BC first to implement new Air Quality Health Index

Fresh air—it's one of BC's most well-known resources. But how do BC residents know if the air is actually clean or if it contains pollutants that are harmful to health? Well, due to the dedication of provincial and national health and environment partners, BC now has the first Air Quality Health Index (AQHI) in the world. The AQHI communicates the relative acute health risks associated with air pollutants. More than 80% of BC residents can now check the AQHI (hosted at www.airplaytoday.org) to get real-time local air quality readings, related health and activity messages, and a local air quality forecast.

AQHI based on empirical data

The Air Quality Health Index is the result of more than 5 years of research and development by a pan-Canadian team of health and environmental air quality experts from Interior Health, the BC Ministry of Environment, Health Canada, and Environment Canada. The index is generated through an equation representing the multivariate correlation between pollutant levels and mortality in seven Canadian cities over 7 years. The coefficients for the equation have, and continue to be, validated against other international data sets and other health outcomes.

The AQHI is generated from averaged real-time monitoring of the indicator pollutants—ozone, (fine particles), $PM_{2.5}$, and nitrogen dioxide. Presented as an open-ended scale of 1 to 10, the index is updated hourly and includes a reliable 24-hour forecast of predicted maximums. In addition to the numerical scale, the AQHI includes messages that encourage activity during better air quality days, provide specific advice for both the general and risk populations, and promote emission reduction behaviors.

AQHI available to 80% of BC residents

The AQHI is currently available to residents in the GVRD, Fraser Valley, lower Vancouver Island, and some Interior valleys. AQHI reporting and forecasting requires three pollutant monitors that are not available in all BC locations, including some communities that have a significant impact on their own localized air sheds. Evaluation of forecast models and their application to communities without three pollutant air quality monitors is currently being explored.

Air pollution linked to poor health outcomes

Clear correlations exist between air pollution and reduced lung function, increases in asthma attacks, and increases in respiratory symptoms and disease. These negative health impacts associated with air pollution are observed in increased frequency of medication use, doctor visits, and emergency room visits. In addition, cardiovascular mortality and hospitalizations are increased following higher air pollution days and are an underrecognized risk associated with poor air quality.

BC residents support the AQHI

Two years of pilot studies and evaluation have produced rich data about the acceptance and use of the AQHI. Overwhelmingly BC residents support the AQHI, with more than 90% agreeing that the AQHI is clear and that its purpose is evident. Twenty-nine percent of respondents will use the AQHI daily, and another 30% will use it when they perceive a change in air quality. Almost 20% of survey respondents changed their behaviors in response to the AQHI level.

More education needed

The AQHI is designed to help at-risk individuals self-calibrate their activity to the actual air quality and to limit exposure during periods of poor air quality. However, research reveals a significant gap between an individual's perceived risk (30%) and the presence of a diagnosis that put that individual at risk (45%). Work is now being done to support physicians and other health care workers in the use of the AQHI as an adjunct to clinical management of persons with known risk conditions.

BC's success sparks national implementation

BC is the first Canadian jurisdiction to successfully overcome technical barriers and communicate the AQHI to the public—and because of this leadership, up to 50% of Canada's population will soon be able to access the AQHI. In the summer of 2007, Toronto, Windsor, Montreal, and parts of Nova Scotia will begin AQHI implementation, and many other regions in Canada are currently investigating their reporting and communication capacities working toward a potential national roll-out in 2008.

Take a deep breath. In BC we now know when it is a breath of fresh air.

For more information on the Air Quality Health Index visit www.airplaytoday.org

To comment on the AQHI initiative, complete the survey at www.airplaytoday.org/whatdoyouthink.htm.

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