etc.) limited by COPD? Yes No

4. In the last 6 months since your visit to the Airways Clinic, have you:

- | | | |
|--|-----|----|
| a) Gone to the Emergency Room because of your COPD exacerbation (flare-up) and/or a respiratory infection? | Yes | No |
| b) Gone to a walk-in clinic because of your COPD exacerbation (flare-up) and/or a respiratory infection? | Yes | No |
| c) Made an unscheduled visit to see your Doctor because of your COPD? | Yes | No |
| d) Been admitted to the hospital because of your COPD? | Yes | No |
| e) Been seen by/referred to a specialist because of your COPD? | Yes | No |

5. In the last 6 months since your visit to the Airways Clinic:

- a) How many COPD exacerbations did you have? _____
- b) How many respiratory infections did you have? _____

6. In the last 6 months since your visit to the Airways Clinic, how often do you feel your COPD was properly managed?

- None of the time
- Some of the time
- Most of the time
- All of the time
- Don't know

7. Do you agree that you have more knowledge about your disease since you have attended the Airways Clinic?

Strongly Agree Agree Neither agree or disagree Disagree Strongly disagree

8. Do you agree that you have a better understanding about managing your COPD since attending the Airways Clinic?

Strongly Agree Agree Neither agree or disagree Disagree Strongly disagree

9. Did you visit your physician since visiting the Airways Clinic?

Yes; please go to **question 9b**; Do not have a physician; please go to **question 10**; No

a) If **NO**, please tell us why (hard to get an appointment, no time, not a first priority, etc.):

Please go to **question 10**

b) Did you discuss peak flow meter results obtained at the Airways Clinic with your physician?

Yes; please go to **question 10** No

d) If **NO**, please indicate reasons: _____

10. Overall, did you find your attendance at the Airways Clinic useful? Yes No; please go to **question 11**

a) If **YES**, what do you feel helped you the most?

- Education session with Certified Asthma Educator (CAE)
- Peak flow monitoring
- Materials provided
- Access to community resources
- Discussing with your physician your visit at the Airways Clinic

Other: please specify _____

11. **In the last 6 months since your visit to the Airways Clinic**, you feel your COPD is better managed as a result of your participation in the Airways Clinic:

Strongly Agree Agree Neither agree or disagree Disagree Strongly disagree

12. **In the last 6 months since your visit to the Airways Clinic**, have you been prescribed any medications (inhalers, pills, etc.) for your COPD? Yes No, please go to **question 13a**

13. **In the last 6 months since your visit to the Airways Clinic**, have you been prescribed any new inhalers or medications (pills, antibiotics, etc.) for your COPD? Yes No

a) Please tell me **ALL** the medications (inhalers or pills) you take for COPD and/or respiratory infections, how often you use them, and tell us what your inhaler/medication does. If you are unsure of what your inhaler does, please indicate so.

Name of Medication:	i)	ii)	iii)
Colour of Medication	i)	ii)	iii)
I use it:			
Regularly/Daily			
Occasionally (from time to time)			
Only as needed			
Never			

14. When your inhaler technique was checked at the Airways Clinic, was your inhaler technique correct at the time? Yes No

a) **If NO**, did the education session at the Airways Clinic provide you with enough knowledge to be able to use it correctly? Yes; please go to **question 15** No

b) **If NO**, have you had your inhaler technique checked/reviewed since your visit to the Airways Clinic? Yes; please go to **question 15** No

c) **If NO**, could you please give me a reason why?

15. Have you had a breathing test in the last 6 months? Yes No; please go to **question 17**

16. Did your physician send you for a breathing test since your visit to the Airways Clinic? Yes No

17. **In the last 6 months since your visit to the Airways Clinic**, have you received any additional education about your COPD? Yes No; please go to **question 18**

a) **If YES**, from whom did you receive this information?

- Family Physician
- Doctor's Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Certified Asthma Educator/Respiratory Educator/COPD Educator
- Asthma/COPD Clinic (Other than the Airways Clinic)

- The Lung Association
- The Asthma Society of Canada
- Other: _____

18. **Since your visit to the Airways Clinic**, have you discussed a COPD management plan with your physician? Yes No; please go to **question 18d**

a) **If YES**, who completed the COPD management plan for you?

- Family Physician
- Doctor’s Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Certified Asthma Educator/Respiratory Educator/COPD Educator
- Asthma/COPD Clinic (Other than the Airways Clinic)
- Other: _____

b) **If YES**, have you used this COPD management plan? Yes No; please go to **question 18d**

c) **If YES**, was it helpful? Yes No

d) **If NO**, please tell us why (i.e., do not see any value in having/using it, no time, etc.)

19. **Since your visit to the Airways Clinic**, how confident do you feel about managing your COPD?

- Not confident at all
- Somewhat confident
- Fairly confident
- Very confident

a) Has your confidence about managing your COPD changed since visiting the Airways Clinic?

Yes No; please go to **question 20**

b) **If YES**, it has: increased decreased

20. Do you have allergies?

Yes No; please go to **question 21**

If YES:

a) **In the last 6 months since your visit to the Airways Clinic**, did you speak to your physician about having an allergy skin test? Yes No; please go to **question 21**

b) **If YES**, did you go/were you referred for an allergy skin test? Yes No

Next, I would like to ask you a few questions about your COPD knowledge/understanding. Please indicate if you feel that the statement is true, false or you are not sure.

Section 2: COPD Knowledge/Understanding

21. COPD (including chronic bronchitis and emphysema)	True	False	Not sure
a) In COPD there is usually gradual worsening over time			

b) More than 80% of COPD cases are caused by smoking			
c) Quitting smoking is the best way to prevent COPD from progressing			
d) Cough and phlegm are common in COPD			
e) People with COPD should exercise even if it makes them short of breath			
f) TOTAL			

Now I would like to ask you a few questions about your health history, including your smoking history and your level of physical activity. Please provide the response that most accurately reflects your current status.

Section 3: Smoking History

22. Are you a current smoker? Yes No; please go to **question 26**

23. Which of the following products do you smoke each day?

- Manufactured cigarettes
- Hand-rolled cigarettes
- Pipefuls of tobacco
- Other: _____

24. **In the last 6 months since your visit to the Airways Clinic**, have you tried to quit smoking? Yes No; please go to **question 26**

a) **If YES**, how many quit attempts had you made? _____

b) What have you used to help you try to quit?

- Nicotine replacement therapy (i.e. nicotine patch/gum/lozenge/inhaler)
- Prescription medication
- Counselling/smoking cessation program
- No help used
- Smokers Helpline
- Other: _____

25. If you are still a smoker, do you wish to quit smoking? Yes; go to question **26** No

a) **If NO**, what is a reason? _____

b) Do you think it is important that you quit smoking? Yes No

26. Are you currently exposed to second-hand smoke? Yes No; please go to **question 27**

a) **If YES:**

i) Home	ii) Work	iii) Public Places
Regularly	Regularly	Regularly
Occasionally	Occasionally	Occasionally
Not at all	Not at all	Not at all
Don't know	Don't know	Don't know

27. Are you an ex-smoker? Yes No; please go to **question 28**

a) **If YES**, did you quit after attending the Airways Clinic? Yes No; please go to **question 28**

b) How many quit attempts did you make? _____

c) **If YES**, what did you use to help you quit?

- Nicotine replacement therapy (i.e. nicotine patch/ gum/lozenge/inhaler)
- Prescription medication
- Counselling/smoking cessation program
- No help used
- Smokers Helpline
- Other: _____

Section 4: Physical Activity

28. Do you exercise? (including walking)? Yes No; please go to **question 31**

a) **If YES**, what do you do for exercise? _____

b) **If NO**, what limits your ability to exercise? _____

Please go to **question 31**

29. How often do you exercise? _____ times/week

30. About how much time do you exercise on average on each occasion?

- 1 to 15 minutes
- 16 to 30 minutes
- 31 to 60 minutes
- More than one hour
- Do not know

31. Do you perform specific breathing exercises? Yes No; please go to **question 33**

a) **If YES**, please list (e.g. tai-chi, yoga, diaphragm breathing, pursed lips breathing, etc.)

b) **If YES**, have you started doing them after visiting the Airways Clinic?

Yes No

32. How often do you perform these exercises? _____/week

Next I would like to ask you a few questions about your experience with community resources that offer information about COPD and smoking cessation.

Section 5: Community Resources

33. Are you aware of any community resources that offer advice/information/educational materials about COPD and smoking cessation? Yes No; please go to **question 35**

a) **If YES**, please specify these community resources:

- The Asthma Society of Canada
- The Lung Association

Version 3 – Respiratory Symptoms

ASTHMA SOCIETY OF CANADA - PLATE Post-Questionnaire

Version 3 - Please complete if you have been experiencing respiratory symptoms and/or any difficulty with your breathing, but have not been given a diagnosis of asthma or COPD by a physician, or if you are a smoker over the age of 40, or an ex-smoker who smoked for 20 years or longer.

Hello, my name is _____. Approximately 6 months ago, you gave consent and participated in an “Airways Clinic” presented by the Asthma Society of Canada in partnership with McMaster University. At that time, you filled out a questionnaire and had correspondence with a Certified Asthma Educator.

At that time, you indicated your willingness to participate in a 6 month follow-up questionnaire. This questionnaire is similar to the initial version, and will include a few additional questions related to your clinical history, your knowledge and understanding about asthma and or COPD, your smoking history, your level of physical activity and community resources in order to gain some insight into your participation at the Airways Clinic. It will take approximately 20 minutes to complete. You may skip any question you would rather not answer. All of your information will be kept confidential and no personal identifying information will be included in our reports. Participation in this questionnaire is voluntary. Are you willing to take part in this follow-up questionnaire? Is this a good time to speak with you or would you prefer we made an appointment for me to return this call?

Thank you, I will now begin the questionnaire.

At the end of the questionnaire: please note that you are welcome to contact us for more information about the study or about the Asthma Society of Canada at any time: Michelle Vine, Project Manager, PLATE Programme, 905-525-9140, Ext. 20438, Email: vinemm@mcmaster.ca.

Thank you very much for taking the time to complete this questionnaire!

First, I would like to ask you a few questions about *your* respiratory symptoms and related allergies. Please **provide** the response that most accurately reflects your current status.

Section 1: Clinical and Medication history

1. **In the last 6 months since your visit to the Airways Clinic**, have you had any respiratory/breathing problems/symptoms? Yes No; (zero symptoms) please go to **question 2**

a) **If YES**, please check the appropriate box below:

	1 - 2 days/week	3 - 5 days/week	Daily	1 - 2 days/month
Cough				
Chest Tightness				
Wheeze				
Difficulty Breathing				
Sputum Production				
Shortness of Breath				

2. a) Do you cough several times most days? Yes No
 b) Do you bring up phlegm or mucus most days? Yes No
 c) Do you get out of breath more easily than others your age? Yes No
 d) Are you older than 40 years? Yes No

3. **In the last 6 months since your visit to the Airways Clinic**, have you:

- a) Missed school or work because of your symptoms/breathing problems? Yes No
 b) Had your social activities (e.g. playing with kids, visiting friends, etc.) limited because of your symptoms/breathing problems? Yes No

- c) Had your physical activities limited by your respiratory symptoms/breathing problems? Yes No
 d) Had your regular/daily (e.g. walking, household chores, going upstairs, etc.) activities limited by your symptoms/breathing problems? Yes No

4. In the last 6 months since your visit to the Airways Clinic, have you:

- a) Gone to the Emergency Room because of your symptoms/breathing problems? Yes No
 b) Gone to a walk-in clinic because of your symptoms/breathing problems? Yes No
 c) Made an unscheduled visit to see your physician because of your symptoms/breathing problems? Yes No
 d) Been admitted to the hospital because of your breathing problems? Yes No

5. In the last 6 months since your visit to the Airways Clinic, have you:

- a) Been seen by a specialist because of your symptoms/breathing problems? Yes No
 b) Been referred to see a specialist because of your breathing problems? Yes No

6. Did you visit your physician since visiting the Airways Clinic?

- Yes; please go to **question 6b**; Do not have a physician; please go to **question 8**; No
 a) If **NO**, please tell us why (hard to get an appointment, no time, not a first priority, etc.):

Please go to **question 7**

- b) Did you discuss peak flow meter results obtained at the Airways Clinic with your physician? Yes; please go to **question 7** No
 c) If **NO**, please indicate reasons:

7. Overall, did you find your attendance at the Airways Clinic useful? Yes No; please go to **question 8**

a) If **YES**, what do you feel helped you the most?

- Education session with Certified Asthma Educator (CAE)
 Peak flow monitoring
 Materials provided
 Access to community resources
 Discussing with your physician your visit at the Airways Clinic
 Other: please specify _____

8.

a) In the last 6 months since your visit to the Airways Clinic, did your physician diagnose you with asthma? Yes; please go to **question 9** No; please go to **question 8c**

b) In the last 6 months since your visit to the Airways Clinic, did your physician diagnose you with COPD (including chronic bronchitis or emphysema)? Yes; please go to **question 9** No; please go to **question 8c**

c) If **NO**, are you still worried about having respiratory symptoms/breathing problems? Yes No

d) If **NO**, please specify why? _____

Please go to **question 10**

9. Since your visit to the Airways Clinic, did you receive an asthma action plan/COPD management plan?

- Yes No; please go to **question 10**
 a) If **YES**, who gave you the asthma action plan/COPD management plan?

- Family Physician
- Doctor’s Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Certified Asthma Educator/Respiratory Educator
- Asthma Clinic (other than the Airways Clinic)
- Asthma Society of Canada (website)
- Other: _____

- b) **If YES**, have you used the asthma action/COPD management plan? Yes No; please go to **question 10d**
- c) **If YES**, was it helpful: Yes; please go to **question 10** No
- d) **If NO**, please tell us why (e.g. do not see any value in having/using it, no time, etc.)

10. **In the last 6 months since your visit to the Airways Clinic**, have you been prescribed any medications (pills or inhalers) for your breathing problems? Yes No; please go to **question 12**

a) **If YES**, have you been prescribed any new inhalers for your symptoms/breathing problems? Yes No

11. **In the last 6 months since your visit to the Airways Clinic**, have you been prescribed a daily inhaler for your breathing problems? Yes No; please go to **question 13**

a) **If YES**, do you still take it daily? Yes No

12. Please tell me all the medications (inhalers, pills, and colour) you take for your breathing problems, how often you use them and tell me what your inhaler/medication does. If you are unsure of what your inhaler/medication does, please indicate so.

Name of Medication:	i)	ii)	iii)
Colour of Medication	i)	ii)	iii)
I use it:			
Regularly/Daily			
Occasionally (from time to time)			
Only as needed			
When I experience symptoms			
Never			
This inhaler is used for:			

13. When your inhaler technique was checked at the Airways Clinic, was your inhaler technique correct at the time? Yes; please go to **question 14** No

a) **If NO**, did the education session at the Airways Clinic provide you with enough knowledge to be able to use it

- correctly? Yes; please go to **question 14** No
- b) **If NO**, have you had your inhaler technique checked/reviewed by a health care professional since your visit to the Airways Clinic? Yes; please go to **question 14** No
- c) **If NO**, could you please give me a reason why?
-

14. Have you had a breathing test in the last 6 months? Yes; please go to **question 16** No

15. Did your physician send you for a breathing test **since your visit to the Airways Clinic**?
Yes No

16. **In the last 6 months since your visit to the Airways Clinic**, have you looked for helpful information/advice about your respiratory symptoms/breathing problems? Yes No; please go to **question 17**

a) **If YES**, please specify the source:

- Family Physician
- Doctor's Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Certified Asthma Educator/Respiratory Educator
- Asthma Clinic (other than the Airways Clinic)
- The Asthma Society of Canada
- The Lung Association
- Other: please specify _____

17. **In the last 6 months since your visit to the Airways Clinic**, have you received detailed education about your respiratory symptoms/breathing problems? Yes No; please go to **question 18**

a) **If YES**, from whom did you receive this information?

- Family Physician
- Doctor's Office (Specialist)
- Pharmacist
- Nurse/Nurse Practitioner
- Certified Asthma Educator/Respiratory Educator
- Asthma Clinic (Other than the Airways Clinic)
- The Asthma Society of Canada
- The Lung Association
- Other: (Please specify) _____

18. **Since your visit to the Airways Clinic**, how confident do you feel about controlling your symptoms/breathing problems?

- Not confident at all

- Somewhat confident
- Fairly confident
- Very confident

19. Has your confidence about controlling your symptoms/breathing problems changed since visiting the Airways Clinic? Yes No; please go to **question 20**

a) **If YES**, it has: increased decreased

20. Do you have allergies? Yes No; please go to **question 21**

If YES:

a) **In the last 6 months since your visit to the Airways Clinic**, did you speak to your physician about having an allergy skin test done? Yes No; please go to **question 21**

b) **If YES**, have you done or been referred to do the test? Yes No

Next, I would like to ask you a few questions about your health history, including your smoking history and your level of physical activity.

Section 2: Smoking History

21. Are you a current smoker? Yes No; please go to **question 25**

22. Which of the following products do you smoke each day?

- Manufactured cigarettes
- Hand-rolled cigarettes
- Pipefuls of tobacco
- Other: _____

23. **In the last 6 months since your visit to the Airways Clinic**, have you tried to quit smoking? Yes No; please go to **question 25**

a) **If YES**, how many quit attempts had you made? _____

b) What have you used to help you try to quit?

- Nicotine replacement therapy (i.e. nicotine patch/ gum/lozenge/inhaler)
- Prescription medication
- Counseling/smoking cessation program
- No help used
- Smokers Helpline
- Other: _____

24. If you are still a smoker, do you wish to quit smoking? Yes; go to **question 25** No

a) **If NO**, what is a reason? _____

b) Do you think it is important that you quit smoking? Yes No

25. Are you currently exposed to second-hand smoke? Yes No; please go to **question 26**

a) **If YES:**

i) Home	ii) Work	iii) Public Places
Regularly	Regularly	Regularly

Occasionally	Occasionally	Occasionally
Not at all	Not at all	Not at all
Don't know	Don't know	Don't know

26. Are you an ex-smoker? Yes No; please go to **question 28**
 a) **If YES**, did you quit after visiting the Airways Clinic? Yes No; please go to **question 28**

27. What did you use to help you quit when you were successful at quitting?

- Nicotine replacement therapy (i.e. nicotine patch/ gum/ lozenge/ inhaler)
- Prescription medication
- Counselling/smoking cessation program
- No help used
- Smokers Helpline
- Other: (please specify) _____

Section 3: Physical Activity

28. Do you exercise (including walking)? Yes No; please go to **question 30b**

a) **If YES**, what do you do for exercise? _____

b) **If NO**, what limits your ability to exercise? _____
 Please go to **question 33**

29. How often do you exercise? _____ times/ week

30. About how much time did you spend on average on each occasion?

- 1 to 15 minutes
- 16 to 30 minutes
- 31 to 60 minutes
- More than one hour
- Do not know

31. Do you perform breathing exercises? Yes No; please go to **question 33**

a) **If YES**, please specify which ones (e.g. tai-chi, yoga, diaphragmal breathing, pursed lips breathing, etc.): _____

b) **If YES**, have you started doing them after visiting the Airways Clinic? Yes No; please go to **question 33**

32. How often do you perform these exercises? _____/week

33. Do you feel you have enough information/resources to make healthy lifestyle choices?

Yes No; please go to **question 34**

a) **If YES**, what resource did you find to be most useful? _____

34. Do you think that smoking is related to developing Chronic Obstructive Pulmonary Disease (COPD), including chronic bronchitis and emphysema? Yes No

35. Do you think that having a cough, and/or shortness of breath could mean you have asthma? Yes No

Now I would like to ask you a few questions about your experience with community resources that offer information/advice about asthma, COPD, allergies and smoking cessation.

Section 4: Community Resources

36. Are you aware of any community resources that offer advice/information/educational materials about asthma, COPD, allergies and smoking cessation? Yes No; please go to **question 38**

a) **If YES**, please specify which resources are you aware of:

- The Asthma Society of Canada
- The Lung Association
- Asthma and Allergy Information Association
- Public Health
- Canadian Cancer Society/Smoker’s Help Line
- COPD Canada
- Others: (please specify) _____

37. Have you utilized any of these resources in the last 6 months? Yes No; please go to **question 38**

a) **If YES**, did you find them useful/helpful? Yes No

b) Have you utilized these resources as a direct result of attending the Airways Clinic? Yes No

38. Did you read/use educational materials that were provided to you at the Airways Clinic?

Yes No; please go to **question 39**

a) **If YES**, did you find them useful/helpful? Yes No; please go to **question 38c**

b) **If YES**, which materials did you find most useful? _____

Please go to question 39

c) **If NO**, how could the educational materials be improved upon to make them more helpful?

39. Since visiting the Airways Clinic, are you more aware of the role that healthy lifestyles play in respiratory health? Yes No

40. If the Airways Clinics were available across Canada, would you recommend them to family and friends?

Yes No

a) **If YES**, in your opinion, should clinics like the Airways Clinic be available across Canada?

Yes No

Do you have any additional comments about the Airways Clinic or your participation?

Thank you for taking the time to complete this questionnaire!

Date: _____

Location: _____

Appendix 16. Focus Group Interview Checklist



PLATE - Focus Group Checklist

“Understanding the Implications of a Community-Based Asthma/COPD Educational Initiative”

Date: _____ Time: _____

Location: _____

1. Opening

- Welcome - make introductions and thank participants for coming
- Review the purpose of the focus group and give details about the proceedings

FACILITATOR:

To begin, I would like to thank everyone for coming to this discussion tonight. All of you have been involved with our Airways Clinic over the past year. You have been to our clinic and have been given specific resources and information relating to asthma. You have also taken the peak flow test with our Certified Asthma Educator. All of you have also taken part in our telephone survey earlier this year. The investigators of this project would like to ask for your help again. We have asked you to come to here to take part in a group discussion because overall we value your input and feedback. The goal of this discussion is to help us clarify the results from the telephone survey. Your perceptions and knowledge are incredibly important to us and this discussion will help us to understand how you have managed your asthma over the past year and how you are continuing to manage your asthma in the future. Our discussion tonight will also help the investigators to evaluate the effectiveness of the Airways Clinic by letting them hear from you about your experiences.

- State confidentiality of the focus group and remind participants of their rights

FACILITATOR:

Your participation tonight is voluntary. It is not likely that there will be any harm or discomfort associated with this discussion. If at any point you would like to withdraw your participation in the discussion, you are free to do so without repercussion. The data that you provide tonight will not be used by the investigators unless upon withdrawing you indicate otherwise. If you feel that some of the questions are embarrassing or upsetting, you don't have to answer them if you are not comfortable doing so. You can skip any of the questions you do not wish to answer.

I would like to take some time now to talk about confidentiality. The purpose of this meeting is for you to tell us about your knowledge and experience with respiratory problems in addition to your

experience at the Airways Clinic. What you wish to share with us may appear as quotes in our reports. I am asking that you keep this discussion confidential. I am also requesting that what we learn about one another's stories today remain confidential, including the identities of those around us in this room. Having said this, having made these requests, you know that we cannot guarantee that the request will be honoured by everyone in this room. So I am asking you to make only those comments that you would be comfortable making in a public setting; and to refrain from comments that you would not say publicly. Are there any questions about this?

- Review consent form with participant
- Obtain 2 signed consent forms from each of the participants (participants keep one copy) before conducting the focus group
- Hand out Tim Horton's gift card

FACILITATOR:

Before we begin, I would like you to read over the consent form and ask me any questions you may have. If you are comfortable in proceeding with the discussion, please sign both copies and keep one for yourself.

2. Discussion

Purpose of Checklist

To guide the process of data collection around respondents' perceptions of asthma/COPD management as it relates to the PLATE demonstration programme.

<p>Introduction</p>	<p>How is everyone doing tonight?</p> <p>Did you have any trouble getting here?</p> <p>Is everyone comfortable?</p>	
<p>Themes</p>	<p>Question</p>	<p>Probes</p>
<p>Evaluation of Airways Clinic/ Effects & Effectiveness of Information</p>	<p>FACILITATOR: <i>Everyone here tonight has been to our Airways Clinic last year. When you came to the clinic you spent some one on one time with our Certified Asthma Educators who discussed asthma/COPD management, lifestyle issues and community resources. I would like for you to discuss your experience at the clinic and hear your thoughts regarding the information you received.</i></p> <p>1. What did you think about the Airways Clinics?</p> <p>2. Did you find the information that you received from the Airways Clinic useful?</p>	<p>2a) Which of the information from the clinic did you find most useful and why?</p> <p>2b) Which of the information from the clinic did you find least useful and</p>

	<p>3. Did you learn anything new from the clinic that you didn't already know?</p> <p>FACILITATOR: <i>At the Airways Clinic, you were also given a peak flow test. The peak flow test provided you information about you personal lung health and lung age. In the telephone survey, 75% of those who took the peak flow test found it to be helpful.</i></p> <p>4. Did you find the information from the peak flow monitoring procedure to be helpful?</p> <p>5. When you learned about your lung age, how did that affect you?</p> <p>6. Did the information from the peak flow test make you think about ways to effectively manage asthma/COPD in the future?</p> <p>FACILITATOR: <i>After undergoing the test, the Certified Asthma Educator had advised you to speak to your physician with respect to the test obtained at the clinic, but only a small number of people actually followed through.</i></p> <p>7. Why do you think this was the case for most people?</p> <p>FACILITATOR: <i>In the survey, people stated that the reasons why they didn't discuss the results with their physician were because they felt: (1) there was no reason to; (2) they didn't know what to do; (3) they believed that they didn't have a problem; or (4) it was not a priority to them.</i></p> <p>8. What do people mean when they say they have "no reasons to" discuss the results with their physician?</p> <p>9. What were the challenges or barriers that people faced when they said "they didn't know what to do"?</p> <p>10. What made people come to the conclusion that there</p>	<p>why?</p> <p>3a) If so, what?</p> <p>5) Did it change your knowledge or perception?</p> <p>6a) Did the results make you more aware of your lung's health?</p> <p>6b) Did the results make you more concerned about your asthma/COPD?</p> <p>6c) Did the results make you less concerned about your asthma/COPD?</p> <p>8a) Why wasn't there a reason?</p> <p>8b) Did the reason have to be negative outcome in order for them to discuss the results?</p> <p>9a) What could've stopped them from going to their physicians to discuss their results?</p>
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	<p>wasn't a problem?</p> <p>11. Why wasn't it a priority?</p>	<p>10a) Was this influenced by the peak flow test?</p> <p>10b) Do you think this perception was already in place even prior to their knowledge of the peak flow results?</p>
<p>Self-Management Strategies</p>	<p>1. In your opinion, what do you consider to be "acceptable asthma/COPD control" to be?</p> <p>2. What is "out of control asthma/COPD"?</p> <p>3. If someone told you they had asthma/COPD "under control", how would this be different from someone whose has asthma/COPD is "out of control"?</p> <p>4. Before receiving information from the Airways Clinic, did you use strategies for your asthma/ COPD?</p> <p>5. Were these strategies effective?</p> <p>6. Did these strategies improve your ability to perform daily activities?</p> <p>7. If you didn't use self-management strategies for your asthma/COPD before coming to the Airways Clinic, why was that the case?</p> <p>8. Did the information from the Airways Clinic provide you with any additional tools or strategies for managing your asthma/COPD?</p>	<p>1) What does this look like?</p> <p>3a) How would they behave differently?</p> <p>4a) For example, did you use medication?</p> <p>4b) Or did you adjust your medication on your own?</p> <p>4c) Did you exercise in door or out door?</p> <p>4d) What <i>were</i> the strategies you used to deal with the effects of asthma/COPD ?</p> <p>4e) How did you learn about these strategies?</p> <p>5a) How often did you employ these strategies?</p> <p>6a) Were they apart of your daily, weekly, or monthly routine?</p> <p>8a) What tools? What strategies?</p> <p>8b) If yes, what were they?</p> <p>8c) If the information did provide you with additional tools or strategies, did you incorporate them into your daily, weekly or monthly routine?</p> <p>8d) If the information didn't provide you</p>

	<p>9. How have you managed your asthma/COPD in the last year?</p> <p>10. Are there any challenges or barriers that you face overall in trying to deal with the effects of your asthma/COPD?</p> <p>FACILITATOR: <i>Despite understanding the role of medications, some participants with asthma/COPD do not take their anti-inflammatory medication regularly.</i></p> <p>11. What stops people from taking their prescribed treatment?</p>	<p>with any additional tools or strategies, was that because you found the information inappropriate or less useful?</p> <p>9a) Have you been successful at keeping your asthma/COPD under control in the past year?</p> <p>9b) Have you been successful at incorporating the appropriate strategies?</p> <p>9c) Have you been able to stick to a consistent routine?</p> <p>10) Do these challenges or barriers stop you from managing their asthma/COPD successfully?</p> <p>11a) Is it by choice?</p> <p>11b) Can you think of any other factor(s) that may influence a person's decision to stop taking their treatment?</p>
<p>Lifestyle/ Health and Wellness</p>	<p>FACILITATOR: <i>More than 50% of the people in the survey indicated that asthma/COPD limits their ability to exercise.</i></p> <p>1. In what ways does asthma/COPD limit a person's ability to exercise?</p> <p>2. For individuals you say that asthma/COPD doesn't affect their ability to exercise, how are they successful?</p> <p>3. Does asthma/COPD interfere with your daily activities?</p> <p>4. Have you attempted to normalize your physical</p>	<p>3a) How does asthma/COPD interfere with your daily activities?</p> <p>3b) If you believe that asthma/COPD doesn't interfere with your daily activities, can you explain why it doesn't?</p> <p>4a) How?</p>

	<p>activities and make sure you can be involved in any of them without limitations?</p> <p>FACILITATOR: <i>In the survey, 29% of the participants indicated that they were smokers, while 70% were not. 82% of current smokers had tried to quit at some point in their life. Of the 61 respondents who were not current smokers, 32% were ex-smokers. Research and the information provided at the Airways Clinics suggest that there is a link between smoking and asthma/COPD.</i></p> <p>5. Despite the implication of smoking on a person's health and the effects of smoking in relation to asthma/COPD, in your opinion, what are the main reasons why some people haven't quit smoking?</p> <p>6. In your opinion, what are the main reasons why people fail in their attempts to quit smoking?</p> <p>7. With regards to the current information on health and wellness that is available to the public, is there anything still missing?</p>	<p>4b) Did you have any help doing this? (e.g. people; agencies; resources)</p> <p>5) Do you think people are concerned about the implications of smoking on their health in relation to their asthma/COPD?</p>
<p>Future Directions/ Exploratory Inquiry</p>	<p>1. Is there anything you would personally like to know about respiratory chronic disease?</p> <p>2. Do you think there are enough resources and information for people with respiratory problems?</p> <p>FACILITATOR: <i>I would like to transition into the last section of this group discussion. We would like your feedback on the service and information you received from the Airways Clinic to help us and evaluate its effectiveness. Your feedback will help us to assess as well as improve on the type of service and the delivery of information in the future.</i></p> <p>3. If the chance arose, would you attend another Airways Clinic?</p> <p>4. Do you have any suggestions for future Airways Clinics?</p> <p>5. Can you recommend a good venue?</p> <p>6. Is there a better time that is more suitable or accommodating for future patrons?</p>	<p>3) If yes/no, why?</p> <p>4) i.e. type of service or delivery of service?</p>

	<p>7. Are there any additional resources or information that we can incorporate that may be useful?</p> <p>8. Are there any changes that would improve the service of future clinics?</p> <p>FACILITATOR: <i>Currently, there is legislation being created that extends the role of the pharmacists in asthma/COPD treatment that allows pharmacists to prescribe medications and also to provide patient education in the pharmacy.</i></p> <p>9. How would you feel about having a pharmacist deliver respiratory health education?</p> <p>10. Would it be more convenient for you to have a pharmacist provide and deliver respiratory health education at the pharmacy instead of obtaining information elsewhere (i.e. a health centre)?</p>	<p>9a) What would be the benefit(s) of this?</p> <p>9b) What would be the limitation(s) of this?</p>
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3. Closing

- Thank participants
- Address any questions, comments, and/or concerns

FACILITATOR:

Thank you very much for your time. Is there anything else you would like to add? If you would like to discuss anything else, please do not hesitate to ask me now. You can also contact with Dr. Susan Elliot, the principle investigator, at McMaster University with any questions you may have at a later time. You can find her phone number and email on your letter of information.

Appendix 17. PLATE Programme Timeline 2008-2009

Date	Task	Description
DECEMBER 2008	Update letter to Michelle Bishop at PHAC	One paragraph summary of project update, including timeline
DECEMBER 2008	Thank you letters	Thank you letters to be sent to clinic venues; drafted by Michelle
JANUARY	Mailing spirometry screening/ peak flow results to family physicians	Preparation and mail out of spirometry screening/peak flow results
JANUARY	Introduction to project	Meridene to provide RA introduction to project; delivery of survey data and timesheets
JANUARY-FEBRUARY	Organize data	Create coding scheme; create SPSS template for data entry; qualitative encounter data to be coded.
FEBRUARY	Data Entry	Enter survey data into SPSS Perform basic descriptive analyses of quantitative and qualitative data, and write up, i.e. frequencies, etc.
JANUARY-FEBRUARY	Draft questionnaire for Phase II	Draft questionnaire using Phase I survey as a guide
FEBRUARY	Steering Committee Meeting	To review Phase II questionnaire
Mid-FEBRUARY	Questionnaire to REB for review	Submit as an amendment to original proposal to McMaster REB for Phase II questionnaire
MARCH 1	Interim report to PLATE team	Update of project; focus on Phase II questionnaire, timeline and subsequent fall focus groups
MARCH 31	Finalize and send interim report to Michelle Bishop at PHAC	Final version
APRIL-JUNE	Phase II – 6 month follow-up questionnaires	Conduct telephone surveys (n=88)
JUNE	Organize data	Create coding scheme; create SPSS template for data entry
JUNE-JULY	Data Entry	Enter survey data into SPSS Perform basic descriptive analyses of quantitative data, and write up, i.e. frequencies, etc.
JULY	Draft focus group interview guide	Prepare interview guide for focus groups, set up sessions with participants
AUGUST	Focus group interview guide to REB for review	Submit as an amendment to proposal to McMaster REB
SEPTEMBER	Focus groups	Conduct focus group sessions (3-4) with survey participants

OCTOBER	Transcription	Transcription of 3-4 focus groups
OCTOBER	Organize focus group data	Create coding scheme for data; review draft theme set; complete coding
NOVEMBER	Draft final report	Preparation, inclusion of 3 data sets, for review by steering committee
DECEMBER	Finalize report	Send to Michelle Bishop at PHAC

Appendix 18. PLATE Community Awareness Plan

Key Objectives	Activities	Timetable	Staff Responsible
Goal #1: Increase awareness about the Asthma Society of Canada (ASC) services among health care providers			
1. Identify health care resources and health care providers working in the chosen community (Hamilton)	<ul style="list-style-type: none"> • Compile a list of local family physicians using the Ontario College of Family Physicians' (OCFP) website • Identify local hospitals and collect information about Family Outpatient Units and Emergency Departments including main contacts • Identify walk-in clinics located in the area • Identify main pharmacies located in the area • Find out if any group practices (FHTs, FHGs, CHCs) are located in the area • Identify Public Health Units located in the area 	April 2009	• Community outreach assistant
	<ul style="list-style-type: none"> • Connect with local representatives of pharmaceutical companies (GSK, AstraZeneca, Merck Frosst) and find out which physicians have a substantial number of clients with asthma/COPD in their practices 	April 2009	• Project Coordinator (CAE)
	<ul style="list-style-type: none"> • Review healthcare providers' programs and services reports prepared by the LHIN if necessary 	April 2009	• Project Manager
2. Inform local health care providers about educational materials and services offered by the ASC	<ul style="list-style-type: none"> • Prepare a promotional letter describing ASC services and resources 	April 2009	• Project Coordinator (CAE)
	<ul style="list-style-type: none"> • Revise brochures on healthy lifestyle choices and spirometry testing to be included in promotional packages 	April 2009	• Project Coordinator; • VP, Programming
	<ul style="list-style-type: none"> • Fax the promotional letter to the family physicians on the list 	May 2009	• Community outreach assistant;
	<ul style="list-style-type: none"> • Prepare a promotional package including a sample of the ASC educational materials, information about NAPA, and brochures on healthy lifestyle choices and spirometry 	April 2009	• Community outreach assistant; • Project Coordinator (CAE)
	<ul style="list-style-type: none"> • Send packages to the family physicians, walk-in clinics, hospitals, FHTs and FHGs located in the community 	May 2009	• Community outreach assistant
	<ul style="list-style-type: none"> • Provide local representatives of the pharmaceutical companies with a sample of ASC educational materials 	May 2009	• Project Coordinator (CAE)
	<ul style="list-style-type: none"> • Send packages to local Public Health Units 	May 2009	• Community outreach assistant

Key Objectives	Activities	Timetable	Staff Responsible
Goal #2: Increase awareness about the Asthma Society of Canada (ASC) services among local community agencies			
1. Identify local community resources in the chosen community (Hamilton)	<ul style="list-style-type: none"> Identify local community agencies (libraries, community centres, recreational facilities, daycares, churches) Identify local schools 	April 2009	<ul style="list-style-type: none"> Community outreach assistant
2. Inform local community agencies about services provided by the ASC	<ul style="list-style-type: none"> Prepare a promotional letter and customized promotional package to be sent out to the community agencies on the list 	April 2009	<ul style="list-style-type: none"> Project Coordinator; Community outreach assistant
	<ul style="list-style-type: none"> Send promotional packages to the identified community agencies 	May 2009	<ul style="list-style-type: none"> Community outreach assistant
	<ul style="list-style-type: none"> Prepare a letter to School Principals and Parent Advisory Councils 	April 2009	<ul style="list-style-type: none"> Project Coordinator (CAE)
	<ul style="list-style-type: none"> Compile a customized informational package to be sent out to the schools Distribute informational packages to the local schools 	April 2009 May - June 2009	<ul style="list-style-type: none"> Community outreach assistant Community outreach assistant
3. Promote the ASC services and resources among local community resources	<ul style="list-style-type: none"> Visit main schools in the area; explore an opportunity to organize presentations about asthma to students, parents, and teachers and include ASC materials in weekly packages that are sent out to parents 	May - June 2009	<ul style="list-style-type: none"> Project Coordinator Community outreach assistant
	<ul style="list-style-type: none"> Follow-up by phone/in person with main community organizations and offer additional support from the ASC 	June 2009	<ul style="list-style-type: none"> Community outreach assistant
Goal#3 Increase awareness about the Asthma Society of Canada (ASC) services among community residents and the general public			
1. Inform community residents and general public about educational services offered by the ASC	<ul style="list-style-type: none"> Connect with Canada Post and explore an opportunity to include ASC promotional materials in regular mail delivery 	April 2009	<ul style="list-style-type: none"> Project Manager
	<ul style="list-style-type: none"> Approach local media (radio and TV stations, local newspapers) and explore an opportunity to advertise services offered by the ASC 	April 2009	<ul style="list-style-type: none"> Project Manager
2. Improve knowledge of community residents about practicing healthy lifestyles	<ul style="list-style-type: none"> Provide community residents with information about healthy lifestyle choices through Canada Post and local media 	May - June 2009	<ul style="list-style-type: none"> Project Manager Project Coordinator

Appendix 19. Promotional/Informational Letter to Healthcare Providers



An information letter from the Asthma Society of Canada

Dear Physician:

The Asthma Society of Canada (ASC) would like to inform you about its educational services and materials available to your clients with asthma and associated allergies, and their caregivers. The ASC is a nationally registered, voluntary health organization with a 32-year reputation of providing health education services to consumers and health care professionals. The ASC offers evidence-based and age-appropriate asthma and allergy education, and disease management programs. Our vision at the ASC is to empower every child and adult with asthma in Canada to live an active and symptom-free life.

Recently, the ASC implemented the Partnership in Lung Age Testing and Education (PLATE) initiative supported by the Public Health Agency of Canada. Within the PLATE initiative, the ASC is providing outreach to family physicians and specialists in the Hamilton area in order to inform them of the ASC services and educational materials. The ASC offers a variety of educational services as follows:

- ✦ Printed educational materials including the Asthma Control Booklet Series that can be ordered free of charge or downloaded from the main ASC website www.asthma.ca
- ✦ The Asthma Info Line (1-866-787-4050 or info@asthma.ca), which is staffed by Certified Asthma Educators that can answer your clients asthma questions
- ✦ Educational websites: www.asthma.ca, www.asthmameds.ca and www.fourseasonsof asthma.ca
- ✦ Age-appropriate asthma information for children and teenagers at www.asthmakids.ca and www.airsquare.ca.
- ✦ On-line support and education for people with asthma and their caregivers through National Asthma Patient Alliance (NAPA) at napainfo@asthma.ca or www.asthma.ca/napa
- ✦ The new interactive e-learning module “**Taking Control of Your Asthma**” available at www.takingcontrolofyourasthma.ca

Please see enclosed a sample of the ASC educational materials that can be ordered using the attached order form. Please feel free to contact us at 1-866-487-4050 with any further questions about the described above services.

Best regards,

The ASC Team

Appendix 20. Promotional/Informational Letter to Community Pharmacies



An information letter from the Asthma Society of Canada

Dear Pharmacist:

The Asthma Society of Canada (ASC) is a nationally registered, voluntary health organization with a 32-year reputation of providing health education services to consumers and health care professionals. Our vision at the ASC is to empower every child and adult with asthma in Canada to live an active and symptom-free life.

Recently, the ASC implemented the Partnership in Lung Age Testing and Education (PLATE) initiative supported by the Public Health Agency of Canada. Within the PLATE initiative, the ASC is providing community outreach to pharmacists in the Hamilton area with information about its educational services. The ASC is pleased to inform you about the following educational services and materials available to your clients with asthma and associated allergies and their caregivers:

- ✦ Printed educational materials including the Asthma Control Booklet Series that can be ordered free of charge or downloaded from the main ASC website www.asthma.ca
- ✦ The Asthma Info Line 1-866-787-4050 or info@asthma.ca, staffed by Certified Asthma Educators that can answer your clients asthma questions
- ✦ Websites: www.asthma.ca www.asthmameds.ca www.fourseasonsofasthma.ca
- ✦ Age-appropriate asthma information for children and teenagers at www.asthmakids.ca and www.airsquare.ca.
- ✦ On-line support and education for people with asthma and their caregivers through National Asthma Patient Alliance (NAPA) at napainfo@asthma.ca or www.asthma.ca/napa
- ✦ The new interactive e-learning module “**Taking Control of Your Asthma**” available at www.takingcontrolofyourasthma.ca

Please see the enclosed sample of ASC educational materials that can be ordered at no cost. We have included a copy of the Asthma Patient Bill of Rights that can be posted at your pharmacy. Feel free to contact us with any further questions about the described above services.

Best regards,
The ASC Team

Appendix 21. Promotional/Informational Letter to Community Organizations



An information letter from the Asthma Society of Canada

Dear Community Partner:

The Asthma Society of Canada (ASC) is a nationally registered, voluntary health organization with a 32-year reputation of providing health education services to consumers and health care professionals. Our vision at the ASC is to empower every child and adult with asthma in Canada to live an active and symptom-free life. You have likely had some exposure to a client or visitor, or employee that has asthma and you may have some questions about educational services available for your organization and clients.

Recently, the ASC implemented the Partnership in Lung Age Testing and Education (PLATE) initiative supported by the Public Health Agency of Canada. Within the PLATE initiative, the ASC is providing a community outreach program in the Hamilton area with information about its educational services. The ASC is pleased to inform you about the following educational services and materials available to community organizations:

- ✦ Printed educational materials including the Asthma Control Booklet Series that can be ordered free of charge or downloaded from the main ASC website www.asthma.ca
- ✦ The Asthma Info Line 1-866-787-4050 or info@asthma.ca, staffed by Certified Asthma Educators that can answer your clients asthma questions
- ✦ Websites: www.asthma.ca www.asthmameds.ca www.fourseasonsof asthma.ca
- ✦ Age-appropriate asthma information for children and teenagers at www.asthmakids.ca and www.airsquare.ca.
- ✦ On-line support and education for people with asthma and their caregivers through National Asthma Patient Alliance (NAPA) at napainfo@asthma.ca or www.asthma.ca/napa
- ✦ The new interactive e-learning module “**Taking Control of Your Asthma**” available at www.takingcontrolofyourasthma.ca

Please see the enclosed sample of ASC educational materials that can be ordered at no cost. We have included a copy of the Asthma Patient Bill of Rights that can be posted at your Bulletin Board. Feel free to contact us with any further questions about the described above services.

Best regards,
The ASC Team

Appendix 22. Promotional/Informational Letter for Schools and Principals**An information letter from Asthma Society of Canada**

Dear School Principal:

Childhood asthma remains a serious health concern in Canada where more than 15% of children suffer from the disease. Further, asthma is the number one reason for children to visit emergency departments and miss school. There is a phenomenon known as the September Asthma Peak when students with asthma are at increased risk for an asthma flare-up. This occurs 17 days after the return to the classroom because of the common cold virus that runs rampant during this time of the year. All too often, students do not take the adequate measures to control their asthma before the start of the school year, and thus, are even more prompt to experience an asthma exacerbation.

The Asthma Society of Canada (ASC) would like to inform you about its educational services and materials available for your teachers to help them gain a better understanding about asthma and associated allergies. The ASC is a nationally registered, voluntary health organization with a 32-year reputation of providing health education services to consumers and health care professionals. The ASC offers evidence-based and age-appropriate asthma and allergy education, and school asthma management programs. Our vision at the ASC is to empower every child and adult with asthma in Canada to live an active and symptom-free life.

Recently, the ASC implemented the Partnership in Lung Age Testing and Education (PLATE) initiative supported by the Public Health Agency of Canada. Within the PLATE initiative, the ASC is providing outreach to all schools in the Hamilton area to inform them of the following ASC services and educational materials:

- ✦ The ASC worked with the Ontario Board of Education to develop curriculum based lesson plans for Grades 4 – 6. To view and download these lesson plans, please visit www.asthma.ca/adults/community/asthmaatschool.php#septpeak
- ✦ Asthma Basics 123 Resource kit for schools available at www.asthma.ca/adults/community/aas_teachers.php
- ✦ Printed educational materials including the Asthma Control Booklet Series that can be ordered free of charge or downloaded from the main ASC website www.asthma.ca to be displayed in the staff resources area and/or library

- ✧ The Asthma Info Line (1-866-787-4050 or info@asthma.ca) staffed by Certified Asthma Educators that can answer your asthma questions as they relate to managing asthma at schools
- ✧ Educational websites: www.asthma.ca, www.asthmameds.ca and www.fourseasonsofasthma.ca
- ✧ Age-appropriate asthma information for children and teenagers at www.asthmakids.ca and www.airsquare.ca.
- ✧ The new interactive e-learning module “***Taking Control of Your Asthma***” available at www.takingcontrolofyourasthma.ca

Please feel free to include the ASC contact information in your school newsletters as a source of asthma information/education for children and parents.

If you would like to receive a sample of the ASC educational materials or have any further questions about the described above services, please contact us at 1-866-787-4050 or info@asthma.ca.

Best regards,
The ASC Team

Appendix 23. Promotional/Informational Letter for Parent Advisory Councils**An information letter from Asthma Society of Canada**

Dear Members of the Parent Advisory Council:

Childhood asthma remains a serious health concern in Canada where more than 15% of children suffer from the disease. Further, asthma is the number one reason for children to visit emergency departments and miss school. There is a phenomenon known as the September Asthma Peak when students with asthma are at increased risk for an asthma flare-up. This occurs 17 days after the return to the classroom because of the common cold virus that runs rampant during this time of the year. All too often, students do not take the adequate measures to control their asthma before the start of the school year, and thus, are even more prompt to experience an asthma exacerbation.

The Asthma Society of Canada (ASC) would like to inform you about its educational services and materials available for children and their parents to help them gain a better understanding about asthma and associated allergies. The ASC is a nationally registered, voluntary health organization with a 32-year reputation of providing health education services to consumers and health care professionals. Our vision at the ASC is to empower every child and adult with asthma in Canada to live an active and symptom-free life.

Recently, the ASC implemented the Partnership in Lung Age Testing and Education (PLATE) initiative supported by the Public Health Agency of Canada. Within the PLATE initiative, the ASC is providing outreach to all schools in the Hamilton area to inform them of the following ASC services and educational materials:

- ✦ The ASC worked with the Ontario Board of Education to develop curriculum based lesson plans for Grades 4 – 6. To view and download these lesson plans, please visit www.asthma.ca/adults/community/asthmaatschool.php#septpeak
- ✦ Asthma Basics 123 Resource kit for schools available at www.asthma.ca/adults/community/aas_teachers.php
- ✦ Printed educational materials including the Asthma Control Booklet Series that can be ordered free of charge or downloaded from the main ASC website www.asthma.ca to be displayed in the staff resources area and/or library
- ✦ The Asthma Info Line (1-866-787-4050 or info@asthma.ca) staffed by Certified Asthma Educators that can answer your asthma questions as they relate to managing asthma at schools

- ✧ Educational websites: www.asthma.ca, www.asthmameds.ca and www.fourseasonsofasthma.ca
- ✧ Age-appropriate asthma information for children and teenagers at www.asthmakids.ca and www.airsquare.ca.
- ✧ The new interactive e-learning module “***Taking Control of Your Asthma***” available at www.takingcontrolofyourasthma.ca

If you would like to receive a sample of the ASC educational materials or have any further questions about the described above services, please feel free to contact us at 1-866-787-4050 or info@asthma.ca.

Best regards,
The ASC Team

Appendix 24. Distribution List/Strategies Used to Promote ASC Materials

Table 1. Distribution of the ASC promotional materials to health care providers and resources by category and distribution method

Healthcare settings	Number on the list	ASC Promotional package	ASC Resource Kit		
			By mail	In person by PLATE staff	By ASC contacts
Healthcare providers					
Family Physicians (total n=355)					
Solo practices			42	29	
FHT	1 (132 physicians)				132
FHG	1 (17 physicians)				17
Community Health Centers	3		3		
Walk In Clinics	7			18	
Medical Practice Groups	4			20	
Total			45	67	149
Specialists					
Respirologists	27	27			
Pediatricians working in Pediatric Clinics	91		7		
Pediatricians in solo practices			5		
Allergists	7				7
Total		27	12	0	7
Healthcare resources					
Hospitals (n=4)					
Emergency Departments	4		4		
Outpatient Pharmacies	4		4		

Outpatient clinics	4		4		
Urgent Care Centre	1		1		
Pulmonary Function Labs	3		3		
Asthma Clinics	2		2		
Total			18		
Community pharmacies (n=117)					
Chain stores and independently owned pharmacies	77		77	6	
Retail pharmacies	17		17		
Dell Pharmacy					17
Total			94	6	17
Other healthcare settings					
Public Health Department	1		4		
WSIB	1		1		
CCAC	1		1		
Student Health Centres	3		5		
Pharmaceutical reps	5			3	
Total			11	3	
Total Distribution by delivery method		27	180	76	173
Grand Total					456

Table 2. Distribution of the ASC promotional materials to community organizations by category

Community organization	Number on the list	ASC promotional letter (via e-mail)	ASC promotional package (by mail)	ASC resource kit	
				By mail	By ASC contacts
Schools (n=175)					
School Principals	175		175		
Parent Advisory Councils	175		175		
Community organizations					
Community Centres	14				14
Hamilton YMCA	2				6
Libraries	14			14	
Daycares	50			12	
Ontario Early Years Centres	48				48
Retirement Residences	14			14	
Minor Sports Associations	6	6			
Total		6	350	40	68
Local businesses					
ArcelorMittal Dofasco	1	Provided information and educational materials on asthma, associated allergies and COPD to 176 booth visitors at the Employee Health Fair.			
Grand Total		640			

Appendix 25. OCFP June 2009 “Letter to the Members”**Information about the ASC services in the “Letter to the Members”, the Ontario College of Family Physicians, June 2009**

The Ontario College of Family Physicians “News Brief”, June 2009

The ASC asked us to let you know about some of their services for your patients. The ASC offers a variety of printed educational materials including the Asthma Control Booklet Series that can be ordered free of charge. Patients can also speak with a Certified Asthma Educator by contacting 1-866-787-4050 or by emailing info@asthma.ca .

Kids can email www.asthmakids.ca and teenagers www.airsquare.ca .

A copy of the article as it appeared in the publication is included in the hard copy of the report.

Appendix 26. September/October 2009 Edition of “Pharmacy Connection”**Information about the ASC services and the PLATE programme in the “Pharmacy Connection”, the Ontario College of Pharmacists, September/October 2009**

The Ontario College of Pharmacists “Pharmacy Connection”, September/October 2009
PLATE initiative -Partnership in Lung Age Testing and Education (PLATE) Programme

The Asthma Society of Canada (ASC) is a nationally registered, voluntary health organization with a 32-year reputation of providing health education services to consumers and health care professionals. The Society offers evidence-based and age-appropriate asthma and allergy education, and disease management programs. The Asthma Society is dedicated to empowering every child and adult with asthma in Canada to live an active and symptom-free life. Recently, the ASC has implemented the Partnership in Lung Age Testing and Education (PLATE) initiative supported by the Public Health Agency of Canada. The PLATE Programme is a demonstration project designed to examine the effectiveness of a population based approach to the management of asthma, associated allergies and COPD. Community-based “Airways Clinics” were organized in various community settings namely pharmacies, malls, libraries, Community Centers in two cities (Toronto and Hamilton) and offered screening spirometry testing and respiratory education to community residents and the general public. Within the PLATE initiative, the ASC is outreaching to pharmacists practicing in Ontario and would like to inform them about the ASC services and educational materials. The ASC offers a variety of printed educational materials including the Asthma Control Booklet Series that can be ordered free of charge. Clients with asthma and associated allergies can be also referred to speak to a Certified Asthma Educator by contacting the Asthma Info Line by phone at 1-866-787-4050 or e-mail at info@asthma.ca. As well, they can learn more about asthma and allergies by visiting the ASC websites (www.asthma.ca; www.asthmameds.ca and www.fourseasonsofasthma.ca). Additionally, the ASC offers age-appropriate asthma education to kids (www.asthmakids.ca) and teenagers (www.airsquare.ca) with asthma. Moreover, people with asthma can share their experiences and participate in advocacy initiatives towards better asthma care by joining National Asthma Patient Alliance (NAPA).

A copy of the article as it appeared in the publication is included in the hard copy of the report.

Appendix 27. September 2009 Edition of “Healthy Kids” Newsletter

Public Health School Asthma Program, Healthy Kids Newsletter, Fall 2009

(Available at www.hamilton.ca/teacher)

The September Asthma Peak

Canadian researchers have found that the “back-to-school” period in the fall brings a dramatic increase in hospitalizations for children with asthma. The increase starts when children return to school and/or childcare setting and reaches its peak in late September/early October. This period is referred to as the *September Asthma Peak*.

What makes September worse than other months?

1. Many parents reduce or even stop the use of their child’s asthma medicine over the summer months because they don’t feel its necessary when their child is feeling good and isn’t experiencing any symptoms.
2. Children returning to school/childcare settings face greater exposure to several common asthma triggers:
 - Viral infections like the common cold;
 - Inside buildings: dust, dust mites, mould, chalk dust and strong smells (paint, crayons, markers, glue, cleaners);
 - Outside: ragweed (at its peak in early September), pollen, cut grass, leaves and fumes from idling cars & buses

Any of these things can trigger asthma symptoms. Asthma symptoms include: shortness of breath, tightness in the chest, coughing and wheezing. If these symptoms aren’t properly managed they can lead to severe breathing problems, resulting in a 911 call and a trip to the hospital emergency room.

What can parents do?

- Think about your child’s asthma over the summer and plan ahead for their return to school and/or the childcare setting.
- Know what triggers your child’s asthma. (e.g. colds, ragweed, pollen, strong smells)
- Talk to your child’s doctor about which medicine to use at what time to prevent asthma symptoms from starting. Medicines that prevent symptoms from starting are called **controllers**. If your child has been prescribed a controller medication, ensure they continue to take it over the summer even if they feel well and have no asthma symptoms. **Controllers** are slow-acting medicines that must be taken regularly to prevent breathing problems from starting. They are important for maintaining long-term control over asthma. They are NOT emergency medicines. It is very important that if prescribed, controllers are taken regularly, throughout the year, including the summer months, to avoid asthma attacks.

- Be sure your child has a **reliever medication** (usually blue) nearby at all times. It is best if reliever medicines are kept with your child. However, this is not always possible due to age and/or maturity. In these cases ensure your childcare provider or classroom teacher has at least one reliever inhaler accessible for your child to use when needed. **Relievers** are fast-acting (5-10 minutes), taken only when symptoms start or before exercise, if needed. Relievers will not prevent an asthma attack from starting, but they will open the airways quickly when an asthma attack occurs, allowing breathing to improve.
- Teach your child proper hand-washing and encourage them to do it often. Colds are a common asthma trigger in children and the #1 way to reduce the spread of cold germs is by frequent and proper hand-washing.

It is *very important* that your child's asthma be properly controlled year-round. When asthma is well controlled, your child should not experience any symptoms; miss any school or childcare days even during the *September Asthma Peak!*

For more information on the September Asthma Peak contact the Asthma Society of Canada's Asthma Support Line at 1-866-787-4050 or visit www.asthma.ca or info@asthma.ca

Submitted by Elizabeth Conti, Public Health School Asthma Coordinator. Adapted with permission from the Asthma Society of Canada.

A copy of the article as it appeared in the publication is included in the hard copy of the report.

Appendix 28. Winter 2010 Edition of the City of Hamilton’s “Child Care Connection” Newsletter**“Child Care Connection” Newsletter, City of Hamilton, Winter 2010****Cold Air and Asthma**

Cold air is a common trigger for many children with asthma. When cold air enters the lungs it can cause the airways to tighten. This may lead to asthma symptoms such as coughing, wheezing, difficulty breathing and chest tightness. For children with exercise-induced asthma, being active in cold air can be a double whammy. The good news is that the effects of cold air and exercising outdoors in winter can be anticipated and prevented with proper planning. Children with asthma should not have to avoid playing outside in the winter.

Tips for your child:

- ✓ Ensure your child’s asthma is well-controlled at all times. Follow an asthma action plan and talk to your doctor.
- ✓ Ensure your child has a fast-acting reliever medication with them at all times and that they know how and when to use it.
- ✓ If cold air or exercise is a known trigger for your child encourage them to take their reliever medication, if prescribed, 10–15 minutes before they are exposed to cold air and/or they start exercising.
- ✓ Check weather conditions before they go out. Be sure they are dressed for the weather. A scarf that covers their nose and mouth is recommended.
- ✓ Encourage your child to breathe through their nose when outside.
- ✓ Listen for extreme cold alerts. Discourage any strenuous outdoor activities during those times.

For more information about asthma visit:

The Lung Association www.on.lung.ca
The Asthma Society of Canada www.asthma.ca

Appendix 29. Sample Advertisement on the ASC Asthma and Allergy Friendly Certification Program.

asthma & allergy friendly™

Certification Program

CERTIFIED

asthma & allergy friendly™

Meets
Certification
Standards





Asthma Society
of Canada

Asthma.ca™

When you purchase allergen reduction and environmental control products for your family and home, you can now look for our international Certification Mark.

Products that carry the **asthma & allergy friendly™** Certification Mark have been scientifically tested by **Allergy Standards Limited** and approved by the **Asthma Society of Canada**. They have been certified to help reduce exposure to allergens and irritants, provide increased environmental control and withstand routine cleaning and care guidelines according to international standards.

A plan for reducing exposure to allergens and irritants in the home requires a multi-faceted approach. A wide variety of products have been internationally certified **asthma & allergy friendly™** including:

- Bedding
- Vacuum Cleaners
- Air Cleaners
- Toys
- Washing Machines
- Flooring

Look for products displaying this mark or visit: www.asthmaandallergyfriendly.ca
 For more information about asthma and allergies, please call the
 Asthma Society of Canada at 1-866-787-4050 or visit: www.asthma.ca

Appendix 30. Traffic Ads – Canadian Traffic Network

The following are the three different messages sent through the Canadian Traffic Network regarding the September Asthma Peak:

Most child asthma emergencies happen halfway through September every year. Called the September Peak, it is predictable and therefore avoidable. Learn how to manage your child's asthma at Asthma dot ca TODAY!

Do you have to replace your blue asthma puffer more than twice a year? This may mean your asthma isn't well controlled. Learn how to control your asthma better at taking control of your asthma dot CA today!

Get regular updates and important facts about your child's asthma or yours. Become an active advocate for improved asthma care in Canada. Join the National Asthma Patient Alliance at asthma dot CA slash NAPA today.

Appendix 31. Follow-Up Survey Faxed to Physicians**A Follow-up Letter from the Asthma Society of Canada**

Dear Physician:

Recently, the Asthma Society of Canada (ASC) faxed your office an information letter outlining the ASC educational services and materials available to your patients with asthma and associated allergies. Additionally, your office may have received a folder from the ASC that included a sample of the educational materials.

In following-up, the ASC is seeking your feedback on the following questions to help us assess the value of the educational material.

- | | | |
|---|-----|----|
| 1. Did you receive the faxed information letter? | Yes | No |
| 2. Did you receive an information package? | Yes | No |
| 3. If you received the information package: | | |
| a. Did you review the material? | Yes | No |
| b. Did you feel the information would benefit your patients? | Yes | No |
| 4. Would you use the ASC educational material in your office? | Yes | No |

Thank you for taking the time to provide your feedback.

Please fax your response to the ASC office at 416-787-5807

Please contact the ASC at 1-866-787-4050 with any questions you have or to receive your free copies of our educational material.

Best regards,

The ASC Team

9 References:

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- ²⁶ White, R., Walker, P., Roberts, S., Kalisky, S., White, P. (2006). "Bristol COPD knowledge questionnaire (BCKQ): testing what we teach patients about COPD." *Chronic Respiratory Disease* 3, 123-131.
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- ³⁰ Asthma and Allergy Friendly Certification Program. <http://www.asthmaandallergyfriendly.ca>
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