The Faces of Asthma

Over the next year, the Breathing Space newsletter will include articles that offer a more personal view and perspective about asthma from the patient, the caregiver, and the whole health care team. We hope that these unique perspectives will offer you, the reader, a new way of looking at the “Faces of Asthma.”

Paul Iverson, Pharmacist:

The importance of asthma management education

Paul Iverson is a Pharmacist living in Bemidji, MN. He is President of Iverson Corner Drug (www.iversoncornerdrug.com) and of Progressive Health Care (www.phcofbemidji.com). He is a past recipient of the Minnesota Pharmacists Innovative Practice Award and has also earned certificates in asthma education, smoking cessation and medication therapy management.

My interest in asthma started when I heard a speaker at a national pharmacy meeting talk about asthma and how pharmacists could positively...
well-controlled asthma, as indicated by scores on asthma control questionnaires; one or less ED visits or hospitalizations each year; and the patient having a written asthma action plan (AAP).

New MNCM data show that the percentage of patients—both children and adults—receiving optimal asthma care increased in Minnesota between the 2010/11 and 2011/12 reporting periods. The chart below shows the increases for both children and adults. In the words of MNCN, “This means that nearly 4 out of 10 children and 3 out of 10 adults with asthma received care that included treatments to control their symptoms, reported fewer than two hospitalizations or emergency department visits, and received information about asthma and a written asthma plan.”


---

**Fruit & Fast Food: The Connection to Asthma, Rhinocconjunctivitis, and Eczema**

Results from the International Study of Asthma and Allergies in Childhood Phase III, a 20-year epidemiological study of over 2 million children, provide evidence that consumption of fruit three or more times per week has a potential protective effect on severe asthma, while an increased risk of severe asthma in children and adolescents was associated with the consumption of fast food three or more times per week.

For the abstract, go to [http://thorax.bmj.com/content/early/2013/01/03/thoraxjnl-2012-202285.abstract](http://thorax.bmj.com/content/early/2013/01/03/thoraxjnl-2012-202285.abstract).

For an article with a deeper overview, go to [bit.ly/SJVOEi](bit.ly/SJVOEi).

To learn more about the International Study of Asthma and Allergies in Childhood (ISAAC), go to [http://isaac.auckland.ac.nz/](http://isaac.auckland.ac.nz/).
New: Scope of COPD in Minnesota 2013 Report

The Scope of COPD in Minnesota report provides data available for Chronic Obstructive Pulmonary Disease (COPD) prevalence, hospitalizations, mortality, and emergency department visits in Minnesota. COPD is a group of lung diseases that makes it difficult to breathe; other names for COPD include emphysema and chronic bronchitis. The report is a collaborative effort of the American Lung Association in Minnesota and the MDH Minnesota Environmental Public Health Tracking Program (MN EPHT). Some highlights from the report:

- In 2011, 4.1% of Minnesota adults reported ever being told that they had COPD. That translates to over 164,000 Minnesotan’s living with COPD.
- Smoking is the leading cause of COPD. In 2011, over 79% of adults with COPD in Minnesota smoked or used to smoke.
- Over 44% of Minnesota adults with COPD do not take any daily medication for COPD and about 35% still smoke. There is an opportunity for improved management of COPD.


MN EPHT is supported by a cooperative agreement with the Centers for Disease Control and Prevention, National Tracking Network.

Flu Season Update: What You Should Know

Minnesota’s influenza activity peaked between the last week of 2012 and the first two weeks of January 2013. The dominant strain seen this season is influenza A/H3. Unlike the 2009 pandemic strain, this strain typically causes the most morbidity and mortality in the elderly population. As of February 2013 there have been 138 confirmed influenza outbreaks in Minnesota long-term care facilities, 459 outbreaks of influenza-like illness (ILI) in Minnesota schools, 2,612 hospitalizations and 127 deaths in all age groups due to influenza. This represents a fairly severe non-pandemic season.

Most of the strains circulating this season are well matched to the vaccine. Although the vaccine is not 100% effective at preventing influenza, it can still significantly reduce the number of cases as well as influenza-related complications and deaths. The Centers for Disease Control and Prevention (CDC) as well as MDH recommend universal influenza vaccination, meaning everyone over 6 months should get the vaccine. For those with underlying conditions that put them at higher risk for complications from influenza, such as asthma, vaccination is even more important.
Minnesota Tribal Asthma Data Profile

The MDH Asthma Program recently released an updated fact sheet showing the burden of asthma among American Indians. The fact sheet covers information such as the prevalence (percentage) of asthma broken down by age, race/ethnicity, and sex; and levels of asthma-related emergency department visits and hospitalizations, which is indicative of asthma exacerbations (attacks). It is important to note that for both prevalence and exacerbations, American Indians experience higher rates than other ethnic/racial groups.

Data from the 2010 Minnesota Student Survey show that American Indian students in grade 12 had the highest prevalence of asthma compared with other groups, and the second highest prevalence among 6th and 9th graders.

The data come from a number of sources, including Indian Health Services, MN Student Survey, MN Youth Tobacco and Asthma Survey, and MN Department of Human Services.

For the complete fact sheet, go to http://www.health.state.mn.us/asthma/documents/tribalasthmadatareportmn.pdf (PDF: 447KB/2 pages).

Tribes may request asthma data profiles for their communities by contacting Jason Douglas, Bemidji Area Office statistical officer, 218-444-0550, jason.douglas@ihs.gov.

For more information on Minnesota asthma data, please contact Wendy Brunner, MDH Asthma Program epidemiologist, 651-201-5895, wendy.brunner@state.mn.us.

Asthma Tribal Network Call for Members

The White Earth Health Center is building the Minnesota Tribal Asthma Resource Network which will work with Indian Health Service sites and Tribal Health sites in Minnesota to alleviate the burden of asthma among tribal communities. The Network hopes to share resources and assist to build asthma programs that serve tribal communities. It welcomes input, feedback, and help in creating this network from health care professionals working with tribes across Minnesota. The network’s focus is health care professionals, but it is open to anyone who works with tribal communities.

continued on page 5
May is Asthma Awareness Month

Do you have local activities or events planned for World Asthma Day or throughout the month of May?

If so, tweet it at #AsthmaAwarenessMonth, and share what you are doing by sending an e-mail with the following information to Kelly Raatz, MDH Asthma Program Coordinator at kelly.raatz@state.mn.us.

Please include the following:

- Title and description of event/activity
- Date of Event
- Intended Audience or Participants
- Collaboration with any partners

Web resources: The US Environmental Protection Agency (EPA) encourages all asthma stakeholders to raise awareness about asthma during the month of May. Here is the link to the EPA website for event planning: [http://www.epa.gov/asthma/awareness.html](http://www.epa.gov/asthma/awareness.html).

The Asthma Community Network hosts a searchable map of events at: [http://www.asthmacommunitynetwork.org/events](http://www.asthmacommunitynetwork.org/events).

As spring comes, remember: with proper management, asthma need not limit children’s physical activity.

Stay Tuned! Asthma Alliance Meeting in October 2013. Details in June!
What are ACEs?

- An ACE is a traumatic experience in a child or young adult’s life.
- ACEs include household dysfunction, violence, abuse, and neglect.
- The presence of ACEs affect physical, cognitive, and emotional development.
- ACEs are common in Minnesota, and often occur together.
- ACEs are a reliable indicator of future health outcomes.
- ACEs have been studied for over 20 years.

By reducing ACEs we can reliably expect a reduction in many ACE-related health and social problems.

Adverse Childhood Experiences and Asthma in Minnesota

New data from the MDH Center for Health Statistics demonstrate that chronic stress and traumatic experiences experienced as children are linked to poor health outcomes in adulthood. These findings, based on Minnesota Risk Factor and Behavioral Surveillance System Data, have been repeatedly validated in California (http://tinyurl.com/b95gc5h/), Washington (http://tinyurl.com/WashingtonStateBRFSS), and several other states (http://www.cdc.gov/ace/year.htm).

The study measures “adverse childhood experiences” (ACEs) which produce traumatic environments for developing children. These include household dysfunction such as divorce/separation, alcoholism/drug use, incarceration of household member, mental illness of parent, and domestic violence toward a parent; abuse, in physical, sexual, emotional/verbal forms; and physical and emotional neglect. The resulting ACE score is the number of categories to which one is exposed. It does not attempt to measure frequency of events, severity of experience, duration or age at exposure.

These ACE scores are measured against chronic disease, death and disability outcomes. Statistically significant relationships are apparent. It is found that ACEs are a major contributor to chronic disease, including asthma.

Minnesotans reporting five or more ACEs were more than twice as likely to have asthma as adults reporting no ACEs.

The trends are similar for diabetes, obesity, anxiety, depression, chronic drinking, and poor or fair health status.

Smoking is also linked to Adverse Childhood Experiences.
Adverse Childhood Experiences are common in MN. Of the 13,520 Minnesota adults surveyed, 55% of them have one or more. Forty percent have one, 22% have 2, 15% have three, 9% have 4, and 15% have five or more. “The significance of this study is that it shows that these experiences, which can significantly affect the health and well-being of adults decades later, are much more common in Minnesota than one might expect,” said Dr. Ed Ehlinger, Minnesota Commissioner of Health.

“The hopeful part of ACEs research is that it is stimulating communities to take action to protect children early in their lives and find new ways to help children, families, and communities to become more resilient,” Ehlinger said. “We will use this information to launch similar efforts here in Minnesota.”

To read the executive summary of the findings, entitled “Adverse Childhood Experiences in Minnesota: Findings and Recommendations based on the 2011 BRFSS,” go to http://www.health.state.mn.us/divs/chs/. You can find the complete data appendix there as well.

Minnesota Governor Announces Budget Proposal

Governor Mark Dayton’s fiscal year 2014-2015 budget, announced on January 22, 2013, includes several measures related to lung health, including a proposal to raise price of cigarettes by 94 cents a pack. When the price of tobacco increases, fewer young people start smoking and more people make an attempt to quit. According to the Campaign for Tobacco Free Kids, an increase of 94 cents in the cigarette tax would keep 25,800 Minnesota kids from becoming addicted to tobacco and would help 19,300 Minnesotans quit. Such an increase would also reduce long-term healthcare costs by over $856.31 million.

The budget also contains a proposal for expanding Medical Assistance eligibility for low-income and disabled people, improving health outcomes for this population. This proposal, which became House File 9, passed both bodies of the Legislature on February 14, 2013.

This means that more than 87,000 Minnesotans will have access to affordable health insurance beginning in 2014, including 34,000 who currently have no insurance. Additionally, this move saves the state $129 million in the FY 2014-15 biennium, because the federal government will pick up 100 percent of the cost for all of those who are newly eligible for Medicaid through the Affordable Care Act.

The link to the bill is http://www.mmb.state.mn.us/bis/fnts_leg/2013-14/H0009_2E.pdf.
Asthma: A History

2697 BCE: Earliest reference to wheezing and respiratory distress is recorded in China. Yellow Emperor Huang Ti wrote in his Classics on Internal Medicine: “Man is afflicted when he cannot rest and when his breathing has a sound.”

1750 BCE: Babylonian Code of Hammurabi records symptoms of breathlessness: “If a man’s lungs pant with his work ... When the breath of a man’s mouth is difficult.”

1500 BCE: First use of an inhaler recorded in a medical treatise from Egypt known as Eber Papyri. “Thou shalt take one heated stone and place these remedies on it and cover it with a new vessel whose bottom is perforated and place a stalk of a reed in this hole; thou shalt put thy mouth to this stalk, so that thou inhalest the smoke.”

321 BCE: Alexander the Great records Hindu practitioners of Ayurvedic medicine smoking the plant Datura Stramonium to relax the lungs. Millennia later, the chemical atropine was extracted from this plant; similar compounds are still used in asthma treatment today.

300 BCE: Greek physician Hippocrates describes ‘aazein’ as lung spasms in his treatise, Corpus Hippocraticum.

40 CE: Roman philosopher Seneca, who had asthma, writes of an attack: “Everything else is just an illness, while [asthma] is gasping out your life-breath ... it is a ‘rehearsal for death.”

200 CE: Greco-Roman physician Galen identifies asthma symptoms and established that asthma was caused by bronchial constrictions. His prescribed treatment was wine.

300 CE: Chinese physician Zhang Zhongling’s Essential Prescriptions of the Golden Chest includes discussions of labored/panting breath (chuan) and wheezing (xiao). It is common to prescribe ma-huang (Ephedra sinica), an herb made into a tea or heated and inhaled. This actually worked; the herb contains ephedrine, which is a beta-agonist and dilates the bronchial tracts.

400 CE: The Jewish Talmud describes “drinking three weights of hiltith,” a carrot-like extract, to cure asthma.

865 CE: Islamic physician Abu Bakr Muhammad ibn Zakariya al-Razi is the first to note the association between allergy and asthma. He notes that the nasal symptoms brought on by spring pollinating flowers was often accompanied by “coughing, tightness of breath.”

1150: Jewish physician and rabbi Maimonides publishes the Treatise on Asthma in which he noted that Egypt’s dry air helped asthma sufferers.

1600: Flemish nobleman Joan Baptiste van Helmont in his manuscript, “Van Helmont’s works containing his most excellent philosophy, physick, chirurgery, anatomy,” writes that women had a specific form of asthma, which he attributed to the presence of the womb. “One [form of asthma] is indeed Womanish, depending only on the government of the Womb, stemming from the foul or stinking Vapours ascending from the Womb to block the Pores of the Lungs.”

1682: Bernardino Ramazzini, known as the Father of Occupational Medicine, is first to articulate the connection between some professions and asthma, such as bakers, millers, and grain measurers, farmers and horseback riders.

1700: English physician John Floyer writes of tobacco as a trigger: “During the Fit of the Asthma, the Smoak of Tobacco is so offensive that it very much straitens the Breath, if it be smoaked the first Day of the Fit, and endangers a Suffocation.”

1816: French doctor Rene Laennec born. He later invents the stethoscope, which allowed doctors to better hear the sounds a patient’s lungs were making. His first model was a simple wooden tube.

1846: John Hutchinson invents a spirometer which can accurately measure a volume of air.

continued on page 9
1879: In an era of “Patent Medicine,” asthma cigarettes come into fashion among urbane asthmatics in America and Europe. The cigarettes contain belladonna, stramonium, lobelia, henbane and atrovent. Other patent medicines come in the form of pills, nebulizers and powders.

1901: Japanese chemist Jokichi Takamine isolates epinephrine, which can halt anaphylactic shock.

1904: The National Association for the Study and Prevention of Tuberculosis is formed, which later became the ALA.

1920s: German physician Hermann Dekker speculates that microscopic mites in bedding could be a trigger for asthma. This is confirmed with electron micrograph images of the dust mite in the 1960s.

1954: The ALA expands their purpose from tuberculosis to ensuring “healthy air and clean lungs” for all.

1956: First metered-dose inhaler is developed by Riker Laboratories, combining two new technologies: CFC propellants and the metering valve found on perfume bottles.

1963: Congress passes the Clean Air Act, setting emission standards for stationary sources such as plants and factories.

1968: Albuterol approved for use in the US.

1981: British punk rock band The Toy Dolls released a song called “I’ve got asthma,” with the lyrics: “I’ve got asthma and I cannot breathe/ I can’t breathe at all/ I’ve got an inhaler with me.”

1989: The National Asthma Education and Prevention Program (NAEPP) is created in March 1989 to address the growing problem of asthma in the United States.


1995: Bronkie the Bronchiasaurus, an educational game, is released for Super Nintendo. It educates about inhaler use and asthma triggers.

1995: Electronic music Aphex Twin produces a wordless track called “Ventolin,” which includes the sound of inhaler depressions.


1999: Minnesota Department of Health receives one of the first CDC asthma planning grants.


2007: Most recent fully updated EPR-3 Asthma Guidelines Report is issued by NHLBI.

2008: The use of CFCs in metered dose inhalers is banned.

2011: The last remaining brand of the epinephrine inhaler is taken off the market. There are no longer any approved over-the-counter epinephrine based rescue inhalers.

2013: Examples of current inhaled corticosteroids are Qvar, Flovent, Pulmicort, and Azmanex. The two most common bronchodilators are Albuterol and Levalbuterol.

Sources:
Adult Asthma

The need for a pharmacist’s service, and I began the Iverson Corner Drug asthma program. As a pharmacist I see asthma patients more often than any other health care professional when they pick up their prescriptions. With new prescriptions we teach our patients’ proper inhaler technique and, if appropriate, get an order for a holding chamber. If they are interested, we schedule them for an appointment for our asthma education program. Patients in the asthma program are educated about asthma, trained on proper use of a holding chamber and peak flow meter, screened to identify asthma triggers, and given an asthma action plan. We monitor all asthma patients’ rescue inhaler refills and refer them to their prescribing provider when an increased utilization indicates poor control of their disease.

As is often true with chronic diseases, insurance coverage for patient education is a challenge. Few insurance companies pay pharmacists to teach inhaler technique, and I am not aware of any that pay for all three sessions of our asthma education program (if they have a medication therapy management [MTM] benefit we can often bill the initial visit). This is disappointing as studies have shown significant decreases in emergency room visits, hospitalizations, and missed work or school days when patients go through an education program similar to the one used at Iverson Corner Drug. You can learn more about this connection at the Minnesota Pharmacists’ Association’s document on Medical Therapy Management: http://www.mpha.org/associations/9746/files/MTM_general_addendum.pdf. That has certainly proven true with the patients who have completed our program.

The MDH Asthma Program would like to thank Dr. Iverson for sharing his story.

On a team of 15, you can expect at least one player will have asthma.

If you coach or work with young athletes with asthma, this online educational program focuses on what you should know to help your athletes manage their symptoms while playing their best!

Learn more about Asthma go to: Coach’s Asthma Clipboard Program www.winningwithasthma.org
### Spring 2013 Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>March 19</strong></td>
<td>Housing and Health: A Look at Effective Interventions for People with Asthma:</td>
<td>Learn how Case Healthy Homes &amp; Patients (CHHAP), dramatically reduced hospitalizations of children with asthma by 59%. Register at <a href="http://bit.ly/Wm2ObW">http://bit.ly/Wm2ObW</a></td>
</tr>
<tr>
<td>University of Minnesota Continuing Education</td>
<td>Fungus Recognition and Identification:</td>
<td>This course will provide you with an opportunity for concentrated skill development in recognizing and identifying fungi. <a href="http://www.sph.umn.edu/details/course/11111/">http://www.sph.umn.edu/details/course/11111/</a></td>
</tr>
<tr>
<td><strong>March 21</strong></td>
<td>10th Annual School Nurse Asthma Education Seminar: Asthma Care: Consideration of Cultural Contexts in Advancing Improved Outcomes</td>
<td>Speaker Naomi Duke, MD, MPH. RSVP to Janelle Thier at <a href="mailto:Janelle.thier@LungMN.org">Janelle.thier@LungMN.org</a> by 3/15.</td>
</tr>
<tr>
<td><strong>April 25</strong></td>
<td>Implementation and Interpretation of Spirometry:</td>
<td>This full-day training offered by the American Lung Association is split into two sessions. <a href="http://www.lung.org/associations/states/minnesota/events-programs/mn-copd-coalition/copd-trainings/implementation-interpretation.html">http://www.lung.org/associations/states/minnesota/events-programs/mn-copd-coalition/copd-trainings/implementation-interpretation.html</a></td>
</tr>
<tr>
<td><strong>May 7</strong></td>
<td>World Asthma Day:</td>
<td>This entire month, celebrate asthma awareness! Use #WorldAsthmaDay on Twitter. For more information, go to on page 6.</td>
</tr>
<tr>
<td>University of Minnesota</td>
<td>Hands On Indoor Air Quality Assessment:</td>
<td>In addition to up-to-date information on health effects, costs of poor indoor air quality, and sources of problems, you will have an opportunity to perform building enclosure and HVAC assessments. <a href="http://www.sph.umn.edu/details/course/11075/">http://www.sph.umn.edu/details/course/11075/</a></td>
</tr>
<tr>
<td><strong>June 2</strong></td>
<td>Fight for Air Run</td>
<td>A non-competitive 3-mile walk around Lake Como for participants of all ages. <a href="http://www.lung.org/pledge-events/mn/saint-paul-walk-fy13/">http://www.lung.org/pledge-events/mn/saint-paul-walk-fy13/</a></td>
</tr>
</tbody>
</table>
Editor:  Kelly Raatz
To submit story ideas, provide feedback, or ask questions contact Kelly Raatz, Asthma Program Coordinator, at 651-201-5899 or Kelly.Raatz@state.mn.us

Staff:
Wendy Brunner
Epidemiologist, Asthma Surveillance
651-201-5895, Wendy.Brunner@state.mn.us

Janet Keysser
Asthma Program Director
651-201-5691, Janet.Keysser@state.mn.us

Kathleen Norlien
Environmental Research Scientist
651-201-4613, Kathleen.Norlien@state.mn.us

Hannah Rivenburgh
CDC Public Health Associate
651-201-5448, Hannah.Rivenburgh@state.mn.us

Susan Ross
RN, Clinical Advisor
651-201-5629, Susan.Ross@state.mn.us

Janis Smith
Administrative Program Support
651-201-5909, Janis.Smith@state.mn.us

Contact the MDH Asthma Program at:
General Program number: 651-201-5909
Toll Free Number: 1-877-925-4189
MN Relay Service
TDD/TTY 651-201-5797

Subscribe to Breathing Space:
Click on link to receive Breathing Space newsletters electronically https://public.govdelivery.com/accounts/MNMDH/subscriber/new?topic_id=MNMDH_49

Do you have questions about lung health?
Call the American Lung Association HelpLine at: 1-800-548-8252
(Hours 7:00am to 9:00pm Central Time)
Staffed by registered nurses and registered respiratory therapists to answer your lung health questions.

This newsletter is supported by Grant/Cooperative Agreement #5U59EH000498-04 from the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.