Climate Change and Health Care in Maryland

Wicomico County Public Health Grand Rounds
Peninsula Regional Medical Center
October 21, 2014
Learning Objectives

At the end of this session, participants will be able to:

- Describe how Maryland is using climate models and forecasts to predict the health impacts of climate change in regions of Maryland
- Discuss the specific projections that might involve this region and health conditions of interest
- Understand the significance of climate change in the context of specific conditions such as asthma
You are evaluating a 7 year old boy with a 3 year history of asthma. According to his mother, he has attacks daily, triggered by pollen, mold, and dust. Misses school about a day a month due to asthma. Wakes from sleeping with asthma 1 – 2 x/week.

Meds: Albuterol rescue inhaler, used daily

PMHx: Hospitalized once, age 5 – no intubation. No other medical issues.

Physical exam – no active wheezing

Peak flow meter --
### What are your asthma patients’ most concerning exposures/triggers?

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<td>A</td>
<td>Tobacco smoke</td>
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<td>B</td>
<td>Other smoke (incense, candles)</td>
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<td>Furry or feathered pets</td>
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<td>Rodents</td>
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Managing the Asthma

Medical Management
- Control sxs to maintain (near) normal lung function and normal activity levels
- Minimize use of short-acting β-agonists

Environmental Management
- Avoid environmental tobacco smoke
- Assessment for triggers
Home Environmental Assessment

- Goal – to identify triggers, educate, provide feedback to providers and points of care
- Who can provide – different models (nurses, environmental health specialists, community health workers)
- New models of care – Maryland working to develop innovative reimbursement and integrated care models involving improved communication, care coordination
Why Do We Care About Climate Change Here?

- Talking with your patient about triggers
  - Mold
  - Pollen
- Assessing triggers at home
  - Environmental assessment
- Thinking about the future
Maryland Public Health Climate Change Strategy

Maryland Department of Health and Mental Hygiene

Local health department

Vulnerability assessment

Disease burden projections

Adaptation plan development and implementation

Intervention option 1

Intervention option 2

Intervention option 3

University of Maryland School of Public Health

Regional Climate Change Forecast

Evaluation
Climate Forecast/Vulnerability Assessment

Disease/Outcome Burden Estimates

- Injuries and temperature-related health events
- Respiratory diseases
- Water borne illness and injuries
- Food borne illnesses
- Vector borne disease

Develop and Evaluate Interventions

Maryland Climate Change Action Plan

Develop Maryland Public Health Climate Change Strategy

Evaluation, Feedback, Dissemination
Climate Forecasts (10th Percentile)

Monthly Average of Number of Days

- Hot Days
- Cold Days
- Precipitation

Annual
Climate Forecasts (10th Percentile)

Monthly Average of Number of Days

Spring

- Hot Days
- Cold Days
- Precipitation
Climate Forecasts (10th Percentile)

Summer

- Hot Days
- Cold Days
- Precipitation

Monthly Average of Number of Days
Climate Forecasts (10th Percentile)

Monthly Average of Number of Days

Autumn
Climate Forecasts
(10\textsuperscript{th} Percentile)

Monthly Average of Number of Days

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<thead>
<tr>
<th></th>
<th>'06-'10</th>
<th>'16-'20</th>
<th>'26-'30</th>
<th>'36-'40</th>
<th>'46-'50</th>
<th>'56-'60</th>
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<td>Precipitation</td>
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Winter
Potential Regional Consequences

- Earlier, hotter summers lasting longer
- Increasing number of very hot days
- Potential for increase in precipitation, mold growth
- Increasing pollen concentrations
- Increased high ozone, particulate days with poor air quality
- Depends on other factors (precipitation, fuel mix, regulatory reform)
Implications For Your Patient

- We are seeing effects already
- Health department initiatives on outdoor air pollution
- Increasing vulnerability for some populations
- Need to look for opportunities to coordinate care, decrease triggers, improve outcomes
Implications for Asthma

- Another way to engage with patients on prevention messages (flags on schools)
- Asthma Action Plans
- New strategies on care coordination and reimbursement
Medicaid Enrolees with Moderate or Severe Persistent Asthma

Managed Care/Primary Care

Case Management/Coordination

- Community health worker training
  - Asthma friendly childcare
  - Asthma friendly schools
  - Medicaid reimbursement for environmental assessments, trigger reduction services, case management services

Knowledge of self-management practices
Improved practices to reduce exposures to triggers

Increased ED Visits
Increased Hospitalizations
Use of guidelines-based care
Global costs

All People with Asthma (Not Enrolled in Medicaid)

Primary Care

- Quality Improvement for Provider Practices
- Training of Asthma Friendly Pharmacies
- Grand Rounds Training for Health Care Providers
- Policies on Smoke-Free Multi-Unit and Public Housing
- Private Payer policies on reimbursement for environmental assessments, trigger reduction services, case management services

- Healthiest Maryland Businesses
- Chronic Disease Self Management Model for Older Adults
Asthma Action Plans

**Asthma Action Plan**

**Doing Well**
- No cough, wheeze, chest tightness, or shortness of breath during the day or night
- Can do usual activities
- And, if a peak flow meter is used,
  - **Peak flow:** more than (80 percent or more of my best peak flow)
  - **My best peak flow is:**
  - **Before exercise:**
    - [ ] 2 or [ ] 4 puffs
    - 5 minutes before exercise

**Asthma Is Getting Worse**
- Cough, wheeze, chest tightness, or shortness of breath, or
- Waking at night due to asthma, or
- Can do some, but not all, usual activities

**Peak flow:** to
- [ ] 60 to 70 percent of my best peak flow

- Add: quick-relief medicine— and keep taking your GREEN ZONE medicine.
  - [ ] 2 or [ ] 4 puffs
    - Every 20 minutes for up to 1 hour
    - [ ] Nebulizer, once

- If your symptoms [and peak flow, if used] return to GREEN ZONE after 1 hour of above treatment:
  - Continue monitoring to be sure you stay in the green zone.

- [ ] Your symptoms [and peak flow, if used] do not return to GREEN ZONE after 1 hour of above treatment:
  - Take:
    - [ ] 2 or [ ] 4 puffs
    - [ ] Nebulizer
  - Add:
    - [ ] mg per day for [ ] (3-10) days
  - Call the doctor [ ] before [ ] within [ ] hours after taking the oral steroid.

**Medical Alert**
- Very short of breath, or
- Quick-relief medications have not helped, or
- Cannot do usual activities, or
- Symptoms are same or get worse after 24 hours in Yellow Zone

- [ ] Your symptoms continued
  - [ ] or
  - [ ] or

- [ ] Call your doctor NOW. Go to the hospital or call an ambulance:
  - You are still in the red zone after 15 minutes AND
  - You have not reached your doctor.

**DANGER SIGNS**
- Trouble walking and talking due to shortness of breath
- Take [ ] 4 or [ ] 6 puffs of your quick-relief medicine AND
  - Go to the hospital or call for an ambulance [ ] (phone) NOW!

See the reverse side for things you can do to avoid your asthma triggers.
Who Should Have the Asthma Action Plan?

- Everyone
  - Family
  - Providers
  - School health centers
  - Day care
  - Pharmacist
  - Workplace*
DHMH School Programs

- Mandated School Health Services
  - Asthma Guidelines
  - Students with Special Needs
  - Self-Carry Law, Emergency Needs

- Asthma Friendly School Program

- Collaboration of the Asthma Control Program, MSDE, Office of School Health, School Systems, Individual Schools
Managing Asthma in the School Setting

- Encourage parents to disclose the student’s asthma to the school nurse.
- Discuss with parent and student the need for easy access to quick relief inhaler at school.
- Assess ability to self-carry.
- Assess inhaler technique.
- Ensure that child has one inhaler for school and one for home.
- Complete an individualized asthma action plan.
Maryland Community Resources

- American Lung Association
  http://www.lung.org/associations/states/maryland/

- Asthma and Allergy Foundation of America – Greater DC/Maryland Chapter
  http://www.aafa-md.org/healthcare_providers.htm

- Green and Healthy Homes Initiative
  http://www.greenandhealthyhomes.org/

- Mid-Atlantic Asthma Foundation
  http://www.asthma-foundation.org/
Maryland Community Resources

MD Asthma Control Program
http://phpa.dhmh.maryland.gov/mch/SitePages/asthma.aspx

Wicomico County Health Department
Future Directions

- Implications of changes in health care for asthma
  - Reimbursement
  - Models of Integration
  - Data Needs and Opportunities
- Opportunities for Collaboration
Summary

• Asthma exerts influence beyond the office:
  • Home
  • School
  • Community

• Think upstream and connect patients with resources beyond the office
  • Healthy Homes
  • Asthma friendly schools
  • Legal services
  • Asthma action plans
Contact Us

Rachel Hess–Mutinda, Program Coordinator
  • Phone: 410–767–2196
  • E–mail: rachel.hess–mutinda@maryland.gov

Clifford S. Mitchell, Director, Environmental Health Bureau
  • Phone: 410–767–6234
  • E–mail: cliff.mitchell@maryland.gov

Cheryl DePinto, Medical Director, Office of School Health
  ◦ Phone: 410–767–5595
  ◦ E–mail: cheryl.depinto@maryland.gov
Other Healthy Homes and Communities Topics

- Lead
- Radon
- Pesticides
- Chemicals in the Home
- Carbon Monoxide
- Injury and Fall Prevention: Keeping Your Patients’ Homes Safe for Everyone
- Provider’s Guide to Healthy Workplaces
Questions?
Acknowledgments

Maryland Department of Health and Mental Hygiene
  Environmental Health Bureau
  Office of School Health
  Cancer and Chronic Disease Bureau
  Maternal and Child Health Bureau

Baltimore City Health Department

Green and Healthy Homes Initiative

Johns Hopkins Bloomberg School of Public Health, Preventive Medicine Residency Program

U.S. Centers for Disease Control and Prevention