CLIMATE CHANGE IS HERE: WHAT DOES IT MEAN FOR YOU AS A PEDIATRICIAN AND WHAT CAN YOU DO ABOUT IT AS A HUMAN BEING?

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Objectives

• Participants will be able to
  – describe the current reality of climate change
  – explain some of the foreseeable impacts on human health and specific impacts on children
  – recommend lifestyle changes that individuals may make to address climate change
Study: Climate risks growing

EVERY PART OF U.S. BEING AFFECTED
Conservatives criticize federal assessment

By Daniel J. Lasanta

The government's 2014 national assessment of climate change and global warming is offering a grim, unsettling picture of the future. It makes clear climate change is already here and will get worse. The report released Tuesday warns that severe weather events, such as hurricanes, floods, and droughts, will become more frequent and intense if nothing is done to combat climate change.

The report, "Climate Change Impacts in the United States," is the latest in a series of reports by the U.S. government to assess the impact of climate change. The report is based on the latest scientific research and is intended to help policymakers make decisions about how to address climate change.

The future of the world's climate is critically important, and the government's assessment is a critical step in helping us understand the challenges we face.

For Gandhis, signs of a dynasty in its twilight

By Anna Goswami

A Republican senator has accused the Obama administration of using the federal government to suppress free speech and political activity against global warming.

Sen. James Inhofe (R-Okla.) said in a letter to the Environmental Protection Agency that the agency is using its authority to regulate greenhouse gas emissions to stifle opposition to climate change policies.

"The EPA has been explicit in its targeting of people who oppose their policies," Inhofe said. "This is an attempt to stifle the free exchange of ideas and to intimidate those who disagree with them."
Climate Change is Real.

- Climate change is now
  - Climate change includes changes in both the mean and variance of weather variables
- Health impacts are already occurring
- Inertia in the climate system means change will continue for decades after successful control of greenhouse emissions
- Extent of health impacts will depend on our ability to design and implement effective adaptation measures
The period from 2001-2012 was the warmest on record globally.
U.S. temperatures have warmed 1.3-1.9 degrees since 1895, with most of the increase since 1970.
That Fabled Northwest Passage Now Exists in the Summer

Yellow Line represents 30-year average border of minimum ice extent.

http://www.nasa.gov/images/content/593806main_ice_min_2011.01792.jpg
Scientists have very high confidence (greater than 90% chance) that global mean sea level will rise at least 8 inches (0.2 meter) and no more than 6.6 feet (2.0 meters) by 2100.

http://scenarios.globalchange.gov/scenarios/sea-level
Impacts on Human Health

- Increased extreme weather events
- Wildfire
- Decreased air quality
- Threats to mental health
- Illnesses transmitted by food, water, and disease-carriers such as mosquitoes and ticks
- Increased allergic illness

June 2, 2014

U.S. Global Change Research Program
Increased Heavy Downpours cause Increased Exposure to Waterborne Disease

Streams and rivers rise, which contributes to flooding of homes, businesses, and critical infrastructure like sewer and storm water systems.

Floodwaters can become contaminated with agricultural waste, chemicals, raw sewage, and other pollutants.

Floodwaters can contain disease-causing bacteria, viruses, and parasites.

Sewage overflow from treatment plants, septic fields, and municipal lines can back up into people’s homes.

Climate change increases heavy downpours.
Air Quality

• Increased ozone
  – Risk of de novo asthma
  – Risk of asthma attack

• Particulate matter
  – Decreased lung growth
  – Asthma exacerbation

Mental Health Impacts of Extreme Weather

- Kinds of problems
  - Anxiety
  - Depression
  - Post Traumatic Stress Reaction/Disorder (PTSR/D)
- Long-lasting

Multi-strike stressor
- Time of event
- During recovery
  - Displacement
  - Loss or damage to home and/or possessions
  - Stress of repair
- Risk of recurrence
Projected Changes in Tick Habitat (Lyme Disease)
The ragweed (pollen) season is expanding
Response: “Can society manage unavoidable changes and avoid unmanageable changes? Can we elect leaders who take climate change as a real threat to our society?

- **Mitigation** – reduce future climate change
  - Decreased burning of fossil fuel
  - Can you
    - Drive less, bike more
    - Drive a hybrid or electric car
    - Decrease energy consumption at home and in the office
    - Eat differently

- **Adaptation** – address and prepare for impacts
  - Build for storms
  - Personal plan for extreme weather events
  - Support community efforts
Control and Prevention of Outdoor Air Pollution

- Toyota Prius
- Honda Insight
- Chevy Volt
- Nissan LEAF
How We Use Energy in Our Homes

- Heating accounts for the largest portion of energy bills
  - Space heating
  - Water heating

http://energy.gov/energysaver/articles/tips-your-homes-energy-use
Health care has the second most energy intensive buildings per square foot in the country.

• Mostly hospitals
  – 24 hrs per day
  – High consumption equipment
Meat Consumption and CO₂ Emissions

According to a report by the United Nations Food and Agriculture Organization, livestock generates 18 percent of greenhouse gas emissions. The problem is expected to grow, as developing countries increase their consumption of meat and byproducts.

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<thead>
<tr>
<th>Meat production</th>
<th>Food consumption in developing countries</th>
<th>CO₂ produced</th>
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<tbody>
<tr>
<td>350 million tons</td>
<td>+200% Milk</td>
<td>1</td>
</tr>
<tr>
<td>300</td>
<td>+150 Cheese</td>
<td>10.8</td>
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<tr>
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<td>+100 Chicken</td>
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<td>countries</td>
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Source: “Livestock’s Long Shadow,” by the United Nations Food and Agriculture Organization, 2006; Lantmannen

QUESTIONS?
When Confronted with an Environmental Health Issue Regarding a Child, Where Does One Turn?

To a Pediatric Environmental Health Specialty Unit (PEHSU).
What is a PEHSU?

- A resource for pediatricians, public health officials, school personnel, parents and others to get questions answered about children’s health and the environment
What Kinds of Problems do PEHSUs Deal With?

- Lead poisoning
- Pesticide exposures
- Sick building problems
- Water pollution
- Air pollution
- Job related exposures in adolescents
- Volatile Organic Compounds
- Exposure to hazardous waste sites
- Environmentally related asthma
- Agricultural pollutants
- Solvents
- Carbon monoxide
- Arsenic
- Mercury
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&

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THE MID-ATLANTIC CENTER FOR CHILDREN’S HEALTH & THE ENVIRONMENT (MACCHE)

- A PEDIATRIC ENVIRONMENTAL HEALTH SPECIALTY UNIT (PEHSU)
- Based at The Children’s National Health System, Washington, DC
- Serve: Pennsylvania, Delaware, Maryland, Virginia, West Virginia, & the District of Columbia
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Questions?