

Air Quality Health Index awareness and promotion to
Canadians with chronic respiratory disease



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To:

Environment Canada

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Executive Summary

Air pollution affects thousands of Canadians annually, including people with chronic respiratory disease and can cause exacerbations of respiratory diseases and increased respiratory infections. Studies from Canada and around the world also demonstrated that poor air quality is associated with increases in asthma exacerbations resulting in increased hospitalizations. Due to this link between air pollution and respiratory health, the main purpose of the project was to focus on reaching out to individuals with chronic respiratory conditions, particularly asthma and/or associated allergies to provide them with information about the Air Quality Health Index (AQHI) and how to use it as part of their overall chronic disease management plan. The project was also designed to assess the current level of awareness about the AQHI amongst people affected by chronic respiratory disease and identify what type of AQHI awareness materials, tools, and outreach activities would be relevant to people affected by the disease. As well, the project promoted the AQHI to members of the National Asthma Patient Alliance (NAPA) and other people affected by chronic respiratory disease by incorporating AQHI-related information and materials in existing programs and services available through the Asthma Society of Canada (ASC), namely the Asthma Ambassadors program, the Asthma and Allergy Education and Support Program, the ASC educational websites, ASC community-based health fairs and events, and NAPA activities and communication.

The project activities were implemented under two main components and results from both components were compiled to generate the findings of this report. **First**, the ASC engaged individuals with asthma and/or associated allergies as well as the general public in a baseline assessment survey to assess their awareness of the AQHI and identify what tools, educational materials, and resources should be developed to deliver the AQHI and related health messages to this target audience. The on-line survey was available in two formats: the full-length survey and a short online poll. A total of **86** participants completed the full survey with **66** participants answering the website poll. Based on the survey results, participants with chronic respiratory disease pay greater attention to air pollution levels and would like to receive active reminders about the local AQHI reading as opposed to checking the index by themselves. They gave the index a high ranking and strongly believed that the use of the AQHI could be beneficial as part of their overall disease management, especially if the information about the index is combined with weather and pollen forecasts. Participants also indicated that the health messages attached to the index were well understood and provided clear explanations and advice on what to do on bad air quality days. However, most of the participants felt that the concept of self-calibration was not clear enough and require more explanation and/education to supplement it.

Second, the AQHI-related information and resources about environmentally friendly programs were further promoted and incorporated into the existing ASC programs and initiatives. The ASC provided support and education about the AQHI through the Asthma and Allergy Education and Support program to individuals contacting the ASC's support line via a national toll-free number and/or email. The ASC distributed educational materials and resources on the AQHI through the ASC's regular mailings to partners, organizations and individuals who requested information on asthma and/or associated allergies. The ASC also conducted community-based outreach and educational activities,

where information and materials on the AQHI were disseminated at various community events (*e.g.*, health fairs, healthy living events, information displays during various conferences). The ASC also delivered presentations on the AQHI and environmentally friendly programs by conducting in-person workshops and webinar sessions. In addition, the ASC used every opportunity to talk about the AQHI and materials available from the ASC while delivering presentations to healthcare professionals and people working in the related areas. The ASC also used its current educational websites to promote the AQHI and available educational materials and resources as well as developing an AQHI webpage, which is accessible from the main ASC website. The ASC further distributed information on the AQHI and environmentally friendly programs to the NAPA members using multiple communication channels (*e.g.*, the ASC e-newsletter, e-mail updates, social media networks such as Twitter and Facebook, NAPA blog and Discussion Board). Furthermore, the index was promoted through the Asthma Today Widget, a desktop tool which offers information about the local weather, provides a link to the AQHI readings, and has updates from the ASC on latest news in the asthma and allergy field. Further, the ASC launched the Asthma Ambassadors program and trained patient volunteers to become representatives tasked with delivering AQHI information and educational materials within their respective networks. Finally, a number of media opportunities (*e.g.*, newspapers, TV and radio interviews) were utilized to promote the AQHI educational materials and resources to a broader audience.

Experiences gained during implementation of the AQHI outreach and promotional activities as well as the main finding from the online survey support **five** key recommendations outlining potential approaches to be implemented to further promote the AQHI to people affected by asthma and/or associated allergies. **Firstly**, focus should be placed on developing and/or implementing special promotional and educational activities to outreach to this target audience to make them aware about the index. Outreach and promotional initiatives should differ from approaches used for the general public taking into consideration the needs of this target group as well as their perspectives on health messages and risk categories associated with the index. People with chronic respiratory disease also need to be educated on how to self-identify the AQHI number based on both symptoms occurring and the AQHI readings and make the index part of their overall chronic disease management plan. Continuing to promote the index through disease organizations working in respiratory health as well as encouraging health care providers to educate people with chronic respiratory disease about the AQHI should be considered as potential approaches and appropriate tools and resources needs to be developed as required. **Secondly**, the AQHI needs to be actively delivered on a regular basis (all year around) to this target audience using a variety of tools and strategies such as active reminders either via e-mail alerts and/or SMS messaging. The information about the index also needs to be available in combination with other information that is necessary to plan outdoor activities. The AQHI readings should be integrated with weather and pollen forecasts and/or delivered as part of combination tools (*e.g.*, the “Asthma Today” Widget) which also provide additional information that could be relevant to chronic disease sufferers (*e.g.*, research and program updates, community-based events and health fairs, *etc.*). **Thirdly**, the AQHI promotional and awareness initiatives and/or resources should include information about environmentally friendly programs available provincially and/or regionally. With

increased knowledge on how the AQHI could be used and applied to personal health, residents will be encouraged to be more environmentally friendly and make environmentally conscious choices aimed to help reduce air pollution, ultimately resulting in keeping the AQHI at lower levels as much as possible. Along with the development of appropriate AQHI educational materials and resources, a **fourth** recommendation is to continue using community-based promotional activities and peer-to-peer support and education programs (*e.g.*, Asthma Ambassadors) as an effective approach to inform people about the index. **Finally**, it is important to further educate people with chronic respiratory disease about the concept of self-calibration and how it should be applied to the management of their chronic disease. More research is needed to gain a better understanding of how the concept of self-calibration needs to be communicated and/or explained to people affected by chronic respiratory disease as well as the general public. The development of additional materials on self-calibration should be taken into consideration based on the findings of this project and results of the future research.

I. Introduction

Air pollution affects thousands of Canadians annually and can cause lost productivity, pain, and suffering including lost activity days as well as exacerbations of respiratory diseases, increased respiratory infections, and hospitalizations of respiratory and cardiovascular disease sufferers.^{1,2} Furthermore, studies from Canada and around the world have demonstrated that respirable particulate matter has clearly been associated with increases in exacerbations in asthma resulting in increased hospitalizations.^{3,4,5,6}

The Asthma Society of Canada (ASC) is committed to helping adults and children with asthma and associated allergies to breathe easier and recognizes the vital importance of clean air and a healthy environment by providing them with up-to-date information about asthma and its management, and empowering them to strive for optimal asthma control through a better understanding of asthma as a chronic disease and education about connections between environmental factors and respiratory health.

The range of programs and services provided by the ASC are geared towards people with asthma and associated allergies, and their families through direct outreach. This is done by working with community-based healthcare professionals, including Certified Asthma/Respiratory Educators (CAE/CREs), physicians, pharmacists, and public healthcare professionals. All of these groups form a target group for the Air Quality Health Index (AQHI) promotion which is aligned with Environment Canada's key public audiences for the (AQHI) according to the National Air Quality Health Index and Forecast program logic model.⁷ The CAEs/CREs are highly experienced in the areas of public and community outreach, education, and patient advocacy and provide counselling services online, through a toll-free telephone line, health fairs, and educational sessions at various organizations (*e.g.*, schools, senior homes, colleges, *etc.*).

Additionally, the ASC has a set of printed materials to provide the most cost-effective and convenient access to asthma-related information available for all Canadians at no cost, designed especially for those with asthma and associated allergies. These materials are also available to health care providers and sent weekly to various healthcare settings across Canada.

The ASC promotes educational materials and resources through the National Asthma Patient Alliance (NAPA), a membership-based advocacy group of the ASC. NAPA is a grassroots patient group of volunteers from across the country, whose aim is to increase patient awareness about how to achieve optimal asthma control, address communication and advocacy needs of this chronic disease, and build a network of patient volunteers dedicated to improving asthma care and education in Canada. Its mission is to ensure that each and every one of the 3 million Canadians diagnosed with asthma has the support and resources he/she needs to enjoy a high quality of life. Asthma Ambassadors is a peer-to-peer support and education program of the NAPA. Similar to CAE/CREs and NAPA members, Asthma Ambassadors encourage individuals with asthma and/or associated allergies to learn more about the disease and various management strategies. They also are in a good position to deliver information about the AQHI and inform people about how to make responsible environmental choices

aimed to help reduce air pollution by providing them with appropriate information and resources that are available provincially and/or regionally.

In summary, the ASC has the ability and resources to educate patients with chronic respiratory illnesses and their caregivers to regularly obtain and use the AQHI and related information, and empower them to make the AQHI part of chronic disease management. Information about the AQHI and how to use it can be delivered by CAE/CREs, NAPA members, and Asthma Ambassadors as well as included in overall education about proper treatment and disease management as the key components to living well with chronic diseases like asthma and/or associated allergies.

II. Project Description

1. Project Background

Air quality can have a profound effect on respiratory health, especially in people with chronic respiratory disease. Therefore, information on the AQHI should be taken into consideration as part of educating and teaching individuals about proper asthma management.

On average, we breathe in 21,000 times a day. That is about 14,400 liters of inhaled air each day for a moderately active adult. Clean air and a healthy environment are, therefore, of vital importance when it comes to our health. It is estimated that over 5,000 deaths in Canada arise every year due to air pollution.⁸ Individuals who are at greatest risk are young children, the elderly, and those who have existing chronic respiratory and cardiovascular conditions.

The project under description was focused on reaching out to individuals with chronic respiratory conditions, particularly asthma and/or associated allergies to provide them with information about the AQHI and how to use it. The project was also aimed to assess the current level of awareness about the AQHI amongst people affected by chronic respiratory disease and identify what type of AQHI awareness materials, tools, and outreaching activities would be relevant to people with chronic respiratory disease. Additionally, the project was designed to promote the AQHI to people with chronic respiratory disease by incorporating AQHI-related information and materials in existing ASC programs and services (*e.g.*, the Asthma Ambassadors program, the Asthma and Allergy Education and Support Program, the NAPA, *etc.*)

2. Project Objectives

Overall, the aim of the project was to complete ground work that would inform implementation of future awareness initiatives related to promoting the AQHI and distributing AQHI materials and resources to individuals with asthma and/or associated allergies. Further, the project was aimed to educate people affected by chronic respiratory disease about environmentally friendly programs available in their places of residents and empower them to make environmentally conscious choices. The project was also design to help identify broader priorities for action in regards to developing AQHI awareness materials and promotional activities that would help deliver the AQHI-related information to individuals with chronic respiratory disease by making it more relevant and appropriate

for those individuals. As well, the project was designed to identify possible ways to promote the AQHI by incorporating AQHI awareness activities and materials in all existing ASC programs and services.

The key objectives of the implemented project titled “*Air Quality Health Index awareness and promotion to Canadians with respiratory chronic disease*” are summarized below:

- To assess the current level of awareness about the AQHI amongst people with chronic respiratory conditions particularly asthma and associated allergies and their willingness to use the index readings and forecast
- To identify preferred methods of providing and disseminating the AQHI information (*e.g.*, a method of communication, materials content and format, *etc.*) to Canadians affected by chronic respiratory disease
- To develop awareness AQHI materials/tools for people with chronic respiratory disease, in particular asthma and associated allergies based on their identified preferences and needs by tailoring the existing AQHI communication tools as well as developing new ones as required
- To promote the AQHI by informing NAPA members and ASC customers about the index and its benefits and incorporating AQHI promotional materials and activities into existing ASC programming and services
- To encourage NAPA members and ASC customers to make responsible environmental choices aimed to help reduce air pollution by providing them with appropriate information and resources that are available provincially and/or regionally

3. Project Overview

The National AQHI and Forecast Program Logic Model⁷ identifies people with existing respiratory conditions as one of the most sensitive populations that need to be aware of the air quality forecast in their regions. Therefore, people with chronic respiratory disease and their caregivers need to be educated on how to obtain and the use the AQHI regularly as part of their proper disease management plan.

There is a lack of information and knowledge about the awareness levels amongst people with asthma and/or associated allergies, their caregivers, and family members as well as NAPA members regarding the AQHI. The potential for NAPA members and Asthma Ambassadors to learn about the index, include it in their regular disease self-management activities and inform other people about it as part of their ASC volunteering work is substantial. There is also a great potential to promote the AQHI to the existing ASC clients (*e.g.*, individuals and health care professionals requesting information, counselling and educational materials from the ASC) by incorporating the information about the index into educational toolkits, packages, and outreach programming.

The project activities were implemented under two main components. First, the ASC engaged individuals with asthma and/or associated allergies in a baseline assessment survey to assess their

awareness of the AQHI and identify what tools, educational materials, and resources should be developed to deliver the AQHI and its health messages to this target audience. Second, the AQHI use and information about environmentally friendly programs were further promoted and incorporated into existing ASC programming (*e.g.*, Asthma Ambassadors program, Asthma and Allergy Education and Support program, *etc.*). Both project components are described below in further detail.

III. Project Activities

In order to meet the aforementioned project goals and objectives, the various promotional and outreach activities were conducted and are presented below under two main project components: (1) Completion of the baseline needs assessment by conducting an on-line survey and reviewing the existing AQHI promotional and educational materials, and (2) Promotion of the AQHI and associated health messages through a variety of ASC programs and initiatives (*e.g.*, the Asthma Ambassadors program, Asthma and Allergy Education and Support program, ASC websites and educational materials, the September Asthma Peak Campaign, *etc.*).

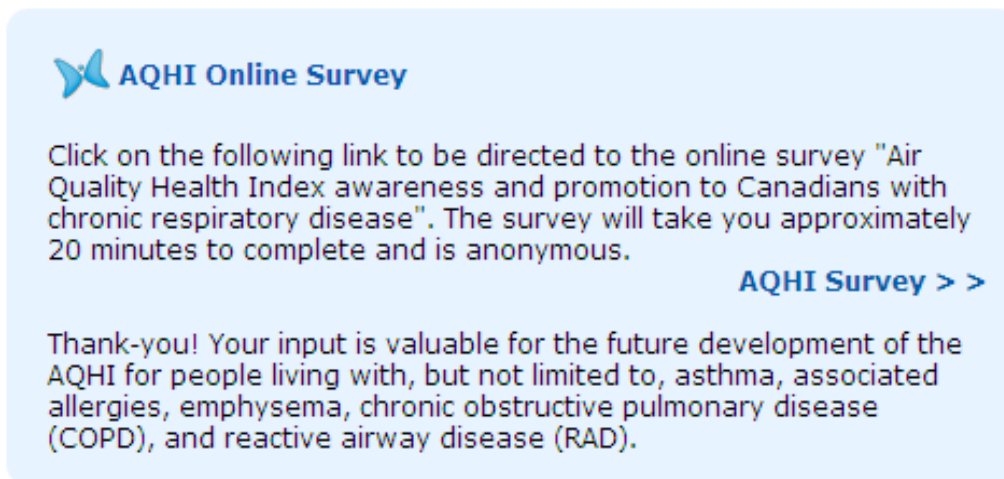
1. The Baseline needs assessment

1.1. Development of the online survey

The purpose of the on-line survey was to assess awareness on the AQHI amongst individuals with asthma and associated allergies including members of the general public. As well, the survey was developed to determine the preferred methods of receiving AQHI-related information (*e.g.*, format, content, *etc.*), and the willingness to use the AQHI forecast. Special questions were included to gather opinions about various communication tools and outreach strategies (*e.g.*, Smart phone apps, widgets, *etc.*) that could be relevant to people with chronic respiratory disease, in particular asthma and/or associated allergies. Taking into consideration the fact that the AQHI forecast was not available nationally, survey participants were informed about it and referred to areas where the AQHI was available in order to provide their opinion about the index. Further, questions were asked to understand whether the AQHI information could encourage individuals to make environmentally conscious lifestyle choices.

The on-line survey was available in two formats: the full-length survey (*Appendix 1*) and a short online poll. The survey was developed in consultation with Environment Canada and Health Canada. Both surveys were available in English and accessible through the ASC main website, the AQHI webpage (*Figure 1* below), NAPA Discussion Board and NAPA blog from April to November 2010. The survey was further sent out to NAPA members via a variety of communications means such as the ASC e-newsletter, NAPAlerts (breaking news e-mail to NAPA members), as well as social media outlets (*e.g.*, Facebook, Twitter). The survey was also sent to the ASC partners such as Clean Air Champions and the Ontario Lung Association and distributed further through their respective networks. A total of **86** participants completed the full survey and an additional **66** participants answered the website poll.

Figure 1: Screenshot of the AQHI online survey as seen on the ASC's AQHI webpage



1.2. Key findings from the online survey

The detailed survey results are presented in the Supplement to this report. In brief, the majority of survey participants (**81.2%**) were female with **40%** of them being between the ages 20 and 29. The majority of participants (**91.8%**) indicated that they lived in the urban area. The largest group of survey participants (**69%**) were from Ontario, followed by Quebec (11.9%), and then British Columbia (8.3%). The majority of respondents believed that they lived near or in location where there is a problem with air pollution and most common source mentioned was transportation exhaust. Of the **47%** of participants with respiratory conditions, **92.1%** indicated that they had asthma while **68%** had associated allergies.

The majority of participants (**87.5%**) believe that air pollution affects them and their well-being. When further asked if they paid attention to air pollution levels, the majority of participants either currently pay attention (**45.5%**) or had paid attention in the past (**31.2%**) while more than a third did not and are currently not attentive to the air pollution levels (**36.4%**).

Overall, half of the respondents (**54.5%**) had heard of the AQHI before completing the survey, while **45.5%** had not heard about it. The number of participants who were aware of the index was slightly higher in the disease group compared to the non-disease group (**58.3%** vs. **51.2%**, respectively). According to the website poll results, 52 website visitors (**88%**) were aware of the AQHI. Overall, almost all respondents (**93.1%**) found the AQHI to be easy to understand and use. When respondents were further asked how they would rate the AQHI based on its overall usefulness, **70.9%** reported it to be 'Excellent' and 'Very good'. The majority of survey participants (**75.7%**) chose the numbered scale as the most useful AQHI feature followed by the risk category, the colour coding (**48.6%**) and the health messages (selected by **55.7%**, **48.6%**, and **45.7%**, respectively).

1.3. Review and assessment of the existing AQHI educational and promotional materials

An online search was completed for AQHI materials and resources that were applicable to the project and could be used to promote the index to the target population. A master resource list was prepared in order to compile relevant AQHI educational and promotional materials. The master list includes the material/website name as well as a short description of the resource (*Appendix 2*). In addition, available printed AQHI promotional materials and resources (*e.g.*, booklets, brochures, *etc.*) were organized in a master resource binder.

The master resource lists and all materials in the master resource binder were systemically reviewed by the ASC's CAE/CREs in order to identify their relevance to people affected by chronic respiratory disease and their potential use in asthma educational activities. Feedback was also obtained on whether or not there was a need to develop new AQHI materials and resources for individuals with chronic respiratory disease. Additionally, AQHI educational materials and resources in both the resource list and the binder were reviewed by one of the NAPA Executive Committee members to make recommendations on which materials would be more relevant to NAPA members from a patient perspective.

A summary of recommendations received from the ASC's CAE/CREs as well as the NAPA Executive Committee member is presented in *Appendix 3*. Based on the review conducted, several promotional and educational materials were selected for their future use with ASC customers suffering with asthma and/or associated allergies to inform them about the AQHI and its importance in overall proper asthma management. Further, based on the recommendations provided, a number of promotional materials were chosen to be incorporated in the existing asthma educational programs offered by the ASC.

Both the ASC's CAE/CREs and the NAPA Executive Committee member also made recommendations on the type of materials that need to be developed in addition to the existing materials to meet the needs of individuals with chronic respiratory disease. The CAE/CREs advised to continue developing the Asthma Today Widget as well as to design a promotional card related to the AQHI that could be included in educational packages and/or toolkits and distributed during educational and community events.

According to the provided recommendations and the results of the online survey, the ASC has developed the Asthma Today Widget (www.asthma.ca/widget) as well as designed a promo card to inform potential customers about the widget and programs available through the NAPA. As well, based on the results of the on-line survey and preferences of receiving the AQHI-related information via Internet, the ASC developed an AQHI webpage (www.asthma.ca/aqhi) which is accessible from the main ASC website. These tools are described in detail later in the report.

2. Promotion of the AQHI and associated health messages through a variety of ASC programs and initiatives

The AQHI materials and resources were incorporated in the following ASC programs and initiatives:

- ✦ Asthma and Allergy Education and Support Program
- ✦ Distribution of educational materials and resources
- ✦ Community-based outreach and educational activities
- ✦ ASC educational websites including the development of the AQHI webpage
- ✦ National Asthma Patient Alliance (NAPA) including AQHI promotion through social networks (e.g., Facebook, Twitter, etc.)
- ✦ Asthma Today Widget
- ✦ Asthma Ambassadors Program
- ✦ Media activities (e.g., newspapers, TV interviews, etc.)

The statistics presented below refer to the project period from February 01, 2010 to December 31, 2010. The ASC continues promoting the AQHI and health messages by incorporating the information about the index in all existing programs and initiatives.

2.1. Asthma and Allergy Education and Support program

The Asthma and Allergy Education and Support Program, previously known as the Asthma Help Line offers support and education about asthma and respiratory allergies in English and French to people who contact to the ASC's support line via a national toll-free number and/or email. The program is staffed by CAE/CREs who are well positioned and uniquely qualified to disseminate valuable information on air quality via phone interviews and/or e-mail communication. The ASC's CAE/CREs were provided with additional information about the AQHI during a webinar session in order to train them in delivering appropriate messages on air pollution and respiratory health. They also completed the online course on air quality and the AQHI offered by the University of British Columbia. Further, a special message (*Appendix 4*) was developed and added to the phone and e-mail scripts in order to promote the index during each inquiry as appropriate.

The message was added to the scripts as of July 14, 2010 and used by the CAE/CREs to provide information on the AQHI during each educational inquiry. Since August 2010, **260** phone and email inquiries were made and individuals who contacted the Asthma and Allergy Education and Support Program were provided with information about the index and how to use it.

2.2. Distribution of the ASC educational materials and resources

The ASC sends out weekly a number of printed promotional and educational materials to various healthcare settings across Canada, namely Asthma Education clinics, pharmacies, schools, physician

offices, specialists, *etc.* The ASC educational materials are also being sent to individuals who requested them and/or contacted the Asthma and Allergy Education and Support Program.

During the period from January to December 2010, the ASC sent out **332** packages (229 to health care professionals and 95 to individuals affected by asthma) with educational materials and resources across Canada. All of these packages included AQHI-related information and materials.

A special informational letter was developed to organizations (*Appendix 5*) and individuals (*Appendix 6*) and included in the weekly packages effective July 06, 2010 to inform health care professionals and individuals about the AQHI and AQHI-related resources available through the ASC.

Additionally, the ASC informed its main partners about the AQHI resources available from the ASC by conducting a special mailing and sending them an educational package with an informational letter enclosed (*Appendix 7*). In July 2010, **12** special packages were sent out to the ASC main partners such as the Ontario Physical Health education Association (OPHEA), ParticipAction, the Public Health School Asthma project, Life Network, *etc.* The ASC also conducted an outreach campaign to Asthma Education Clinics across Canada to inform CAE/CREs working in these clinics about the newly established ASC services related to the AQHI promotion. In total, **38** packages containing the AQHI information and resources were sent out to Asthma Education Clinics mainly in the province of Ontario. Information about the “20/20 the way to Clean Air” campaign, with the free 20/20 planner was added to the packages sent out to partners and Asthma Education Clinics in Toronto and the Greater Toronto Area (GTA).

In September 2010, during the September Asthma Peak campaign, the ASC conducted a special mail-out of information kits that included educational materials related to the September Asthma Peak as well as AQHI brochures and information. The ASC sent out **145** packages to Asthma Education Clinics and hospitals across Canada with the following provincial distribution: **30** packages each mailed out to British Columbia, Alberta, and Ontario (outside the GTA); **17** to New Brunswick; **14** to Nova Scotia; **10** to Manitoba; **6** to Saskatchewan; **3** each to Quebec and Newfoundland, and **2** to Prince Edward Island. The packages also included an AQHI tear-off sheet developed by Environment Canada and Health Canada as well as a postcard promoting the online course on “Outdoor Air Quality and Health and the AQHI” offered by the University of British Columbia (UBC).

2.3. Community-based outreach and educational activities

During the implementation of the project, the ASC had an opportunity to participate in various community events such as health fairs, healthy living events, and information displays during various conferences. The ASC distributed the AQHI-related resources at these events as well as informed their participants about the index. Standard materials for distribution included but were not limited to the following: the AQHI tear-off sheet, the “Asthma Today” Widget postcard, the Toronto Public Health AQHI brochure (for events taking place in Toronto and the GTA), and the UBC AQHI online course postcard. *Table 1* below presents the number of AQHI resources distributed along with the name and the date of the event. All of these events were staffed by CAE/CREs and/or NAPA members.

Table 1: Distribution of the AQHI resource at health fairs and community outreach events

Name of event	Date of event	Number of encounters/the AQHI resources distributed
Bell Canada , Health and Safety Booth	May 03 and 06, 2010	5
Seja's Run, Toronto French School	May 08, 2010	5
Anaphylaxis Canada , Annual Conference	May 8, 2010	10
The Hospital for Sick Children Information Display and cafeteria information area	September 07, 2010	11
American Express Canada Healthy Living Even	September 14-15, 2010	200
Rexdale Community Health Centre , Annual Community Health Day Event	September 15, 2010	16
LiUNA Local 183 , Organizational Health Fair	September 18, 2010	30
"Breathe a Little Laughter", Fundraising Event for the Scotiabank Toronto Waterfront Marathon	September 22, 2010	10
Registered Nurses' Association of Ontario , Chronic Disease Management Resource Fair at the Annual Institute	September 29, 2010	45
The Hospital for Sick Children , Emergency Room Conference	October 15-16, 2010	50
Physical Education Canada , 2010 National Conference	October 21-23, 2010	200
Toronto Reference Library , Health and Wellness Fair	November 08, 2010	50
Baycrest , Staff Wellness Fair	November 17-18, 2010	40
Total:		672

The ASC also conducted educational workshops on asthma and resources available from the ASC that were delivered in-person or using webinar technology. Each educational session conducted contained information about the AQHI and related materials available from various sources including the ASC. The list of educational workshops and/or webinars conducted in 2010 is presented in *Table 2*. Some examples include: the ASC presentation (*Appendix 8*) during webinar sessions for coaches, physical

education teachers, and public health care professionals organized by the OPHEA and the webinar for the American Express employees conducted on World No Tobacco Day.

Table 2: Promoting the AQHI at educational workshops and webinars

Name of event	Date of event	Number of participants
American express webinar	May 26, 2010	10
OPHEA webinars	May 27 and 31, 2010 June 09, 2010	48
Elementary Teachers’ Federation of Ontario , Asthma Education Session at the annual leadership training conference	September 30- October 01, 2010	100
COSTI Immigrant Services , Asthma Education Session	October 06, 2010	25
Total:		183

In addition, the ASC used every opportunity to talk about the AQHI and materials available from the ASC while delivering presentations to healthcare professionals and people working in related areas. For example, the ASC delivered a presentation about its services (*Appendix 9*) including the AQHI website and the Asthma Today Widget at the TELUS Health Space booth during the e-Health conference in Vancouver (May 2010). The ASC had also presented information about the AQHI at meetings of various Committees (refer to *Table 3* below for details).

Table 3: Promoting the AQHI at Conferences and professional meetings

Name of event	Date of event	Number of participants
TELUS Health Space booth , e-Health Conference	June 01, 2010	30
Lunch and learn for CAE/CREs , “Addressing Adrenal Suppression with Inhaled Steroids program”	June 15, 2010	10
OPHEA , Partner Network Advisory Committee meetings	July 12, 2010 August 16, 2010	15
AQHI Health Messages Review Workshop , Toronto	October 20, 2010	120
Primary Care Asthma Project Advisory Group meeting, the Ministry of Health and Long-Term	October 21, 2010	6

Ontario Lung Association, internal staff communication	November 01, 2010	8
Total:		189

2.4. Asthma Education Websites

Information about the AQHI and health messages has been available at the ASC website (www.asthma.ca) and accessible through multiple entry points. An AQHI webpage (www.asthma.ca/aqhi) was designed and launched by the ASC on May 19, 2010. This webpage (*Appendix 10*) offered information on the AQHI, related health messages as well as provided four interactive options to submit feedback about the index such as the AQHI online survey, the AQHI quick poll, the AQHI discussion blog, and a link to the AQHI audio blog. Since May 2010, some information on the AQHI has been offered on the main ASC webpage (www.asthma.ca) and provides a link to additional pages where further information on the AQHI could be found. Furthermore, the ASC's NAPA webpage (www.asthma.ca/napa), which provides information for all the potential and current NAPA members, also has a link to access the AQHI webpage.

From May until December 2010, there were **2,227** visits to the AQHI website, with **1,204** being unique visitors. As well, during this period, **2,414** visits were made to the NAPA website, with **1,710** being unique visitors. The main webpage had **46,154** visitors, with **34,172** being unique visitors; however, a number on how many visitors actually clicked on the link to the AQHI webpage is unknown.

In addition, the ASC provided information on the AQHI to be posted in physicians office through an innovative display system iMD Health.⁹ iMD Health ® is an interactive health terminal which uses a touch-activated interface to visually display regions of the human body, medical conditions, diseases, illnesses, medical resources, and treatment options. The health terminals are located directly in the physicians' examination rooms and driven by the physician or healthcare provider. The ASC displays various materials on asthma through the iMD system including the promo card on the AQHI and the "Asthma Today" Widget. Currently, the system is available in **130** physicians' offices mostly in the provinces of Ontario and Nova Scotia.

2.5. National Asthma Patient Alliance (NAPA)

The National Asthma Patient Alliance (NAPA) was initiated in Hamilton, Ontario in 2007. The NAPA members provide peer to peer support and education to each other and individuals living with asthma and/or associated allergies. The first activity of this group was the development of the Asthma Patient Bill of Rights to enable people affected by asthma to understand their responsibility in regards to proper asthma manage and empower them to lead a happy, healthy life. In 2010, approximately 2,500 Asthma Patient Bill of Rights posters and 10,000 brochures were distributed by NAPA members. The group has its own website (www.asthma.ca/napa) and stay connected by using a variety of communications means such as NAPA Discussion board, NAPA blog, and NAPA and/or ASC Facebook pages. As well, NAPA members receive regular communication from the ASC via monthly

e-newsletters, regular e-mail updates called NAPAlerts, and tweets. They can also subscribe to receive news from the asthma filed and the ASC by downloading the “Asthma Today” Widget.

During the project implementation, the ASC employed two main strategies to inform NAPA members about the AQHI and how to incorporate its use in overall chronic disease management. The AQHI was communicated through “push” strategy where the AQHI information was sent out using multiple communication channels (*e.g.*, the e-newsletter, NAPAlerts, Twitter updates, *etc.*). At the same time, information about the index was able at multiple points of contact (“pull” strategy) for NAPA members and other ASC customers (*e.g.*, NAPA blog and Discussion Board postings, the “Asthma Today” Widget). Examples of both outreach approaches are presented below.

- **ASC e-newsletters**

ASC e-newsletters are distributed to all NAPA members and other subscribers monthly. Information on the AQHI was included in the ASC e-newsletter in May, June, July, and August, 2010. In May 2010, the e-newsletter (*Appendix 11*) also promoted the “Asthma Today” Widget which also included information on the AQHI. The June e-newsletter (*Appendix 12*) provided information on the AQHI as well as reminded subscribers to complete the AQHI survey available on the AQHI website. Similarly, a reminder about the AQHI online survey was included in the July 2010 e-newsletter (*Appendix 13*). Additionally, in the August 2010 e-newsletter, a piece about the UBC online course “Air quality and health and the AQHI” was included (*Appendix 14*).

- **NAPAlerts**

NAPAlerts are e-mail updates that display breaking news or emerging issues of concern to the members of the NAPA. In July 2010, a NAPAlert was sent to all NAPA members regarding the AQHI and how to use it. The second NAPAlert was issued in September (*Appendix 15*) to remind NAPA members about the index as well as provide information about the 20/20 the Way to Clean Air Campaign for NAPA members residing in Toronto and the GTA area.

- **Twitter Updates**

The ASC oversees and frequently provides updates through short “tweets” of 140 characters or less using the Twitter social networking tool. During the duration of the project, **27** tweets about the AQHI and related topics were sent out to all **510** ASC Twitter followers (*Appendix 16*).

- **NAPA Discussion Board**

Information about the AQHI and air quality related issues was posted on the NAPA Discussion Board. A screenshot of the Discussion Board is show in *Figure 2*.

Figure 2: The Screenshot of the NAPA Discussion Board



- **NAPA Blog postings**

The AQHI and the link between air quality and health was promoted on the NAPA blogging site through a number of stories starting on July 04, 2010. These included information on current research studies on how air quality affects human health as well as general postings about the AQHI and the ASC’s involvement in promoting the tool. Further, there were blogging stories about the “Asthma Today Widget”, the AQHI and Smog Days, and the ASC interview about AQHI for Global TV (*Appendix 17*).

- **Facebook Updates**

Information on the AQHI was also promoted through social networks mainly by updating the ASC and NAPA Facebook pages. The ASC maintains and frequently updates a fan page on the Facebook social networking website. A link to the AQHI-related e-newsletters was posted on the ASC’s Facebook pages to further disseminate information about the index, and the new AQHI webpage on the ASC website. Facebook updates were also used to promote the AQHI online survey and invite potential participants to complete it. Please refer to *Appendix 18* for the postings on the AQHI and air quality issues at the ASC’s Facebook fan page.

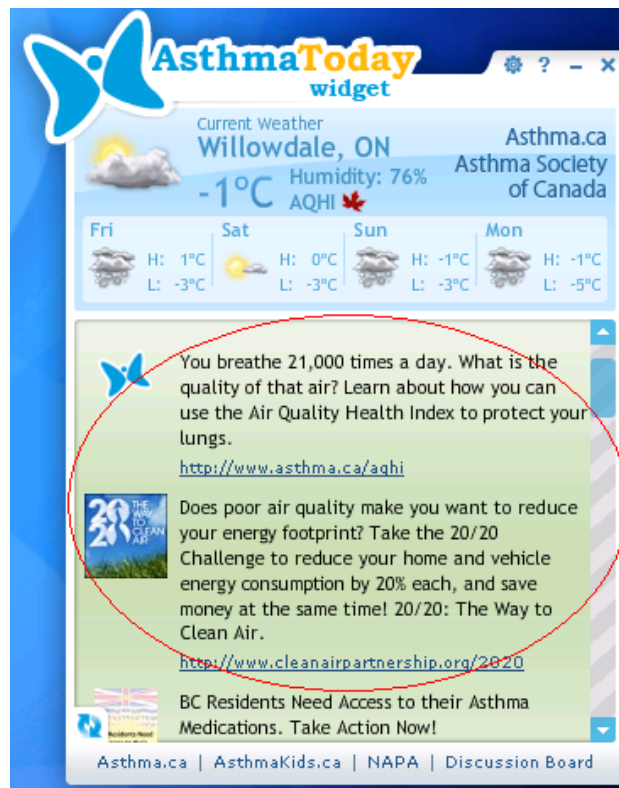
2.6. “Asthma Today” Widget

The “Asthma Today” Widget (www.asthma.ca/widget) is a useful, interactive tool designed by the ASC for people living with asthma and associated allergies to stay informed on important issues related to asthma as well as have access to information needed to plan their outdoor activities. The “Asthma Today” Widget was specifically developed to promote the AQHI for people living with asthma and/or associated allergies.

The “Asthma Today” Widget is a desktop tool and can be easily downloaded free of charge to any computer to gain information on the AQHI, local weather forecasts, and the latest news updates from the ASC and its partners on various programs, educational materials, and research in the field of asthma and/or allergies. The widget has an “AQHI” icon on the top which links individuals to the “Environment Canada” webpage to check their local AQHI where applicable. The Widget was launched in May 2010 and since then has been downloaded **991** times.

Since the launch of the tool, information about the AQHI and air quality-related issues have been regularly portrayed in the Widget. AQHI-related stories appeared on the Widget as demonstrated in *Figure 3* below. In total, air-quality related postings were clicked **400** times during the project implementation.

Figure 3: The Screenshot of the “Asthma Today” Widget with the posting about the 20/20 the Way to Clean Air Campaign.



Since its launch in May 2010 (refer to *Appendix 19* for the news release about the Widget), the ASC has been actively promoting the use of the “Asthma Today” Widget amongst its partners and customers. It has been available for the download on the ASC’s main website making website visitors aware of the tool existence.

An information letter (*Appendix 20*) about the tool was prepared and mailed out to the main ASC contacts on May 4, 2010. This letter introduced the tool, additionally providing information about the AQHI. The ASC also developed key messages to facilitate further promotion of the Widget by the ASC main partners. Since the “Asthma Today” Widget launch, it has been featured at the ASC’s partners’ websites such as AllerGen NCE Inc. (*Appendix 21*), Anaphylaxis Canada (*Appendix 22*), and TELUS Health Space blog (*Appendix 23*). The “Asthma Today: Widget was promoted through the ASC partnership with Bullfrog Power. In July 2010, a public information pitch on air pollution and the AQHI was developed (*Appendix 24*) and included a reference to the “Asthma Today” Widget.

The “Asthma Today” Widget was further promoted by designing and distributing a Widget promo card (*Appendix 25*). The card was included with the regular mail outs of asthma materials to various healthcare settings, organizations, and individuals across Canada.

In addition, the “Asthma Today” Widget was promoted in the June 2010 edition of Hospital News, Canada’s health-care newspaper (*Appendix 26*). The article introduced the desktop tool and explained how it could be used to gain access to the AQHI along with the local weather forecast and relative humidity information. It also mentioned that the tool provided access to important updates from the ASC on new programs, materials, research, and advocacy initiatives.

Overall, The Widget has been well received by NAPA members and ASC customers. According to the online survey results, overall, **31, 9%** of survey participants would like to use the Widget to check the AQHI readings. This number is even higher amongst survey participants affected by asthma as **40%** of participants in this group would like to access AQHI readings through the Widget.

2.7. Asthma Ambassadors program

The ASC launched the new Asthma Ambassadors program¹⁰ in November 2010. Asthma Ambassadors is a peer-to-peer support and education program that helps deliver asthma education to Canadians living with asthma and/or associated allergies by offering support from a friend or family member. Asthma Ambassadors are provided with training and asthma information, but are not trained to dispense medical advice. Asthma Ambassadors spend their normal amount of time with friends, family, co-workers, teammates, and more; and if the topic of asthma arises, they are equipped with information about asthma management, services available from the ASC, and other resources including the AQHI.

The overall training of Asthma Ambassadors was done using the “Taking Control of Your Asthma” e-learning module¹¹, which was initially developed by the ASC, AllerGen NCE Inc. and the Division of e-learning innovation, McMaster University. The e-learning module consists of animations and

illustrations that help people understand how to take control of their asthma. The module walks through information on asthma, its causes, triggers, and how to control and manage it. For the purpose of the Asthma Ambassadors program, the module was significantly revised to include the information on the AQHI and how to use it. The ASC worked closely with the Division of e-learning innovation, McMaster University to make sure that potential Asthma Ambassadors receive appropriate education and training before delivering main messages related to proper asthma management and control. A pre/post-knowledge assessment test was also added to assess program participants' knowledge on asthma before and after completing the module.

Additional training webinars on the AQHI were also developed to train Asthma Ambassadors in delivering AQHI-related information and messages as well as to inform them about local environmentally-friendly programs and resources. Before distributing AQHI-related information to their respective networks, Asthma Ambassadors go through a webinar session with a great emphasis on air quality and health, along with information on how to access provincial and regional environmental programs that they can use to make responsible environmental choices aimed to help reduce local air pollution. Depending on their province of residence, they will receive a provincially catered webinar containing information on air pollution sources found in their province as well as an introduction to a number of environmental programs they can participate in to make a difference on local air quality (refer to *Appendix 27* for the links to the pre-recorded webinar sessions). Currently, webinars are available for Asthma Ambassadors living in Toronto and the GTA, Ontario, New Brunswick, and Nova Scotia.

After completion of their training, Asthma Ambassadors are provided with a “train-the-trainer” information kit, and a number of “education kits” to distribute among family, friends, co-workers, classmates, and others they interacted with on a regular basis. In addition to asthma educational materials, both kits contain a list of local environmentally friendly programs (*Appendix 28*). With the knowledge received, Asthma Ambassadors are able to provide accurate asthma messaging and general information on respiratory if these topics are raised in everyday conversation such as discussions about news events, air quality, smoking, and/or exercise.

Initially, the program was pre-tested in Toronto and the GTA in September-October 2010 where **13** Asthma Ambassadors were recruited and trained to promote the AQHI. They received “train the trainer” kits for their reference and educational kits to be distributed. The program was then piloted in the provinces of Ontario, New Brunswick and Nova Scotia.

Since the launch of the Asthma Ambassadors program, the ASC has trained a total of **46** Asthma Ambassadors across Canada, with **23** of them being in the province of Ontario. The provincial breakdown of the Asthma Ambassadors recruited to date is presented in *Table 4* below.

Table 4: Provincial breakdown of trained Asthma Ambassadors, December 2010

Provinces	Number of Asthma Ambassadors Trained
British Columbia	6
Alberta	3
Saskatchewan	2
Manitoba	4
Ontario	23
Quebec	1
New Brunswick	4
Nova Scotia	1
Prince Edward Island	0
Newfoundland	1
Nunavut	1
North West Territories	0
Yukon	0
Total	46

A total of **357** educational packages were distributed by Asthma Ambassadors since the launch of the program. Additionally, **200** educational kits were disseminated by Asthma Ambassadors to Asthma Education Clinics and physicians' offices in the province of New Brunswick and **31** packages to the members of the New Brunswick/Prince Edward Island Respiratory Educators Group. Asthma Ambassadors also provided information about the AQHI and environmentally friendly programs that are available in the region by participating in health fairs and other community-based events (described previously in the report).

2.8. Media interviews

During the summer months of 2010, spokespeople from the ASC completed a number of media interviews relating to poor air quality during the warmer months and the importance of the AQHI. The interviews were conducted and available through the following media outlets: the Weather Network, City TV, and the CBC Radio One (refer to *Appendix 29* for the list of the media interviews conducted by the ASC).

IV. Project Results and Recommendations

The project was very instrumental in reaching out to people affected by chronic respiratory disease and providing them and the general public with detailed information about the AQHI and how to use it. Based on the results of the online survey and lessons learned during implementation of the AQHI promotional and outreach activities, the ASC gained a better understanding about appropriate approaches in promoting the AQHI to this target audience, their preferences on educational materials

and resources as well as sources of the AQHI readings and related information. The results of the online survey including qualitative comments obtained from NAPA members are analyzed in detail and presented in the Supplement for this report. The key lessons learned during the AQHI promotion during implementation of the ASC programs and activities (*e.g.*, what worked, what did not work, what should be recommended for future initiatives) can be summarized below as follows:

- ✦ Outreach and promotional strategies should take into consideration the target audience (people affected by chronic respiratory disease) and differ from the strategies used to promote the index to the general public.
- ✦ When promoting the AQHI to people with chronic respiratory disease, educational messages should focus on risk categories and how to use health messages.
- ✦ Active or “push” strategies (*e.g.*, e-mail reminders) have been selected by people with chronic respiratory disease as a preferred method of receiving the AQHI readings.
- ✦ Combination tools (*e.g.*, “Asthma Today” Widget) are seen to be effective for people with asthma and associated allergies as a way of checking the AQHI on a regular basis combined with the local weather information. These tools also allow recipients to receive updates and news related to the management of their chronic disease.
- ✦ Community-based promotional and awareness activities (*e.g.*, Asthma Ambassadors) should be considered a potential way to inform people about the AQHI effectively.

The ASC also obtained an indication of the level of participation in the AQHI outreach activities by keeping track of the number of individuals who were directly and indirectly provided with materials, information or advice on the AQHI. The ASC collected and analyzed the following project outputs that are outlined in *Table 5* below:

Table 5: Main project outputs, February-December 2010

Project Outputs	Numbers
1. Number of participants: <ul style="list-style-type: none"> • In the baseline online assessment survey • In the on-line pool and/or blog 	86 59
2. Number of Asthma Ambassadors trained to promote the AQHI	46
3. Number of educational packages distributed by the Asthma Ambassadors	588
4. Number of the ASC customers who received information about the AQHI by contacting the Asthma and Allergy Education and Support Program	260
5. Number of website clicks on a page containing AQHI-related information and messages	2,227
6. Number of the Asthma Today Widget downloads from the ASC website	991
7. Number of promotional packages sent out to individuals and health care	527

professionals	
8. Number of outreach activities related to the AQHI information provided using social networks such as:	
• Twitter posts	27
• Facebook updates	9
• NAPA blog posts	8
• E-newsletter stories	4
9. Number of media opportunities used to promote the AQHI :	
• TV and radio interviews	5
• Newspaper articles	1
• PR campaigns	1
10. Number of participants in community-based outreach events:	
• Participants in webinars and/or workshops	183
• Participants in community outreach events	672
11. Number of participants in Conferences and professional meetings	189

The findings from this project support five key recommendations related to further implementation of AQHI promotional and outreach activities with a focus of distributing the AQHI- related information to people affected by chronic respiratory disease as well as developing new AQHI educational materials and tools that could be useful and applicable to this target audience.

The **five** core recommendations are as follows:

1) Focus on promoting the AQHI to people affected by chronic respiratory disease as one of the sensitive populations identified by the National AQHI and Forecast Program Logic Model⁷

Based on the AQHI benefits and its increased level of use by people affected by chronic respiratory disease, in particular asthma and associated allergies, special promotional and educational activities need to be developed and/or implemented to outreach to this target population with the AQHI-related information. This could be achieved by continuing to provide the AQHI information and educational material and activities through disease organizations working in the respiratory field (*e.g.*, the AQHI webpage of the ASC, *etc.*). Outreach and promotional strategies targeting people with chronic respiratory disease should differ from approaches used for the general public taking into consideration the needs of this target group as well as their perspectives on health messages and risk categories associated with the index.

People with chronic respiratory disease also need to be educated on how to self-identify the AQHI number based on both symptoms occurring and the AQHI readings and make the index part of their overall chronic disease management plan. This could help establish their personal AQHI number when they would most likely start noticing the appearance of symptoms associated with their chronic disease and make adjustments to their therapy if necessary according to their self-management plans. In general, people with chronic respiratory disease require more education on how proper management of

their illness should be ongoing and adjusted based on multiple factors, including the AQHI readings. According to the project findings, project participants affected by chronic respiratory disease do not receive AQHI-related information from their health care professionals. Encouraging health care providers to educate people with chronic respiratory disease about the AQHI should be made one of the priorities and appropriate tools and resources need to be developed and implemented to facilitate communication about the index between health care providers and their patients.

2) Continue applying active (“push”) strategies as well as using combination tools to promote the AQHI amongst people with chronic respiratory disease

Based on the preferences expressed by people affected by the disease during this project, the AQHI needs to be actively delivered to this target audience using a variety of tools and strategies. For example, active outreach on a regular basis (all year around) could be provided by using active reminders either via e-mail alerts and/or SMS messaging. Another identified preference in communicating the AQHI is to have the index available in combination with other information that is necessary to plan outdoor activities. The AQHI readings should be integrated with weather and pollen forecasts and delivered as part of the same package. Project participants affected by chronic respiratory disease would also like to have the index communicated to them in combination with other information that could be relevant to chronic disease management of their disease (*e.g.*, research and program updates, community-based events and health fairs, *etc.*). One example of such a tool is the “Asthma Today” Widget designed by the ASC for the purpose of this project that could be used to further promote the AQHI to people with chronic respiratory conditions.

3) Combine the AQHI promotion with providing people with information about environmentally friendly programs available in their area of residence

According to the project results, educating people about air pollution and the AQHI could empower them to be more environmentally conscious. Therefore, the index promotional and awareness initiatives and/or resources should include information about environmentally friendly programs available provincially (*Appendix 28*) and/or regionally. With increased knowledge on how the AQHI could be used and applied to personal health, residents will be encouraged to be more environmentally friendly and make environmentally conscious choices aimed to help reduce air pollution, ultimately aiming to keep the AQHI at lower levels as much as possible. The AQHI promotion should also be combined with activities and/or initiatives aimed to encourage the general public using “greener” choices for transportation (*e.g.*, public transit) and/or shopping (*e.g.*, reusable shopping bags). Promotional ads about the AQHI available at public transit and/or on shopping bags could be considered as a potential avenue to promote the AQHI and inform the general public about the index.

4) Continue implementing peer-to peer support and education activities to promote the AQHI at community level

Based on the results of the pilot conducted during the project implementation as well as other evidence, peer-to-peer support and education play an important role in overall chronic disease management. Asthma Ambassadors involved in the pilot participated actively in distributing educational packages within their respective networks as well as were instrumental in promoting the AQHI and informing people about environmentally friendly programs available in their area. Because the information is delivered by an existing trusted source with whom potential recipients already have a relationship, they are much more likely to review and understand the information provided, and contact the Asthma Ambassador for follow-up if necessary. Asthma Ambassadors also serve as a resource about general asthma knowledge for the public in the places where they live, work, play, and identify as an Asthma Ambassador. Community-based promotional activities should be considered as an effective approach to inform people about the index. The ASC could continue enrolling and training more Asthma Ambassadors in delivering information about proper asthma management, including the use of the AQHI by expanding the existing pilot program.

5) Conduct further research on the concept of self-calibration as well as a need to develop educational materials to learn how to use it properly

It is important for disease organizations and health care professionals to further educate patients about the concept of self-calibration and how it should be applied to the management of their chronic disease. According to the project results, more research is needed to gain a better understanding of how the concept of self-calibration needs to be communicated and/or explained to people affected by chronic respiratory disease as well as the general public. The development of additional materials on self-calibration should be taken into consideration based on the findings of this project.

V. Appendices

Appendix 1: The online AQHI survey “Air Quality Health Index awareness and promotion to Canadians with chronic respiratory disease”

Introductory Paragraph:

Air pollution is a key trigger of asthma and associated allergies. The Asthma Society of Canada (ASC) is committed to helping adults and children with asthma and associated allergies to breathe easier, and therefore recognizes the vital importance of clean air and a healthy environment. The aim of this survey is to assess your awareness of the Air Quality Health Index (AQHI), your preference in receiving the AQHI information, and your willingness to use the AQHI forecast. We would like to understand whether the AQHI information will encourage you to make environmentally conscious lifestyle choices. The feedback and input provided will help the ASC promote the AQHI to people with chronic respiratory diseases by incorporating the AQHI forecast in the existing ASC programs and services. This will ultimately promote better health outcomes by encouraging positive lifestyle choices based on current AQHI readings.

Section A

Demographics:

1) What is your sex?

Male

Female

2) What is your age?

15 and under

15 to 19

20 to 24

25 to 29

30 to 34

35 to 39

40 to 44

45 to 49

50 to 54

55 to 59

60 and above

3) Where do you live?

Urban

Rural

3a) Please specify your Province or Territory:

Alberta

Manitoba

Newfoundland and Labrador

Nova Scotia

Ontario

Quebec

British Columbia

New Brunswick

Prince Edward Island

Saskatchewan

Northwest Territories

Nunavut Territories

Yukon Territories

4) Do you think you live in or near a location where there is a problem with air pollution?

Yes

No (please skip to question 5)

➤ If Yes, please specify what you think the problem is due to:

Factory/Industry (Burning of Fossil Fuels)

Gasoline Refinement

Residential Wood Heating

Transportation Exhaust (Major Highways including larger roads)

Electricity Generation Plants

Other (please specify)

5) Do you suffer from a chronic respiratory condition(s)?

Yes

No (please skip to question 6)

➤ If Yes, please check all that apply:

Asthma

Associated Allergies

Chronic Obstructive Pulmonary Disease (COPD)

Reactive Airway Disease (RAD)

Other (please specify): _____

6) Are you a caregiver or guardian for an individual who suffers from a chronic respiratory condition(s)?

Yes

No (please skip to question 7)

➤ If Yes, please specify the individual's respiratory condition. Please check all that apply:

Asthma

Associated Allergies

Chronic Obstructive Pulmonary Disease (COPD)

Reactive Airway Disease (RAD)

Other (please specify): _____

7) Do you feel that air pollution (a contributing factor to poor air quality) affects you and your well-being?

Yes

No (please skip to question 10)

8) Please specify how air pollution affects you. Please check all that apply:

Decreased General Health

Lost Productivity

Increased Pain/Discomfort (e.g. Irritated Eyes, Sore Throat, etc.)

Lost Physical Activity/Energy

Sudden Appearance of Respiratory Symptoms (e.g. Coughing, Difficulty Breathing, etc.)

Worsening of Chronic Respiratory Condition

Increased Respiratory Infections

Other (please specify): _____

8a) As a result of increased air pollution levels, have you ever been hospitalized, visited a physician in the emergency room (ER), or visited your primary health care provider? Please check all that apply:

Yes

Hospitalization

Physician Visit/ER Department

Primary Health Care Provider Visit

No

Unsure

9) Please specify when air pollution affects you. Please check all that apply:

All the time

When outdoors

Only while exercising outdoors

On smoggy days

When outdoors on smoggy days

Only when exercising outdoors on smoggy days

Other (please specify): _____

10) Do you currently or have you in the past paid attention to air pollution levels?

Yes

I currently pay attention

I paid attention in the past

Both (I currently and in the past paid attention)

No (please skip to question 11)

➤ If Yes, please specify how often you checked the air pollution levels:

Daily

Once a Week

Every Two Weeks

Before Any Outdoor Activity

Before Exercising

As needed

Other (please specify): _____

➤ If Yes, please specify what method you have used to obtain your information about air pollution.

Please check all that apply:

Local Television (Weather Network, News)

Local Radio

Local Newspaper

Internet Websites (please specify website(s) name): _____

Website Access through Laptop/Desktop

Website Access through Electronic Phone Device

Electronic Phone Device Application

Smartphone

Smartphone "The Weather Network" Application

Other Application (please specify): _____

iPhone

iPhone "Air Quality" Application

Other Application (please specify): _____

Family and/or Friends

Other (please specify): _____

10a) Have you adjusted your lifestyle due to a high air pollution level?

Yes

No (please skip to question 11)

- If Yes, please specify how you adjusted your lifestyle. Please check all that apply:
 - Adjust Outdoor Exercise Regime
 - Exercise Indoors vs. Outdoors
 - Adjust Outdoor Work Activities
 - Adjust Outdoor Leisure Activities
 - Minimize Outdoor Exposure to Air Contaminants (Avoid Industrial Areas, Wood Heating, Smoke, Traffic)
 - Became More Environmentally Friendly
 - Other (please specify): _____

- Please specify how often you adjusted your lifestyle when the air pollution level was high:
 - All the time
 - Only when outdoors
 - Only when exercising outdoors

11) Have you heard of the new Air Quality Health Index (AQHI)?
 Yes
 No (please skip to question 12)

- If Yes, where did you hear about the AQHI? Please check all that apply:
 - Internet Websites (please specify): _____
 - Local Radio
 - Local Television (Weather Network, News)
 - Newspaper
 - Electronic Phone Device Application
 - Community
 - Neighbour
 - Friend
 - Family Member
 - Community Centre
 - Health Care Professionals
 - Other (please specify): _____

➤ If Yes, are local AQHI readings available in your area?

___Yes

___No

___Unsure

12) Do you feel that getting information about local air pollution levels would be beneficial in managing your (or those under your care) chronic respiratory condition (asthma, associated allergies, chronic obstructive pulmonary disease, reactive airway disease)?

___Yes

___No

___I, or an individual under my care, does not have a chronic respiratory condition

___Unsure

➤ If Yes, would you adjust your (or those under your care) medications and/or outdoor activities based on the air quality reading?

___Yes (please check all that apply)

___Adjust Medication

___Change Outdoor Activities

___Other (please specify): _____

___No

➤ If No, please explain why: _____

13) Do you feel that understanding how air pollution is linked to your overall health would be beneficial in maintaining a healthy lifestyle for you or those in your care?

___Yes

___No

___Unsure

➤ If Yes, how would you adjust your lifestyle based on the air pollution level? Please check all that apply:

___Adjust Outdoor Exercise Regime (Exercise Indoors vs. Outdoors)

___Adjust Outdoor Work Activities

___Adjust Outdoor Leisure Activities

___Minimize Outdoor Exposure to Air Contaminants (Avoid Industrial Areas, Wood Heating, Smoke, Traffic)

___Become More Environmentally Conscious

___Make Environmentally Friendly Choices in order to Reduce Air Pollution

___Other (please specify):_____

14) Do you feel that knowing more information about local air quality would encourage you to be more environmentally conscious?

___Yes

___No

___Unsure

___I do not know what environmentally conscious means

➤ Do you feel that knowing more information about local air quality would encourage you to make responsible environmental choices aimed to help reduce air pollution?

___Yes

___No (please skip to Section B)

___Unsure (please skip to Section B)

➤ If Yes, how would you make responsible environmental choices? Please check all that apply:

___Participate in local environmental programs

___Make environmentally friendly changes in your lifestyle

___Recycle more often

___Use Environmentally Friendly Cleaning Products

___Reduce or Eliminate Pesticide Use

___Save Energy (Energy-Efficient Appliances, Switching off the lights)

___Save Water

___Walk or Bike to Work (Active Commuting)

___Take Public Transit

___Buy Organic/Local Foods

___Buy Fuel Efficient Vehicles

___Other (please specify):_____

___ Other (please specify): _____

Section B

Air Quality Health Index (AQHI) Material

The Air Quality Health Index (AQHI) is a scale which describes a local reading of air pollution as it relates to your health. The AQHI is calculated daily based on the levels of a combination of air pollutants in the air which are known to be harmful to your health. The AQHI reading describes a number between 1 and 10+. The greater the number, the higher the levels of air pollution, and the greater the associated health risk. The AQHI is available across Canada in select cities.

After reviewing a sample AQHI reading please answer the following questions:

Sample AQHI reading:

http://www.weatheroffice.gc.ca/airquality/pages/onaq-001_e.html

15) How would you rate the AQHI based on its overall usefulness?

___ Excellent

___ Very Good

___ Good

___ Fair

___ Poor

16) How would you rate the AQHI based on its overall design/presentation?

___ Excellent

___ Very Good

___ Good

___ Fair

___ Poor

17) Do you find the AQHI to be informative in obtaining a clear message about local air pollution and your health?

___ Yes (please skip to question 18)

___ No

➤ If No, please explain why: _____

18) Do you find the AQHI to be easy to understand and use?

Yes (please skip to question 19)

No

If No, please explain. Please check all that apply:

Too Confusing

Difficult to Navigate

Difficult to Understand What the AQHI Reading Meant

Difficult to Interpret Risk Categories (Low, Moderate, High, Very High)

Difficult to Understand Health Messages

Other (please specify): _____

➤ If No, how can the index be more relevant and useful?

19) What do you find the most useful about the AQHI reading?

Colour Coded Scale (Low Risk (Blue), High Risk (Red))

Numbered Scale (1-3 Low Risk, 7-10+ High Health Risk)

Risk Category (Low, Moderate, High, Very High)

Health Messages (Actions pertaining to *At Risk* or *General Population*)

Other (please specify): _____

None of the above

20) What is your preferred communication method of receiving the AQHI readings? Please check all that apply:

Internet

Websites

Please specify which website:

Weather Network

CBC News

Environment Canada

Other (please specify): _____

Please specify your website access preference:

___ Website Access through Laptop/Desktop

___ Website Access through Electronic Phone Device

___ Both

___ Discussion Blogs

___ Pop-Up Windows/Buttons

___ Asthma Widget

___ Social Networks

___ Twitter

___ FaceBook

___ MySpace

___ Other (please specify): _____

___ Local Radio

___ Local Television

Please specify television station:

___ Weather Network

___ CBC News

___ Other (please specify): _____

___ Local Newspaper

___ Electronic Phone Device Applications

___ Smartphone

___ Smartphone “The Weather Network” Application

___ Other Application (please specify): _____

___ iPhone

___ iPhone “Air Quality” Application

___ Other Application (please specify): _____

___ Information Available at Public Transit

Automated Telephone Information System

Other (please specify): _____

20a) Are you interested in an active method (e.g. reminders/alerts) or passive method (e.g. checking the AQHI by myself) of receiving the AQHI readings?

Active

Email Reminders

Automatic Voice Response Reminders

SMS Messaging Reminders

Passive (please skip to question 20b)

Indifferent (please skip to question 20b)

➤ If Active, please specify when you would be interested in receiving the reminders.

All year

Seasonal

Summer

Spring

Fall

Winter

Only when there are air quality concerns (AQHI reading is high)

➤ If Active, please specify how often you would be interested in receiving the reminders.

Daily

Once a Week

Other (please specify): _____

20b) Are you interested in receiving the AQHI readings integrated with the weather forecast information (weather updates, temperature, humidex, weather warnings, pollen count etc.)?

Yes

No

Sample Health Message:

The Health Messages help explain the AQHI reading by providing recommendations on how to adjust your outdoor activity levels in accordance with each health risk and AQHI reading. The Health Messages are separated into two individual health risk categories, the "At Risk Population" and the "General Population". Separate Health Messages are described for each health risk category. The Health Messages will thus serve to help explain the AQHI by providing recommendations on how to adjust your outdoor activity level based on the current reading specific to your individual health risk to air pollution.

After reviewing a sample AQHI Health Message please answer the following questions:

Sample Health Message:

<http://www.ec.gc.ca/cas-aqhi/default.asp?lang=En&n=79A8041B-1>

21) Do you find the Health Messages to be easy to understand and apply?

Yes

No

➤ If No, please explain. Please check all that apply:

Too confusing

Difficult to Navigate through the Chart

Difficult to understand how the Health Messages pertained to the AQHI Reading

Difficult to understand how the Health Messages pertained to the Health Risks

Difficult to understand how the Health Messages applied to my Chronic Respiratory Condition (asthma, associated allergies, chronic obstructive pulmonary disease, reactive airway disease)

Other (please specify): _____

➤ Please specify how the Health Messages could be better portrayed. Please check all that apply:

Provide More Examples

Color Code the Health Messages (i.e., "Avoid" in RED writing)

Make the Health Messages more Applicable to my Chronic Respiratory Condition

Make the Health Messages a part of my Self-Management Plan

Other (please specify): _____

22) Do you find that the Health Messages helped explain the AQHI readings?

Yes (please skip to question 23)

No

➤ If No, please explain why: _____

23) Do you find that the Health Messages explained adequately how to adjust your outdoor activity levels based on your individual health risk to air pollution?

Yes (please skip to question 24)

No

➤ If No, please explain why: _____

24) Is it clear that you need to monitor your chronic disease symptoms first, before assessing if you need to use the recommendations provided by the Health Messages?

Yes

No

If No, please explain: _____

25) If you are experiencing symptoms associated with your chronic disease and potentially triggered by air pollution, would you use the recommendations provided by the Health Messages?

Yes

No (please skip to question 33)

26) Is there any additional information we can add to the Health Messages to enhance your understanding of the AQHI reading?

Yes

No (please skip to question 27)

➤ If Yes, please specify what information would be beneficial:

27) Which areas about the AQHI and/or air pollution would you like to know more information on?

Please check all that apply:

Information on What the AQHI is

Information on How the AQHI is calculated

- Information on Health Messages (Actions for the *At Risk* vs. *General* Population)
- Information on Air Pollutants (Ground-Level Ozone, Particulate Matter, Nitrogen Oxides)
- Information on Common Sources of Pollutants (Burning of Fossil Fuels)
- Information on Health Effects associated with Air Pollution
- Information about who is at Risk (Children, Seniors, Individuals with Chronic Respiratory Conditions)
- Information about How You Can Improve Air Quality (Environmentally Friendly Choices)
- Information on How Weather Conditions Affect Air Quality
- None (please skip to question 29)

28) In what format would you like to receive the AQHI promotional/educational materials? Please check all that apply:

- Text
 - Brochure
 - Newsletter
 - Printed Newsletter
 - Electronic Newsletter
 - Factsheet
 - Rack cards
 - Checklist
 - Other (please specify): _____
- Poster
- Games
- Video
- Promotional Items
 - Recycled Shopping Bags
 - Fridge Magnets
 - Stickers

T-shirts

Other (please specify): _____

Television Ads

Radio Ads

Internet

Websites

Informational Websites (Government, Weather, News)

Social Networking Websites

Twitter

FaceBook

MySpace

Online Discussion Blogs

Asthma Widget

Informational Sessions

Educational Webinar

Educational Workshops

Youth

General Public

Schools

Athlete and Coaching groups

Information available at Public Transit (TTC Subway Transit Poster)

Informational Display/Kiosk at Public Mall

Other (please specify): _____

28a) Are you interested in receiving the AQHI promotional/educational materials in a different language (other than French and English)?

Yes (please specify language): _____

No

29) In your opinion, what is the best way to inform people about the existence of the new AQHI? Please check all that apply:

Television Commercials

Local Television

Weather Network

CBC News

Other (please specify): _____

Promotional Posters

Radio Advertisements

Newspaper Advertisements

Internet Websites

Government Websites

Environment Canada

Health Canada

Other (please specify): _____

News and Weather

Weather Network

CBC News

Other (please specify)

Social Networking Websites

Twitter

FaceBook

MySpace

Other (please specify): _____

Electronic Alerts/Reminders

Email Reminders

SMS Messaging Reminders

- Voice Reminder
- Electronic Phone Applications
- Information available at Public Transit (TTC Subway Brochures/Posters)
- Other (please specify): _____

Section C

Overall Questions:

- 30) For what purposes would you use the AQHI? Please check all that apply:
- Assess the AQHI reading and associated health risk
 - Monitor/keep track of your chronic disease symptoms based on the AQHI reading and associated health risk
 - Adjust your outdoor activity level based on your chronic disease symptoms and the recommendations provided by the Health Messages
 - Other (please specify): _____
 - I do not intend to use the AQHI

31) How often would you check the local AQHI readings? Please check all that apply:

- Daily
- Once a Week
- Every Two Weeks
- Before Any Outdoor Activity
- Before Exercising
- As needed
- None
- Other (please specify): _____

32) How important is it for you to know the local AQHI readings on a regular basis?

- Very Important
- Important
- Moderately Important
- Of Little Importance

Unimportant

33) Would you prefer to have the AQHI reading available to you as a forecast (in advance for the next day) or as an actual reading (updated daily)?

Forecast

Actual Reading

Both

Indifferent

34) Are you currently using or have you in the past used a Self-Management Plan (Asthma Action Plan, COPD Action Plan, Peak Flow Meter) to manage your symptoms?

Yes

No (please skip to question 36)

➤ If Yes, would you like to have the AQHI incorporated as part of your disease Self-Management Plan?

Yes

No

Please explain why: _____

➤ If Yes, would you keep track of both your symptoms and the corresponding AQHI readings?

Yes

No

Please explain why: _____

35) Would you use the concept of self calibration of your symptoms with the AQHI?

Yes

Yes- however, more information needed

No

I don't understand the concept of self calibration

36) Will knowledge of the AQHI encourage you to be more environmentally friendly and make environmental conscious choices aimed to help reduce air pollution?

Yes

No

Please explain how: _____

Section D

Personal Feedback

37) If there is anything else you would like to share (ideas or thoughts)? Please provide your response below:

CONGRATULATIONS!

You have completed the survey!

Thank-you very much for your participation! Your input is valuable for the future development of the AQHI for people with chronic respiratory diseases. Please refer to the AQHI Webpage (off of the Asthma Society of Canada website) for additional resources to place your comments!

Appendix 2: The master list of the AQHI online educational materials and resources

Organization	Website
Environment Canada	http://www.ec.gc.ca/default.asp?lang=En&n=FD9B0E51
Toronto Public Health	http://www.toronto.ca/health/airquality/smog/index.htm
Air Health - BC	http://www.airhealthbc.ca/default.htm
Health Canada	http://www.hc-sc.gc.ca/ewh-semt/air/out-ext/air_quality-eng.php
Northern Health Authority	http://northernhealth.ca/
Environment, Energy and Forestry PEI	http://www.gov.pe.ca/envengfor/index.php3?number=1025501
Clean Air Hamilton	http://www.cleanair.hamilton.ca/default.asp?id=37#
The Ministry of Environment	http://www.airqualityontario.com/
Ontario Ministry of Health and Long Term Care	http://www.health.gov.on.ca/english/public/pub/pubhealth/smog.html
Air Quality Health Index - Quebec	http://www.coteairsante.qc.ca/Default.aspx?lang=en
The Canadian Lung Association	http://www.lung.ca/protect-protegez/pollution-pollution_e.php
Pollution Prevention - Manitoba	http://www.gov.mb.ca/conservation/pollutionprevention/airquality/aq-health/index.html
Kids Health - Ozone, Air Quality and Asthma	http://kidshealth.org/parent/managing_asthma/triggers/ozone_asthma.html
The Asthma Society of Canada	www.asthma.ca
The Weather Network	http://www.theweathernetwork.com/airquality/hotdays_asthmarisk
Asthma/Allergy Information Association	http://aaia.ca/en/index.htm
Nova Scotia Canada	http://www.gov.ns.ca/news/details.asp?id=20090603004
The Children's Clear Air Network	http://www.childrencan.ca/index.php?/Latest/Kids-on-TV-can-make-the-IDLE-FREE-message-stick.html
Healthy Ontario	http://www.healthyontario.com/FeatureDetails.aspx?feature_id=4032
Air Aware	http://www.greennexus.com/gnx.aspx?name=AA-aqhi
Environment Canada Clean Air Online	http://www.ec.gc.ca/cleanair-airpur/Home-WS8C3F7D55-1_En.htm

Halton Region- AQHI	http://www.halton.ca/cms/one.aspx?portalId=8310&pageId=13729
York Region- AQHI	http://www.york.ca/Services/Public+Health+and+Safety/Environmental+Health/Outdoor+Air+Quality+.htm
Region of Peel- AQHI	http://www.peelregion.ca/health/cleanairpeel/index.htm
Quebec-AQHI	http://www.coteairsante.qc.ca/Default.aspx
Nova Scotia Environment-AQHI	https://www.gov.ns.ca/nse/aqhi/
Clean Air Champions	http://www.cleanairchampions.ca

Appendix 3: Summary of recommendations provided by the ASC's CAE/CRE and the NAPA Executive Committee member

The Asthma Society of Canada (ASC) conducted an internet search for Air Quality Health Index (AQHI) web-based resources by using the Google search engine. A Certified Asthma/Respiratory Educator (CAE/CRE) reviewed the AQHI online resources to determine which resources would be most relevant for individuals with asthma and/or associated allergies. The web-based resources were specifically reviewed for information on air quality and the AQHI, as well as information on respiratory health. Furthermore, they were reviewed for information on what steps Canadians can take to protect their health on a daily basis from the negative effects of air pollution.

The website resources presented below were selected for review based on the following criteria:

- The resource provides educational information best suited for people with chronic respiratory disease including asthma and/or allergies
- The resource contains comprehensive information on air quality and the AQHI
- The resource provides additional information on the connections between poor air quality and respiratory health
- The resource provides appropriate information on strategies and initiatives to reduce one's exposure to air pollution
- The online resource is user friendly and easy to navigate

1) The **Environmental Canada's** AQHI website (www.ec.gc.ca) was reviewed and considered an excellent resource to receive detailed information about the index. The information on this site specifically describes air pollution; the effects of air pollution on health; information on which populations are at risk; steps one can take to reduce their exposure, and the consumers' role in protecting the air quality. Additionally, the resource provides information on the AQHI, how the AQHI is calculated, a detailed description of the AQHI scale, the implications of poor AQHI readings, and links to the AQHI readings at local communities where available.

The Environmental Canada's website is a good resource to people living with chronic respiratory disease. The information on this website is provided in a user friendly and easy to navigate fashion. It provides relevant information for the consumers to help understand issues related to air quality and air pollution, and what they mean to their health. It also provides a detailed description of the AQHI scale and how it should be used to determine the risk level. The website pays greater attention to issues related to people who are most at risk and/or are sensitive to air pollution and provides advice on how to protect one's health. The AQHI is described as a tool that enables people with chronic respiratory disease to learn how to limit their exposure to air pollution as well as explains in detail how to adjust the activity levels during increased levels of air pollution. Further, this website provides links to local air quality readings and advice on what a person can do in order to improve the quality of the air we all breathe.

This website may be of a particular interest for children as there is an “AQHI for Kids” section that explains the potential effect of the poor air quality on asthma, describes “safe” and “not safe” air quality days, and specifies whether or not children should be active outside during periods of bad air quality.

2) The **Weather Network** website (www.weathernetwork.com) is a well known, reputable national site that consumers turn to for weather and weather-related information. There is a specific link for the AQHI on the site under the “Health and Environment” section. Although there is no provision of information on this site describing the AQHI, the site is an excellent resource for searching and monitoring the AQHI readings across Canada listed by province and city.

3) The **Clean Air Champions** website resource (www.cleanairchampions.ca) is offered in both English and French. The site provides extensive information on air pollution, health issues and concerns related to it, the role of all Canadians in protecting their health and reducing the air pollution levels, strategies to adopt to help reduce pollution, a detailed description of the AQHI, and information on physical activity with respect to air quality. Information about programs aimed at empowering Canadians to ‘*do their part*’ is provided through the website that target both youth and adults. The website has a very strong focus on encouraging a healthy lifestyle for all Canadians. The message is very consistent through all the website content stating that the Clean Air Champions work at the community level to promote healthy lifestyle choices to reduce air pollution. This website will be potentially well received by the viewers as it uses role models (especially for the youth focused programs) that people respect.

The website also provides detailed information on the relationship between air quality and respiratory disease, and the concerns related to exposure to poor air quality and respiratory health. Additionally, it provides material and information about programs and challenges that the general public can adopt to facilitate the change at the public level. However, it does not provide detailed education and/or information on asthma or other chronic respiratory diseases that may be affected by poor air quality.

4) The **Air Aware** website (www.greennexus.com) is an associated web-based resource to the Clean Air Champions website. The stated purpose of this website is to encourage all Canadians to adopt active, healthy lifestyles while reducing the environmental footprint. Air Aware is a curriculum connected program for grades 6 to 12 that is available in most provinces, and offer resources for teachers, students and the general public. The aim of the program is to provide information to enable both students and adults to adopt practices and behaviours that will enhance their own personal as well as environmental health. Additionally, the website has information on the AQHI, the relationship between the air quality and health, and identifies specifically individuals at risk, including those with chronic respiratory disease. The information is presented in a user friendly manner, making it accessible and educational. This site also offers a section with resources and games which will help engage the viewer.

The site also provides tools and links on how someone can be involved, become part of the solution, and participate in challenges and/or support groups by focusing on what individuals and groups have done, and can do to participate in clean air programs. This resource is unique as it helps to empower individuals to ‘do their part’ for the environment.

Further, the site provides detailed information on asthma as well as features athletes personally affected by asthma as role models and spokespersons.

5) Information on the AQHI provided by disease organizations, namely the **Asthma Society of Canada** (www.asthma.ca), the **Canadian Lung Association** (www.lung.ca) and the **Asthma and Allergy Information Association** (www.aaia.ca). These websites are well known, reputable sources that provide education and information to the general public as well as to healthcare professionals. People affected by chronic respiratory disease and/or their caregivers will find that these websites provide the necessary information and education on chronic respiratory disease, and how to manage it properly. These websites also provide a great deal of information on air quality, the AQHI, and the health risks of poor air quality for those living with chronic respiratory disease. Furthermore, they offer information on how to minimize exposure to poor air quality, what one can do to help the environment, and reinforce the fact that Canadians should pay attention to air pollution levels and take steps to protect themselves. The sites provide advice on necessary steps that people can take to limit their exposure in order to protect their respiratory health.

Further, online resources providing information about children health and asthma were also reviewed taking into consideration the fact that many parents would like to have information about health of their children and how it could be affected by poor outdoor air quality.

1) The **Children’s Clean Air Network** (www.childrencan.ca) website indicates that the organization represents a network of like-minded partners promoting ‘*IDLE-FREE – the next smoke-free*’ environment. Their goal is to help ‘*North America turn off its tailpipe*’ by reducing needless vehicle emissions, ultimately saving billions of dollars in fuel and cutting millions of tons of greenhouse gases. The focus of the group is on preventing needless emissions that ultimately will impact the health of our children. Although the information is not specific to children with asthma, it is focusing on protecting children from the harmful emissions that come from car idling. The site includes a viewer ‘blog’ where one can join in discussions. No information about the AQHI is provided.

2) The **Canadian Partnership for Children’s Health and Environment (CPCHE)** website (www.healthyenvironmentforkids.ca) describes its mission as being a multi-sectoral collaboration of twelve organizations with expertise in issues related to children, health, public health, and the environment. CPCHE partners have been working together to protect children's health from environmental pollutants and toxic chemicals by informing decision-makers, healthcare organizations, individual healthcare practitioners, parents and the public about

children's environmental health issues. The site provides information, fact sheets and publications on a variety of topics, including numerous articles with a focus on air pollution and asthma. It also gives an option of signing up to become a CPCHE member. Viewers to this website resource will find a great deal of information about air quality presented in a user friendly and easy to understand manner. No information about the AQHI is provided.

Additionally, website resources of provincial organizations were reviewed for relevant content and information on air quality, the AQHI, and potential effects on health of people with chronic respiratory disease. Many provincial government websites contain an environmental section that provides information on air quality, the index, the negative health risks of poor air quality, and steps that people can take to reduce the level of air pollution. These sites are great resources for seeking information about provincial programs and initiatives. Although there is no specific information on asthma and its management, the sites explain in detail the negative effects of air pollution on respiratory health in general. The provincial websites also list the AQHI by city where available. As an example of the resources offered by provinces, a review of the **Ontario Ministry of the Environment** site (www.airqualityontario.com) was conducted. The site provides information about air quality, air quality reports and forecasts by city, information about smog and what people can do to help '*spare the air*'. While the site offers information on potential impacts of poor air quality on respiratory health, it does not provide any information about asthma in particular.

Online resources related to the AQHI for major cities were also evaluated as many consumers are concerned with what is happening at the local levels, within their communities and interested in local information. Several website resources in Toronto and the GTA were visited. A random selection of websites was reviewed including the following: **Toronto Public Health** (www.toronto.ca/helath/airquality); **Clean Air Hamilton** (www.cleanairhamilton.ca); **Halton Region** (www.halton.ca); **York Region** (www.york.ca), and the **Region of Peel** (www.peelregion.ca). All reviewed websites provide detailed information on air quality, the AQHI, the impact on health, and ways to protect your health. These websites also provide the local AQHI readings. Website visitors will receive valuable information on steps needed to protect their health as well as their role in protecting the environment along with information about local initiatives. By visiting those websites, people with asthma could gain a clear understanding on the impacts of poor air quality to their respiratory health.

The AQHI Tool Kit developed by Toronto Public Health was also reviewed by one of the NAPA Executive Committee members. Her detailed comments are presented below.

AQHI Tool Kit review by a patient with asthma

Upon review of the AQHI Tool kit developed by Toronto Public Health, I was very pleased with the information provided. As a person living with asthma, I felt it was informative and concerning at the same time. Being part of the high risk group and getting information about

early deaths and hospital visits due to poor air quality got me worried. Knowledge is power and these resources are somewhat empowering to a city resident living with asthma.

In regards to specific materials, I liked radio advertisements as they grabbed my interest right away. Both of the radio ads (long and short) start out with the effects of pollution on human life, grabs your attention and makes you think of how it could be affecting you as a person living with a lung problem.

The power point presentation was straight forward with information on how people with asthma and others in the high risk group need to be aware of poor air quality. It is also informative to members of the general public who will need to be more aware. Those of us in the high risk group are hopefully more aware and careful. The general public needs to be educated as well because they are less likely to be aware of the negative effects of pollution. The speech that accompanied the power point presentation is an excellent aid with further information on the science of air pollution and how it affects all of us. I would be comfortable using both these tools.

The three images (jpg ads) are good but present little information that could be relevant to people affected by asthma. You have to enlarge the photo of the elderly couple to see the man has a blue inhaler in his hand.

The print resources are excellent and abundant with the exception of the cards for cars. I wish they would have mentioned drivers and the fine for idling your car in the city of Toronto.

The education video is excellent and helpful. It covers how air quality affects people with asthma and other health issues and has familiar weather personalities.

Conclusions

It is well established that smog, air pollution and poor air quality are associated with health risks and can have an impact on pre-existing health conditions. Seniors, children, and people with chronic disease, including respiratory disease are especially at risk of experiencing adverse effects of exposure to air pollution. Air pollution can also cause irritation of the eyes, nose and throat and can cause wheezing, coughing and breathing difficulties even in healthy individuals. Exposure to poor air quality can result in increased asthma symptoms, exacerbations of asthma (and other respiratory diseases), increased hospitalizations, emergency room visits and/or physician visits. Health risks increase during high smog levels for those who work, play sports or exercise outdoors. One must be aware of the relationship between air quality and health, and learn how to avoid or minimize outdoor exposures during high AQHI reading days. Education and resources are necessary to provide all Canadians with respiratory disease the knowledge to effectively understand and manage their chronic disease, and to know how to minimize the negative effects of poor air quality. Additionally, all Canadians must be empowered to make changes and contribute to lessening one's impact on the environment, including air quality.

It is important to provide educational resources and support to those Canadians living with chronic respiratory disease to empower them to effectively manage their conditions and improve their quality of life. Websites that were chosen for review present information provided by national, provincial and local organizations. Many of the reviewed online resources have comprehensive information about the AQHI as well as the relationship between air quality and respiratory health and could be recommended to promote the AQHI amongst people affected by chronic respiratory disease. However, more detailed information is required on how the index could be incorporated in overall asthma management and control.

The websites also provide visitors with information about their potential role in improving air quality and minimizing air pollution. The majority of the websites are easy to navigate, present the information in a user friendly manner, and use language geared to the targeted audience.

Appendix 4: A special message added to the phone and email script, the Asthma and Allergy Education and Support Program

CAE/CRE Script

The Air Quality Health Index is now available in select cities across Canada. The AQHI describes a local reading of air quality as it relates to your health. The AQHI is calculated daily based on the levels of a combination of harmful air pollutants in the air. The greater the AQHI reading, the higher the level of air pollution, and the greater the associated health risk. The AQHI presents a new, national, health-based approach to communicating air pollution.

We are looking for your opinion on the AQHI. Please provide your comments about the AQHI through four interactive options, including an online survey, poll, online discussion blog, audio blog, available from our website. Visit the AQHI website off of the main asthma.ca site, or directly at www.asthma.ca/aqhi.

Appendix 5: The AQHI informational letter to organizations that was included in weekly shipments of educational materials

Introducing the Air Quality Health Index (AQHI) Webpage!

Dear Health Care Professional,

The Asthma Society of Canada (ASC) is pleased to announce the launch of the Air Quality Health Index (AQHI) webpage. The webpage is filled with information about the AQHI and four interactive options for you to provide your feedback.

The AQHI, now available in select cities across Canada, is a web-based scale which describes a local reading of air quality as it relates to your health. The AQHI is calculated daily based on the levels of a combination of harmful air pollutants in the air. The greater the AQHI reading, the higher the level of air pollution, and the greater the associated health risk. Alongside the AQHI are Health Messages which help explain the index, and provide recommendations on how to adjust your outdoor activity level based on the current reading specific to your individual health risk to air pollution. The AQHI presents a new, national, health-based approach to communicating air pollution.



We are looking for your opinion on the AQHI!

We would like to assess your awareness of the AQHI, your preference in receiving the AQHI, and your willingness to use the AQHI forecast. We would also like to understand whether the AQHI information will encourage you to make environmentally friendly lifestyle choices.

Comments about the AQHI can be provided through four interactive options available from our webpage as follows: *AQHI Online Survey*, *AQHI Poll*, *AQHI Online Discussion Blog*, and/or *AQHI Audio Blog*. The AQHI webpage can be accessed from the main asthma.ca site, or directly at www.asthma.ca/aqhi.

Please feel free to contact the ASC should you have any questions about the AQHI or about asthma and/or associated allergies. We can be reached by at 1-866-787-4050 or by email at info@asthma.ca.

Sincerely,

Christine Hampson,
President & CEO

Oxana Latycheva
Vice President, Programming

Appendix 6: The AQHI informational letter to individuals that was included in weekly shipments of educational materials

Introducing the Air Quality Health Index (AQHI) Webpage!

Dear Client,

The Asthma Society of Canada (ASC) is pleased to announce the launch of the Air Quality Health Index (AQHI) webpage. The webpage is filled with information about the AQHI and four interactive options for you to provide your feedback.

The AQHI, now available in select cities across Canada, is a web-based scale which describes a local reading of air quality as it relates to your health. The AQHI is calculated daily based on the levels of a combination of harmful air pollutants in the air. The greater the AQHI reading, the higher the level of air pollution, and the greater the associated health risk. Alongside the AQHI are Health Messages which help explain the index, and provide recommendations on how to adjust your outdoor activity level based on the current reading specific to your individual health risk to air pollution. The AQHI presents a new, national, health-based approach to communicating air pollution.



We are looking for your opinion on the AQHI!

We would like to assess your awareness of the AQHI, your preference in receiving the AQHI, and your willingness to use the AQHI forecast. We would also like to understand whether the AQHI information will encourage you to make environmentally friendly lifestyle choices.

Comments about the AQHI can be provided through four interactive options available from our webpage as follows: *AQHI Online Survey*, *AQHI Poll*, *AQHI Online Discussion Blog*, and/or *AQHI Audio Blog*. The AQHI webpage can be accessed from the main asthma.ca site, or directly at www.asthma.ca/aqhi.

Please feel free to contact the ASC should you have any questions about the AQHI or about asthma and/or associated allergies. We can be reached by at 1-866-787-4050 or by email at info@asthma.ca.

Sincerely,

Christine Hampson,
President & CEO

Oxana Latycheva
Vice President, Programming

Appendix 7: The AQHI Information letter to partners

Introducing the Air Quality Health Index (AQHI) Webpage!

Dear Partners,

The Asthma Society of Canada (ASC) is pleased to announce the launch of the Air Quality Health Index (AQHI) webpage. The webpage is filled with information about the AQHI and four interactive options for you to provide your feedback.

We are looking for your opinion on the AQHI!

We would like to assess your awareness of the AQHI, your preference in receiving the AQHI, and your willingness to use the AQHI forecast. We would also like to understand whether the AQHI information will encourage you to make environmentally friendly lifestyle choices.

Comments about the AQHI can be provided through four interactive options available from our webpage as follows: *AQHI Online Survey*, *AQHI Poll*, *AQHI Online Discussion Blog*, and/or *AQHI Audio Blog*. The AQHI webpage can be accessed from the main asthma.ca site, or directly at www.asthma.ca/aqhi.

Please feel free to contact the ASC should you have any questions about the AQHI or about asthma and/or associated allergies. We can be reached by at 1-866-787-4050 or by email at info@asthma.ca.

We hope that you enjoy the AQHI and use it to better manage your respiratory condition!

Sincerely,

Sabrina Panetta
Asthma Society of Canada
Project Coordinator

Appendix 8: The AQHI slide from the ASC presentation, the OPHEA webinar sessions

AsthmaTodayWidget™



- The **AsthmaToday Widget** is a useful tool for people living with asthma and associated allergies to stay informed on important issues and information needed to plan your outdoor activities.

- The **AsthmaToday Widget** allows you gain instant access to the **Air Quality Health Index (AQHI)**, a scale which describes a local reading of air pollution as it relates to your health (available for a number of Canadian cities), as well as local weather forecasts, and the latest news updates from the Society



- The **AsthmaToday Widget** software is easy to use and can be downloaded free of charge from the ASC's website: <http://www.asthma.ca/widget/>



Appendix 9: The AQHI Slide from the ASC presentation, the TELUS Health Space booth, e-Health Conference (Vancouver, May 2010)

AsthmaTodayWidget TM



- The **AsthmaToday Widget** is a useful tool for people living with asthma and associated allergies to stay informed on important issues and information needed to plan your outdoor activities.

- The **AsthmaToday Widget** allows you gain instant access to the **Air Quality Health Index (AQHI)**, a scale which describes a local reading of air pollution as it relates to your health (available for a number of Canadian cities), as well as local weather forecasts, and the latest news updates from the Society



- The **AsthmaToday Widget** software is easy to use and can be downloaded free of charge from the ASC's website: <http://www.asthma.ca/widget/>



Appendix 10: A screenshot of the AQHI webpage designed by the ASC

Asthma Society of Canada

National Asthma Patient Alliance JOIN NOW > | 1-866-787-4050 ASTHMA & ALLERGY SUPPORT LINE > | Donate Now! >

AsthmaToday widget | Follow us on twitter | CERTIFIED asthma & allergy friendly

Home Kids Allergy NAPA Websites Partners About Us Search our site GO

Air Quality Health Index

1	2	3	4	5	6	7	8	9	10	+
Risk: Low (1-3)			Moderate (4-6)			High (7-10)		Very High (Above 10)		

Check the AQHI in Your Area!
Click Here >>
AQHI Main Page >>
Background Information >>
About the AQHI >>
AQHI Health Messages >>
空氣質素 健康指數
AQHI Information Available in Chinese >>

Purpose
The purpose of this webpage is to assess your awareness of the Air Quality Health Index (AQHI), your preference in receiving the AQHI information, and your willingness to use the AQHI forecast. We would also like to understand whether the AQHI information will encourage you to make environmentally conscience lifestyle choices.

Your Feedback
The feedback and input provided will help the Asthma Society of Canada (ASC) promote the AQHI to people with chronic respiratory diseases by incorporating the AQHI forecast in the existing ASC programs and services. This will ultimately promote better health outcomes by encouraging positive lifestyle choices based on current AQHI readings.
Please provide your feedback about the AQHI through our **three** interactive options:

- Complete the AQHI Poll
- Comment on the AQHI through our Online Discussion Blog
- Comment on the AQHI through our Audio Blog

AQHI Poll

1) Are you aware of the Air Quality Health Index (AQHI)? Yes No

2) What is your preferred communication method of receiving the AQHI information? Please check all that apply.

- Internet Websites
 - Internet Access through Laptop/Desktop
 - Internet Access through Mobile Phone
- Social Networking Websites (Twitter, FaceBook etc.)
- Local Radio
- Local Newspaper
- Mobile Phone Applications (iPhone Apps, Smartphone Apps)

3) Will you use the AQHI reading to assess the air pollution level and adjust your outdoor activities if necessary, based on your individual health risk to air pollution? Yes No

4) Will knowledge of the AQHI encourage you to be more environmentally friendly and make environmentally conscious choices aimed to reduce air pollution? Yes No

Submit Form

Download the AsthmaToday Widget!
Download the AsthmaToday Widget to your computer or laptop and gain instant access to the AQHI and news surrounding asthma and associated allergies.
AsthmaToday Widget >>

AQHI Online Discussion Blog
Click on the following link to be directed to the online discussion blog. Please feel free to post your comments, concerns and/or feedback about the AQHI on this blog.

<http://airqualityhealthindex.blogspot.com> > >

Useful AQHI Links

- [Environment Canada's AQHI National Site](#)
- [Environment Canada's Clean Air Online](#)
- [Toronto Public Health - AQHI](#)
- [Air Aware](#)
- [Clean Air Champions](#)
- [Air Health BC \(British Columbia AQHI\)](#)
- [Ontario Region- AQHI](#)
- [Quebec- AQHI](#)
- [Nova Scotia Environment- AQHI](#)
- [20/20: The Way to Clean Air](#)

[AQHI Audio Blog](#)

Please feel free to voice your comments about the AQHI through the audio blog by calling our toll free number at: **1-866-787-4050** followed by **8** to access the AQHI voice mailing system.

[The AQHI helps to protect our health, and also serves as a reminder of the need to protect our environment.](#)

Because cars, trucks and coal-fired power plants are major sources of air pollution, reducing energy use can reduce the number of high AQHI days. The "20/20 The Way to Clean Air" Campaign is designed to help individuals reduce both home energy use and vehicle use by 20 per cent. To order a free 20/20 Planner with a step-by-step action plan to reduce your energy use call 1-866-583-2020 or visit www.cleanairpartnership.org/2020.

中文信息 Information Available in Chinese

空氣質素 健康指數
[Air Quality Health Index Brochure in Chinese > > .](#)
重新認識空氣質素
[Air Quality Health Index Postcard in Chinese > > .](#)

Appendix 11: AQHI information in the ASC e-newsletter, May 2010

“Asthma Today” Widget

The Asthma Society of Canada (ASC) has launched the Asthma Today Widget! The Asthma Today Widget is an interactive, virtual tool for people living with asthma and associated allergies, to stay informed on important issues and information needed to plan outdoor activities.

The Asthma Today Widget can be downloaded to a computer or laptop to gain instant access to the local Air Quality Health Index (AQHI), available for a number of Canadian cities, as well as local weather forecasts and relative humidity. The Asthma Today Widget also provides the latest news updates from the ASC on programs, educational materials and research, including developments on advocacy initiatives from the ASC's National Asthma Patient Alliance (NAPA).

This useful tool is easy to use and can be downloaded free of charge from the ASC's website. The Asthma Today Widget will allow instant access to important issues surrounding asthma and associated allergies, as well as up-to-date information on the local AQHI readings and weather forecast needed to appropriately plan your outdoor activities.

Download the Asthma Today Widget here: www.asthma.ca/widget >>



Appendix 12: AQHI information in the ASC e-newsletter, June 2010

ASC launches the Air Quality Health Index (AQHI) webpage!

The **Air Quality Health Index (AQHI)** is now available in select cities across Canada. The AQHI is a web-based scale which describes a local reading of air quality as it relates to your health.

The AQHI is calculated daily based on the levels of a combination of harmful air pollutants in the air. The greater the AQHI reading, the higher the level of air pollution, and the greater the associated health risk. Alongside the AQHI are Health Messages which help explain the index, and provide recommendations on how you should to adjust your outdoor activity level. Recommendations are based on the current reading specific to the effect air pollution may have on your individual health. The AQHI presents a new, national, health-based approach to communicating air pollution.



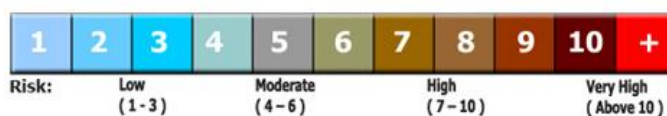
We are looking for your opinion on the AQHI. We would like to assess your awareness of the AQHI, your preference in receiving the AQHI information, and your willingness to use the AQHI forecast. We would also like to understand whether the AQHI information will encourage you to make environmentally friendly lifestyle choices.

Comments about the AQHI can be provided through four interactive options available from our webpage as follows:

- **AQHI Online Survey**
- **AQHI Poll**
- **AQHI Online Discussion Blog**
- **AQHI Audio Blog**

Visit the AQHI website off of the main www.asthma.ca site, or directly at www.asthma.ca/aqhi to learn about the AQHI and provide your feedback.

Air Quality Health Index



Appendix 13: AQHI information in the ASC e-newsletter, July 2010

Know your Air Quality Health Index (AQHI) Numbers

The **Air Quality Health Index (AQHI)** is now available in 35 communities across Canada. The AQHI is a web-based scale designed to help you understand what the air quality around you means to your health. The AQHI will report four key pieces of information for you:

- A number from 1 to 10+ indicating the air quality. A higher number means a greater health risk as a result of air quality. When the amount of air pollution is very high, the number will be reported as 10+.
- A category that describes the level of health risk (low, medium, high, very high).
- Health messages customized to each category, tailored to both the general population, and the 'at risk' population.
- Current AQHI readings for your area, and a forecast

Air Quality Health Index



To find your local readings, [click here](#).

We are still looking for your opinion on the AQHI. We would like to know your awareness of the scale, how much you are willing to use it, and what ways you prefer to receive the information. Additionally, does your knowledge of the AQHI encourage you to make environmentally friendly lifestyle choices?

We encourage you to provide feedback at our online [survey](#), our [web poll](#), the [AQHI Blog Page](#), or through our Audio Blog at 1-866-787-4050.

Appendix 14: AQHI information in the ASC e-newsletter, August 2010

UBC SOEH e-course: Outdoor Air Quality and Health



Outdoor air pollution plays a significant role in impacting the health of all citizens. Exposure to outdoor air pollution has been associated with adverse health outcomes, including impaired lung function, exacerbation of asthma, chronic obstructive lung disease and impacts on the cardiovascular system that may lead to hospitalization and premature death. Ambient air quality affects not only individuals with heart and breathing problems but also pregnant women, the very young and the elderly.

Beginning September 1, 2009, UBC School of Environmental Health presents an online, on demand, bilingual course on outdoor air quality and health and the Air Quality Health Index (AQHI). This course is available at no cost, made possible through funding by Health Canada. This CME program qualifies for several types of continuing education credits, including those for physicians, nurses, respiratory therapists (AB), and Certified Asthma and Respiratory Educators in Canada.

Time commitment to individual learners is expected to be 3 to 4 hours plus time in an asynchronous discussion forum to discuss case studies and other course content with other learners and subject matter experts. More information about this course is available at:

http://www.soeh.ubc.ca/Continuing_Education/oaqpromo.html

The “20/20 The Way to Clean Air” and the Air Quality Health Index



Poor air quality is associated with thousands of premature deaths and hospitalizations in Canada each year. Air pollution worsens heart problems and aggravates lung conditions, such as asthma and bronchitis. In people without respiratory conditions, air pollution reduces lung function and irritates the eyes nose and throat.

The “20/20 The Way to Clean Air” Campaign is designed to help individuals reduce both home energy use and vehicle use by 20 per cent, as well as reducing vehicle emissions when you do need to drive. By reducing your energy consumption and vehicle use, you are paving the way towards cleaner air, and fewer days of poor air quality.

This campaign provides you with practical tips, including adjusting your thermostat levels, using

cold water for your laundry, cleaning your refrigerator coils, reducing “phantom power” in your electronics, keeping your car tires properly inflated, tele-working or tele-commuting, and carpooling.

To order a free 20/20 Planner with a step-by-step action plan to reduce your energy use call 1-866-583-2020 or visit www.cleanairpartnership.org/2020.

The **Air Quality Health Index** (AQHI) is a national tool available to help individuals protect themselves and the people they care for. The Air Quality Health Index reports air quality in relation to health on a scale from 1 to 10. The higher the reading, the greater the health risk and need to take precaution.

The AQHI helps people plan ahead by telling them the best time of the day to be physically active and when to reduce or reschedule strenuous outdoor activity. The AQHI provides health messages for both the at-risk and the general population. The at-risk group includes children, the elderly, and people with pre-existing heart and breathing problems.

The AQHI helps to protect our health, and also serves as a reminder of the need to protect our environment. Because cars, trucks and coal-fired power plants are major sources of air pollution, reducing energy use can reduce the number of high AQHI days.

For more information on the Air Quality Health Index, please visit www.airhealth.ca.

NAPAlert: September 28, 2010

GTA Survey: Win Prizes from the Asthma Society of Canada



Dear NAPA member,

With the end of summer and start of fall, many people in the Greater Toronto Area believe that poor air quality days are behind us, and feel less concern about the demand for energy on the city's power grid.

While scorching summer days tend to bring out the worst air quality and highest energy use rates, poor air quality can happen at any time of year when air pollutants combine to make it difficult for people with asthma to breathe.

The Asthma Society of Canada has partnered with Toronto Public Health and the health departments in Peel, Halton, York, Durham, and Simcoe-Muskoka to promote the Air Quality Health Index and the 20/20: The Way to Clean Air program.

We have created [this short 5-minute survey](#) to gauge your awareness of these programs in the GTA. Do not worry if you don't know much about them, that's what we intend to measure. In exchange for your participation, we have **21 prizes** available for people who complete the survey.

Our first prize is 2 SmartSilk pillows, certified Asthma and Allergy Friendly by Allergy Standards Limited. The remaining 20 prizes are an Asthma Society hygrometer, thermometer and alarm clock to help measure and

control humidity levels in your home to reduce your exposure to mould and other triggers.

We would appreciate your responses to the survey. Please [click here](#) to participate, but hurry! The survey will only be open for one week.

Thank you,

Asthma Society of Canada

The National Asthma Patient Alliance (NAPA) is a grassroots patient group of volunteers from across Canada, whose aim is to increase patient awareness about how to achieve optimal asthma control and to address communication and advocacy needs of these diseases.

Send this link to anyone you know with asthma: www.asthma.ca/napa/membership.php

Appendix 16: The Twitter notifications related to the AQHI and air quality topics

August 4, 2010: New NAPA blog: [#Asthma](#) Society featured in heat, humidity and smog story on Global TV last night. <http://bit.ly/czLLgb> [#AQHI](#)

August 4, 2010: Another bad air day? Check out the Asthma Society AQHI page www.asthma.ca/global/aqhi.php

August 5, 2010: Wondering about the air quality? Want asthma news? Download the Asthma Widget <http://www.asthma.ca/widget/>

August 5, 2010: Need to check your local air quality? Want to know the humidity? Download the Asthma Widget <http://www.asthma.ca/widget/>

August 9, 2010: New NAPA blog: recent study shows living near major roadways/highways increases [#asthma](#) rates. <http://bit.ly/9CLO7a>

August 12, 2010: Take the 20/20 Challenge to reduce your home and vehicle energy consumption by 20% each. www.toronto.ca/health/2020.

August 17, 2010: Make sure to monitor the Air Quality Health Index, especially if you are in British Columbia this morning. [#forestfires](#) www.airhealth.ca

August 18, 2010: BC residents in Prince George, Quesnel and Williams Lake areas, take precautions for very poor air quality. <http://bit.ly/bsocOV>

August 18, 2010: Does poor air quality make you want to reduce your energy footprint? Take the 20/20 Challenge to reduce your home... <http://fb.me/vJwQvBgP>

August 26, 2010: Can you reduce your home and car energy consumption by 20%, and make our air cleaner in the process? www.cleanairpartnership.org/2020

August 30, 2010: [#Toronto](#) residents, your Air Quality Health Index is forecasting poor air quality today. Visit www.airhealth.ca to find out more information

August 31, 2010: Smog warnings for parts of Ontario and Quebec. AQHI forecasting high risk air quality today in Toronto and tomorrow in Montreal. [#asthma](#)

September 1, 2010: The Montreal-Quebec City corridor and Saskatoon have high risk air quality AQHI warnings today. Protect yourself www.airhealth.ca

September 2, 2010: Visit www.napa-blog.blogspot.com for our latest blog post about the Air Quality Health Index and how to achieve cleaner air.

September 8, 2010: Enjoy good air quality Canada! Not a single AQHI forecast higher than 4 today or tomorrow. Check your numbers... <http://fb.me/DdGHlKb>

September 13, 2010: Enjoy the fall weather Canada! All air quality across the country is 3 or less, low-risk range today and tmrw! www.airhealth.ca

September 24, 2010: AQHI readings today: Greater Toronto and Montreal in medium risk category; NB and NS forecast medium risk tomorrow. www.airhealth.ca

September 28, 2010: The Air Quality Health Index measures your local air pollution to help you manage your asthma outdoors. www.airhealth.ca.

September 28, 2010: Are you from the Greater Toronto Area? Take a 5 minute survey about the AQHI for a chance to win great prizes <http://bit.ly/9pVcTn>

October 1, 2010: Ontario shuts down 1/4 of its coal power units, helping improve Ontario's air quality. <http://bit.ly/c5ccPh>

October 5, 2010: Use the Air Quality Health Index to monitor your local air quality and manage your outdoor activities this fall. www.airhealth.ca.

October 6, 2010: Morning links: Pollution worsens asthma symptoms in kids. <http://bit.ly/bscUtm>

November 1, 2010: Traffic linked to worsening child asthma. <http://bit.ly/bHQ1sr>

November 5, 2010: Happy Friday Canada! Is anyone having trouble with their local air quality this morning? [#cdnasthma](https://twitter.com/cdnasthma)

November 11, 2010: Asthma, exercise, and cold air. Some reminders for your outdoor activities this winter. <http://ow.ly/38jur>

November 24, 2010: Morning news links: Michigan State students call for end of coal plant use on campus <http://ow.ly/3eStP>

November 24, 2010: Morning news links: Thunder Bay coal plant to convert to natural gas: Northern Ontario to be coal-free. <http://ow.ly/3eSxP>

November 29, 2010: You take 21,000 breaths every day. Learn about the Air Quality Health Index to breathe as easy as possible. www.asthma.ca/aqhi

Appendix 17: AQHI-related postings on the NAPA blog

July 5, 2010:

[Do You Have the Widget?](#)

Have you downloaded the new Asthma Society of Canada "Asthma Today Widget"?

This handy desktop tool will keep you up to date with all the latest issues surrounding asthma and associated allergies. It also includes your local weather forecast, humidity levels, and a link to the Air Quality Health Index (AQHI) for a number of Canadian cities.

Click [here](#) for more information and to download your Widget!

July 20, 2010:

["Smog" Days of Summer](#)

Did you know that air quality can be harmful during any season of the year? Though many people refer to 'smog season' as April to September, various combinations of air pollutants may lead to poor air quality at any time of the year. This is why you need to learn a little more about the [Air Quality Health Index](#).

The Air Quality Health Index measures air pollutants on a scale of 1 to 10 (1 being very clean air quality, 10 being poor air quality causing difficulties for most people). Based upon your unique circumstances and discussion with your doctor, you can determine which rating number may activate symptoms for your respiratory condition, or other risk factors.

The AQHI is currently available in select communities, it is the goal of Environment Canada to cover most major cities by the end of 2011.

For more information on the AQHI, please click [here](#) or [here](#).

Please let us know what you think of this project! The Asthma Society of Canada will use your comments to provide suggestions about the AQHI, and to better promote this new initiative.

August 4, 2010:

[Asthma Society in the News: Air Quality Concerns](#)

The Asthma Society of Canada was featured on Global News Toronto last night, August 3rd.

The story focused on the heat and humidity this week in Toronto, and contains reminders on how to check the Air Quality Health Index to monitor air quality in your city.

[Click here to watch the Global news story.](#)

To give us your feedback on the Air Quality Health Index, including whether you like the format, and your preferred delivery options, please visit our AQHI blog by [clicking here](#).

August 9, 2010:

[Living near major roads and highways is linked to increased asthma rates.](#)

Living near a major road with high traffic volumes has been linked to increased asthma rates in children, and increased lung and heart diseases in adults, according to [this recent study](#).

Scientists at UCLA showed that the ultrafine particles that come from vehicle emissions are enough to heighten the inflammation that causes asthma. We have known for years that some of the “larger” (and I use this term loosely, in terms of what the human eye can view) particles cause exacerbations and are linked to causing asthma, but this study is the first to prove that ultrafine particles can cause the same reactions. These are potentially even more dangerous, as ultrafine particles are able to travel much deeper into the lungs.

This study shows one of the challenges of living in densely-populated urban areas for people with asthma, and especially those with young children.

Do you have any experiences with car-based pollution affecting your breathing?

September 2, 2010:

["The Way to Clean Air" and the Air Quality Health Index](#)

Poor air quality is associated with thousands of premature deaths and hospitalizations in Canada each year. Air pollution worsens heart problems and aggravates lung conditions, such as asthma and bronchitis. In people without respiratory conditions, air pollution reduces lung function and irritates the eyes nose and throat.

The Air Quality Health Index (AQHI) is a national tool available for people to help protect themselves from days of poor air quality. The AQHI measures air pollutants on a scale of 1 to 10+ (higher numbers mean worse air quality) on an hourly basis, and it also provides forecast maximums for your area. Use the AQHI to plan ahead for any outdoor physical or strenuous activities. The AQHI is now available in major cities in most provinces, and expanding to cover all major urban areas by 2011. Find out your local AQHI reading by visiting www.airhealth.ca.

One way to reduce the number of days with high AQHI readings is to become more environmentally friendly in your daily activities.

The “20/20 The Way to Clean Air” Campaign is designed to help individuals reduce both home energy use and vehicle use by 20 per cent, as well as reducing vehicle emissions when you do need to drive. By reducing your energy consumption and vehicle use, you are paving the way towards cleaner air, and fewer days of poor air quality.

This campaign provides you with practical tips, including adjusting your thermostat levels, using cold water for your laundry, cleaning your refrigerator coils, reducing “phantom power” in your electronics, keeping your car tires properly inflated, tele-working, trip-chaining, and carpooling.

To order a free 20/20 Planner with a step-by-step action plan to reduce your energy use call 1-866-583-2020 or visit www.cleanairpartnership.org/2020.

October 1, 2010:

[Ontario Closes 4 Coal Plant Units](#)

This morning in Ontario, 4 coal-burning units at Ontario power plants were permanently shut down. Each unit produces approximately 500MW of power, thus this closure removes about 2000MW of dirty coal energy from Ontario's power supply. For air quality purposes, this is roughly the equivalent of removing 2 million cars from Ontario's roads. Enough other power is available to keep the grid stable with the removal of this energy from the system.

Approximately 250 deaths in Ontario each year are attributed to the burning of coal. The shut down of these four units removes over 30% of Ontario's coal capacity, leaving 11 units online. The government of Ontario has committed to a shut-down of all coal units by the year 2014. More than 8000MW of clean energy has been added to the Ontario grid since 2003, and after today's closure, coal now only contributes 7 percent of Ontario's energy mix.

The Asthma Society of Canada is pleased to see the removal of these 4 coal units from Ontario's grid. Ontario is the first jurisdiction in North America to legislate the shutdown of coal-firing power plants, and this important milestone marks significant progress towards the goal.

- In 2005, four units at Mississauga Lakeview Generating Station were shut down
- Today, two units at Nanticoke Generating Station near Simcoe have gone offline
- Today, two units at Sarnia Lambton Generating Station have gone offline

4,484MW of coal production remains in use at the 11 remaining units. The government is studying the possibility of converting these units to burn other fuel, including biomass, a renewable fuel source. The ASC has partnered with other groups including the Ontario Clean Air Alliance, the Registered Nurses' Association of Ontario, and Canadian Physicians for the Environment to call for the government to remove all coal from Ontario's energy mix prior to the 2014 deadline.

November 1, 2010:

[Traffic linked to 'worsening' child asthma](#)

This morning's blog/news story comes to us from Australia, and a recent study published by the Medical Journal of Australia.

Read one of the news articles about the story by clicking [here](#), [here](#), or [here](#).

The study analyzed 609 children and adolescents in Australia between the ages of 0 and 19, who were rushed to Western Australia hospitals with asthma attacks between 2002 and 2006.

The researchers looked at air quality data leading up to these hospitalizations, and found that traffic-related pollutants rose significantly on the day before the asthma attack. Specifically for children aged 0-4, the odds of an emergency room visit rose 70% when vehicle emissions spiked. This happened even when air quality guidelines were being met, suggesting that more research is needed into the mixture of pollutants in vehicle emissions.

This study falls on the heels of other studies showing children living near major roadways experience asthma at a greater rate.

November 23, 2010:

[More on asthma and traffic](#)

One of the seemingly largest research areas into the causes of asthma has looked into traffic patterns. This blog has [written](#) about [this](#) topic previously.

Today, we found a [new study from Sweden](#) which takes a different twist on the issue of traffic.

They asked: is it just where you live that matters? Or could the location of your workplace and the amount of time spent in traffic each day also matter?

The first part of the study confirmed a growing body of evidence: in this study, someone who lived within 50m of a road which carries more than 10 cars per minute were more likely to have asthma, and suffer asthma symptoms.

The second part of the study, perhaps surprisingly, showed no link between the amount of time spent in traffic, the location of the workplace, or the total amount of time spent close to high-volume roads. It appears that the location of your home remains one of the few location-based factors affecting the prevalence of asthma.

Appendix 18: Postings on the AQHI and air quality issues at the ASC's Facebook fan page

June 16, 2010: New Asthma Society of Canada e-newsletter online:

<http://community.icontact.com/p/asthmasociety/newsletters/napa/posts/your-asthma-society-update-volume-2-issue-10> --> this newsletter provides a link to the new AQHI website, online survey, online poll, discussion blog, and audio blog.

June 21, 2010: Please take the AQHI online survey:

<http://www.surveymonkey.com/s.aspx?sm=d%2FqsqPcDJQwxzHfvf6Jje7DLYBkxQ%2BW4cbpqdaHmde0%3D>

July 30, 2010: July e-newsletter is now online.

Your Asthma Society Update, Volume 2, Issue 11 - iContact Community

Welcome to your July update from the Asthma Society of Canada. As your summer heats up, make sure you are taking proper precautions if the sudden weather changes of approaching thunderstorms or the chlorine from swimming pools are triggers for your asthma. → this newsletter provides a link to the AQHI website, online survey, online poll, discussion blog, and audio blog.

August 5, 2010: Need to check your local air quality? Want to know the humidity? Download the Asthma Widget <http://www.asthma.ca/widget/>

August 18, 2010: Does poor air quality make you want to reduce your energy footprint? Take the 20/20 Challenge to reduce your home and vehicle energy consumption by 20% each, and save money at the same time! 20/20: The Way to Clean Air. www.cleanairpartnership.org/2020

August 18, 2010: Take the 20/20 Challenge to reduce your home and vehicle energy consumption by 20% each. www.toronto.ca/health/2020.

August 23, 2010: The Air Quality Health Index measures your local air pollution to help you manage your asthma outdoors. www.airhealth.ca.

September 8, 2010: Enjoy good air quality Canada! Not a single AQHI forecast higher than 4 today or tomorrow. Check your numbers regularly at www.airhealth.ca

September 28, 2010: The Air Quality Health Index measures your local air pollution to help you manage your asthma outdoors. www.airhealth.ca.

Appendix 19: The news release about the “Asthma Today” Widget

Asthma Society of Canada releases “*Asthma Today Widget*”

Simple desktop tool provides real time, local information for people with asthma and associated allergies

Toronto, Ontario - May 4, 2010: The *Asthma Today Widget*, a new, interactive virtual tool downloadable at no charge from the Asthma Society of Canada’s website, will help people stay up-to-date on issues surrounding asthma and associated allergies and make informed decisions about their daily activities. The software is easy to download, easy to access and even easier to use.

The *Asthma Today Widget* gives instant access from a computer or laptop, to the Air Quality Health Index (AQHI), available for a number of Canadian cities, local weather forecast and relative humidity, as well as important updates from the Society on new programs, educational materials, research and advocacy initiatives.

Access to timely environmental and weather information can make a significant difference for people with asthma, since high humidity levels and certain weather conditions can trigger an asthma attack or allergies.

“The potential for this kind of ‘app’ to reach people with asthma and associated allergies is promising” says Christine Hampson, President and CEO of the Asthma Society of Canada. “Conveying information to people through a medium which is highly accessible and delivered directly to them, will empower people to be actively informed on important issues, and adjust their asthma management plans to better control their asthma or allergies.”

It only takes two simple steps to download the *Asthma Today Widget*, plus the relevant postal code, to access local weather and relative humidity. The widget page is well laid-out, clean and easy to read, even on small screens, and when it is minimized, the Society’s trade-mark blue butterfly logo appears.

“The *Asthma Today Widget* is an easy way to stay in touch with the Society on pressing issues,” says Debbie Valentini, NAPA Executive Committee member, who has endured asthma all her life. “Because it is updated automatically whenever I access it on my computer, I always have the latest news. It also gives me the information I need to plan my outdoor activities appropriately. This is going to help me live well with my asthma.”

Download the *Asthma Today Widget* at www.asthma.ca/widget/ to determine factors and forecasts for increased asthma and allergy severity.

For more information please contact:

Sabrina Panetta
Asthma Society of Canada
416-787-4050
sabrina@asthma.ca



Appendix 20: An information letter about the “Asthma Today” Widget

Dear (input name),

The Asthma Society of Canada (ASC) has launched the *AsthmaToday Widget* in celebration of World Asthma Day. The *AsthmaToday Widget* is an interactive, virtual tool for people living with asthma and associated allergies, to stay informed on important issues and information needed to plan outdoor activities.

The *AsthmaToday Widget* can be downloaded to your computer or laptop to gain instant access to the local Air Quality Health Index (AQHI), available for a number of Canadian cities, as well as local weather forecasts and relative humidity. The *AsthmaToday Widget* also provides the latest news updates from the Society on programs, educational materials, research and advocacy initiatives.

The *AsthmaToday Widget* software is easy to use and can be downloaded free of charge from the ASC’s website at: www.asthma.ca/widget/

We invite you to review the *AsthmaToday Widget* and forward this information to your contacts who would be interested in this new tool.

Please find attached the *AsthmaToday Widget* News Release and Fact Card for more information.

Thank-you for your attention to this update!

Sincerely,

(input name)

Appendix 21: The “Asthma Today” Widget as featured at AllerGen NCE Inc. website



Available at: <http://www.allergen-nce.ca/>



Asthma Today Widget

The Asthma Society of Canada's Asthma Today Widget runs on your computer and shows you the latest asthma news and weather for your region.

[Asthma Today Widget](#)

Appendix 22: The “Asthma Today” Widget as featured at Anaphylaxis Canada website



Available at: <http://www.whyriskit.ca/pages/posts/asthma-society-of-canada-releases-allergy-today-widget27.php>

Asthma Society of Canada releases "Asthma Today Widget"

Toronto, Ontario - May 4, 2010: The Asthma Today Widget, a new, interactive virtual tool downloadable at no charge from the Asthma Society of Canada's website, will help people stay up-to-date on issues surrounding asthma and associated allergies and make informed decisions about their daily activities. The software is easy to download, easy to access and even easier to use.

The Asthma Today Widget gives instant access from a computer or laptop, to the Air Quality Health Index (AQHI), available for a number of Canadian cities, local weather forecast and relative humidity, as well as important updates from the Society on new programs, educational materials, research, and advocacy initiatives.

Read More about the [Asthma Today Widget](#)

Appendix 23: The TELUS Health Space online blog story about the “Asthma Today” Widget

Consumer Health Think Tank | - Windows Internet Explorer
http://thinktank.telushealthspace.com/default.aspx

File Edit View Favorites Tools Help

Consumer Health Think Tank |

TELUS health space™

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Posting guidelines

Asthma Today Widget helps with planning outdoor activities
Posted by [Christine Hampson](#) on November 11, 2010

In my first post I discussed how e-Health tools can empower Canadians with asthma to improve their health and quality of life by managing their disease more effectively. In this post I would like to discuss a specific example of a tool that the Asthma Society of Canada is using with success. We recently launched the AsthmaToday Widget – this is an interactive, virtual tool for people living with asthma and associated allergies to stay informed on important issues and the information they need to plan outdoor activities. It can be downloaded free from our website at www.asthma.ca/widget to a computer or laptop. The AsthmaToday widget provides instant access to the local Air Quality Health Index (AQHI) as well as local weather forecasts and relative humidity. Access to timely environmental and weather information can make a significant difference for people with asthma since high humidity levels and certain weather conditions can trigger an asthma attack or allergies. Providing this information through a medium that is highly accessible and updated automatically as it is delivered to their desktop will empower people to be actively informed and adjust their asthma management plans accordingly. I encourage readers of this blog to download the widget, check out its features and then make a point of forwarding the link to someone you know with asthma or with asthma in their immediate family.

To download the Widget, please visit: <http://www.asthma.ca/widget/>

AsthmaToday widget

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Comments: 4

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Comments: 3

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AAN ASC asthma management Asthma Society of Canada baby_boomers Canada Canadian_Medical_Association Commonwealth Fund Confidentiality Dr. Allan Brookstone eHealth EHR

Done, but with errors on page. Internet 100%

Asthma Today Widget helps with planning outdoor activities

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To download the Widget, please visit: <http://www.asthma.ca/widget/>

Appendix 24: The pitch on air pollution developed by the ASC in partnership with Bullfrog Power, July 2010

Air pollution affects thousands of Canadians annually and can cause lost productivity, pain and suffering, as well as exacerbations of respiratory diseases, increased respiratory infections, and increased numbers of hospitalizations from respiratory and cardiovascular disease sufferers. Extensive studies have shown that air pollution is a key trigger of asthma and associated allergies due to the elevated levels of air contaminants, which are harmful to human health, including respirable particulate matter and gaseous pollutants (e.g. nitrogen dioxides, sulphur dioxide, ozone). These air contaminants predominantly arise from human activities, particularly the burning of fossil fuels, including gasoline, diesel, natural gas, coal and oil from conventional electricity generation industries. The Asthma Society of Canada (ASC) is committed to empowering adults and children with asthma and associated allergies to breathe easier and recognizes the vital importance of clean air and a healthy environment. In recognition of these harmful energy sources, the ASC has partnered with Bullfrog Power, Canada's 100% green electricity provider to service its power needs. Bullfrog's electricity comes exclusively from wind and hydro facilities that have been certified as low impact by Environment Canada under its EcoLogo^M program instead of from polluting sources like coal, oil, natural gas, and nuclear energy. The ASC also promotes the use of the Air Quality Health Index (AQHI), a web-based scale which describes a local reading of air quality as it relates to your health. The AQHI is calculated daily based on the combination of harmful air pollutions in the air, and serves to promote better health outcomes for individuals by encouraging positive lifestyle choices based on current AQHI readings. The AQHI can be accessed from the ASC's main website at www.asthma.ca, as well as through the Asthma Today Widget which can be downloaded at www.asthma.ca/widget.

Appendix 25: The “Asthma Today” Widget promo card

AsthmaToday Widget!

The Asthma Society of Canada (ASC) has launched a new AsthmaToday Widget!

The AsthmaToday Widget is a useful tool for people living with asthma and associated allergies to stay informed on important issues and information needed to plan your outdoor activities.

The AsthmaToday Widget can be downloaded to your computer or laptop to gain instant access to the Air Quality Health Index (AQHI), available for a number of Canadian cities, local weather forecasts, and the latest news updates from the ASC on programs, educational materials, and research.

The AsthmaToday Widget software is easy to use and can be downloaded free of charge from the ASC's website:
<http://www.asthma.ca/widget/>




Asthma.ca
Asthma Society of Canada

Appendix 26: The “Asthma Today” Widget story in the Hospital News newspaper, June 2010

Simple desktop tool provides real time, local information for people with asthma

The *AsthmaToday Widget*, a new, interactive virtual tool downloadable at no charge from the Asthma Society of Canada’s website, will help people stay up-to-date on issues surrounding asthma and associated allergies and make informed decisions about their daily activities. The software is easy to download, easy to access and even easier to use.

The *AsthmaToday Widget* gives instant access from a computer or laptop, to the Air Quality Health Index (AQHI), available for a number of Canadian cities, local weather

forecast and relative humidity, as well as important updates from the Society on new programs, educational materials, research and advocacy initiatives.

Access to timely environmental and weather information can make a significant difference for people with asthma, since high humidity levels and certain weather conditions can trigger an asthma attack or allergies.

“The potential for this kind of ‘app’ to reach people with asthma and associated allergies is promising” says Christine

Hampson, President and CEO of the Asthma Society of Canada. “Conveying information to people through a medium which is highly accessible and delivered directly to them, will empower people to be actively informed on important issues, and adjust their asthma management plans to better control their asthma or allergies.”

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This is going to help me live well with my asthma.”

Download the *AsthmaToday Widget* at www.asthma.ca/widget/ to determine factors and forecasts for increased asthma and allergy severity.

Submitted by Sabrina Panetta, project coordinator for the Asthma Society of Canada. For more information contact: sabrina@asthma.ca

Available at: http://www.hospitalnews.com/content/magazines/Jun10/HN_June2010_lowres.pdf

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Download the *Asthma Today Widget* at www.asthma.ca/widget/ to determine factors and forecasts for increased asthma and allergy severity.

Appendix 27: Links to the pre-recorded webinar sessions on the AQHI and air quality, Asthma Ambassadors program

Toronto:

<http://www.instantpresenter.com/asthma/EF56DD8580>

New Brunswick:

http://www.instantpresenter.com/WebConference/RecordingDefault.aspx?c_psrId=E055D68381

Nova Scotia:

<http://www.instantpresenter.com/asthma/E055D68286>

Appendix 28: The list of local environmentally friendly programs included in the trainer-the-trainer and educational kits, Asthma Ambassadors program

Ontario Environmental Programs

20/20 The Way to Clean Air (City of Toronto and Greater Toronto Area) – this program provides a planner to help residents reduce home energy use and vehicle use by 20%. Visit <http://www.toronto.ca/health/airquality/2020/about.htm> for more details or <http://www.toronto.ca/health/airquality/2020/pdf/2020planner.pdf> for a **free** copy of the planner.

The Great Refrigerator Roundup – if you have an old, inefficient second fridge in your home, you can save \$150 per year on your electricity bill by getting rid of it. Visit <http://everykilowattcounts.ca/residential/fridge/> to book an appointment for staff from the Ontario Power Authority to come pick it up for **free**! This can also apply to freezers, window air conditioners and dehumidifiers that you no longer need.

Cool Savings Rebate – if you're looking to replace your old central air conditioning or heating systems with *Energy Star* models or would like to have a programmable thermostat installed in your home, you can qualify for some great rebates! Visit <http://everykilowattcounts.ca/residential/coolingsavings/> for more details about the rebates and how to find *Energy Star* models.

Peaksaver – receive a \$25-\$75 credit for enrolling in this program which has your utility company installing a device in your home to automatically change your home's temperature during peak electricity demand. Visit <http://everykilowattcounts.ca/residential/peaksaver/how-to-enrol.php> for more details.

Car Heaven – this program helps retire old, higher-polluting vehicles and ensures that these vehicles are recycled in an environmentally responsible manner. Visit <http://www.carheaven.ca> for more information.

Ecoaction Teams – this website provides tips and information for Canadians to improve their well-being and lessen their impact on the environment. It includes a calculator with 50 activities to cut back energy and water use, waste production, and fuel dependency and measures your potential savings by completing these activities. Visit <http://www.ecoactionteams.ca/pub/index.php> for more details.

EcoSuperior (Thunder Bay area) – this includes a program that lends out kill-o-watt devices to residents to test electronic devices in their home and see how much energy it is using while running. Visit <http://www.ecosuperior.org/article/detecting-phantom-load-123.asp> for details.

Union Gas (Northern, Southwestern, and Eastern Ontario) – residents of Union Gas can receive a **free** Energy Saving Kit which includes an energy efficient showerhead, kitchen and bathroom aerators, Teflon tape, and foam pipe insulation. Visit <http://www.uniongas.com/residential/energyconservation/energysavings/eskindex.asp> for more details.

Ontario Home Energy Rebates – the Government of Ontario provides rebates to homeowners who would like to replace and upgrade their heating, ventilation, cooling, and domestic hot water systems, as well as insulating the ceiling, attic, roof, exterior wall, exposed floor, basement, or crawl space, and replacing skylights, windows, and exterior doors with *Energy Star* qualified models. To do this, homeowners can go through an energy assessment and finding out more information at <http://www.homeperformance.com/ontario-rebate-grants-ontario-government-energy-rebates>

Live Green Toronto – this program promotes and supports the greening of Toronto by offering grants, expertise and a website full of resources, rebates, tips, and tools to help residents and businesses take

action to reduce emissions, protect our climate and clean our air. There is now a membership card available that allows residents to receive special offers and discounts at participating green-committed businesses in Toronto. <http://www.toronto.ca/livegreen/index.htm>

New Brunswick Environmental Programs

The following are a number of environmental programs or organizations found in New Brunswick. These groups provide information and tips on ways that residents can reduce their impact on the environment, thus improving the quality of the air and our health.

Efficiency NB – this organization provides links to numerous financial incentives and programs for residents interested in upgrading their homes and making them more energy efficient. For further details, please go to <http://www.energycynb.ca/enb/1600/Residential>

Green Matters (Fredericton) – the City of Fredericton has created this website with useful tips on how residents can reduce their carbon footprint, list environmental events happening in the city, spotlight local green businesses, discuss funding green projects in the province, and provide facts on climate change science. For more information, please visit <http://greenmatters.icreate2.esolutionsgroup.ca/en/index.asp>

New Brunswick Department of the Environment – official website of the New Brunswick government offering programs, tips, and public advisories. To find the site, please visit <http://www.gnb.ca/0009/index-e.asp>

New Brunswick Climate Change Public Education and Outreach Hub – goal is to increase awareness about the causes and consequences of climate change, and what individuals, communities, and corporate entities can do to reduce greenhouse gas emissions, adapt to inevitable impacts, and create a sustainable, low-carbon society. <http://www.nbhub.org>

Sustainable Development (Bathurst) – it is the mandate of this organization to facilitate interactions between members of the community, businesses, industry, municipal governments, representatives from provincial government departments and all others interested in the betterment of the environmental quality, economic health and social well being of the residents of this area. <http://www.bathurstsustainabledevelopment.com>

New Brunswick Environmental Network – provides a listing of different community groups in the province working on various environmental projects. http://nben.ca/nben_index.htm

Canadian Network for Human Health and the Environment (CNHHE) – covers broad human health-related environmental issues relating to air, water, soil, food, climate change and consumer products. <http://www.cnhhe-rcshe.ca>

Nova Scotia Environmental Programs

DrivewiseR – this program helps drivers use the least amount of fuel possible and make their vehicles more efficient in order to save money and reduce CO2 emissions. **Free** annual Green Check-Ups are conducted by qualified mechanics to check everything in a vehicle that can affect fuel efficiency and emissions. For more information, please visit <http://www.drivewiser.ca>

Clean Nova Scotia – Sustainable Landscaping – clean Nova Scotia provides quality environmental education and information in a number of areas. The sustainable landscaping section provides details on how to manage a healthy lawn and also offers a **free** sustainable lawn assessment which includes a detailed information package with recommendations on water usage, aeration, and natural pest control

tailored to each property and site conditions. For more details, visit http://www.clean.ns.ca/content/Sustainable_Landscaping_Greenyar

Clean Nova Scotia - Environmental Home Assessment Program – clean Nova Scotia delivers the Environmental Home Assessment Program to the Central and Northern Regions of the province. This program provides homeowners living on septic systems and private water supplies with a **free** and confidential home visit and visual inspection of their septic system, well head, and oil tank. In addition, a rebate of up to \$50 and a septic system repair grant of up to \$3,000 may be available to those who qualify. For more information, please visit http://www.clean.ns.ca/content/EHAP_Overview

Clean Nova Scotia - Home Energy Evaluations – clean Nova Scotia provides home energy evaluations to the Halifax Regional Municipality and the southwest region of Nova Scotia. In addition, it offers energy evaluations on Multi Unit Residential Buildings (MURBS) throughout the province. For more information, please visit http://www.clean.ns.ca/content/CCE_Home_Energy_Eval_Home

Heritage Gas Equipment Rebate Program – this incentive program encourages residents and businesses in Nova Scotia to convert to natural gas using the highest efficiency equipment available. Homeowners with an annual consumption of less than 25,000 GJ can receive rebates and find out more at <http://www.heritagegas.com/business/rebates-conversion-assistance.html>

Atlantic Coastal Action Program (Cape Breton) – this community organization provides information for Cape Breton residents on how to conserve water and energy and encourage composting. It also provides an electronics recycling program and a location for special household waste disposal, low flow toilet rebate program, and showerhead swap program. For more information, please visit <http://www.acapcb.ns.ca/index.html>

Appendix 29: The list of the media interviews conducted by the ASC, 2010

During the summer months of 2010, the ASC conducted a number of media interviews relating to poor air quality during the warmer months and the importance of the AQHI. The following are the listings of the media interviews conducted by the ASC on the related topics:

July 6, 2010: The Weather Network interview promoting the AQHI

July 7, 2010: City TV interview about asthma and smog

August 3, 2010: CBC Radio One Interview on the AQHI (ran as a “Top Story” for the week)

August 3, 2010: Global News interview on the AQHI and asthma

August 4, 2010: Global TV Interview posted on the main ASC website which talked about the AQHI

References

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- ¹ Burnett RT, et al. Effects of low ambient levels of ozone and sulfates on the frequency of respiratory admissions to Ontario hospitals. *Environ Res* 1994; 65:172-94.
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- ⁴ Oyana TJ, Rivers PA. Geographic variations of childhood asthma hospitalization and outpatient visits and proximity to ambient pollution sources at a U.S.-Canada border crossing. *Int J Health Geogr* 2005; 4:14.
- ⁵ Schwartz, et al. Particulate air pollution and hospital emergency room visits for asthma in Seattle. *Am Rev Respir Dis* 1993; 147:826-31.
- ⁶ Thurston, et al. A multi-year study of air pollution and respiratory hospital admissions in three New York State metropolitan areas: Results for 1988 and 1989 summers. *J Expo Anal Environ Epidemiol* 1992; 2:429-50.
- ⁷ National Air Quality Health Index and Forecast program Logic Model, version 8, October 9, 2008. Obtained from Environment Canada, November 2009.
- ⁸ Environment Canada, 2011 Accessed at <http://www.ec.gc.ca/default.asp?lang=En&xml=96A60BC9-0097-4701-A71D-43024C184D0C>
- ⁹ iMD Health <http://www.imdhealth.ca>
- ¹⁰ Asthma Ambassadors program, can be accessed at <http://www.asthma.ca/ambassadors>
- ¹¹ "Taking Control of Your Asthma" e-learning module, Available at <http://pubmodules.machealth.ca/asthma/management/player.html>