Public Understanding of the Health Impacts of Climate Change

EPA Webinar
Communicating on Climate Change And Heat Health
July 22, 2015

Connie Roser-Renouf, PhD
Global Warming’s “Six Americas”

CLIMATE CHANGE IN THE AMERICAN MIND
Americans’ climate change beliefs, attitudes, policy preferences, and actions

Saving Energy at Home and on the Road
A survey of Americans’ energy intentions, motivations, and actions

GLOBAL WARMING’S “SIX AMERICAS” 2009: Audience Segmentation Analysis
• Nationally representative survey
• Conducted online in Oct. 17-28, 2014
• N = 1,275
• Margin or error = +/-3 percentage points
Only a Small Minority of Americans Have Thought a “Great Deal” About How Global Warming Might Affect People’s Health

“Before taking this survey, how much, if at all, had you thought about how global warming might affect people’s health?”

Please answer the following questions about global warming and health…

Only a Small Minority of Americans Have Thought a “Great Deal” About How Global Warming Might Affect People’s Health

“Before taking this survey, how much, if at all, had you thought about how global warming might affect people’s health?”

This figure probably overestimates the amount of thought given to the topic.

Please answer the following questions about global warming and health...

A Solid Majority of Americans Thinks Global Warming Is Bad For the Health of People in the U.S.

On a scale from -3 (very bad) to +3 (very good), do you think global warming is bad or good for the health of Americans?

A Solid Majority of Americans Thinks Global Warming Is Bad For the Health of People in the U.S.

On a scale from -3 (very bad) to +3 (very good), do you think global warming is bad or good for the health of Americans?

Nearly One in Three Americans Thinks Global Warming Is Currently Harming the Health of People in the U.S. a “Great Deal” or “Moderate Amount”

The health of Americans is being/will be harmed a great deal/moderate amount…

...Now 31%
...In 5 to 10 years 39%

The health of others in my household is being/will be harmed…

...Now 17%
...In 5 to 10 years 28%

When asked in a **close-ended** question whether climate-related health conditions will increase or decrease over the coming decade, large numbers say they expect increases:

- Air pollution, including smog: 38%
- Pollen-related allergies: 38%
- Asthma/other lung diseases: 37%
- Heat stroke caused by extreme heat waves: 36%
- Bodily harm from severe storms/hurricanes: 34%
- Diseases carried by insects: 33%
- Illness caused by food/water containing bacteria/viruses: 32%
- Cancer: 31%
- Hunger/malnutrition because food is too expensive: 30%
- Influenza/the flu: 29%
- Bodily harm from flooding: 27%
- Severe anxiety: 27%
- Depression: 26%
- Bodily harm from wildfires (inc. smoke inhalation): 26%
- Infections with the Ebola virus: 22%

Do you think each of the following will become more or less common in your community over the next 10 years as a result of global warming if nothing is done to address it? If you’re not sure, please provide your best estimate.

Over a third say they anticipate increases in the number of heat strokes.

- Air pollution, including smog: 38%
- Pollen-related allergies: 38%
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Do you think each of the following will become more or less common in your community over the next 10 years as a result of global warming if nothing is done to address it? If you’re not sure, please provide your best estimate.

Many also said they anticipate increases in health problems that are *unrelated* to climate change.

- Air pollution, including smog: 38%
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Do you think each of the following will become more or less common in your community over the next 10 years as a result of global warming if nothing is done to address it? If you’re not sure, please provide your best estimate.

An *open-ended* question reveals much less public understanding of climate-related health impacts

*What health problems related to global warming are Americans experiencing? (Blue = correct response)*

- No response: 43%
- Don't know: 14%
- Lung diseases/asthma/respiratory problems: 14%
- There are no health impacts: 11%
- Extreme weather/natural disasters/changes to seasons: 6%
- Skin cancer and other skin diseases: 5%
- Very hot and cold weather impacts: 4%
- Allergies: 3%
- Cancers (other than skin cancer): 3%
- Misc. incorrect effects: 3%
- Vector-borne and infectious diseases: 3%
- Pollution/air pollution/air quality/smog: 3%
- Hunger/malnutrition/crop failure: 2%
- Drought/water shortages/fires: 2%
- Flooding and downpours: 1%
- Contaminated water: 1%
- Heart disease: 1%
- Effects will occur in the future - not yet: 1%
- Particular groups are more affected: 1%
- Mental health impacts: <1%

In your view, what health problems related to global warming are Americans experiencing, if any? [Open ended, multiple responses accepted, most common responses shown]

Over half are unable or unwilling to name a health effect of climate change

- No response: 43%
- Don't know: 14%
- Lung diseases/asthma/respiratory problems: 14%
- There are no health impacts: 11%
- Extreme weather/natural disasters/changes to seasons: 6%
- Skin cancer and other skin diseases: 5%
- Very hot and cold weather impacts: 4%
- Allergies: 3%
- Cancers (other than skin cancer): 3%
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- Flooding and downpours: 1%
- Contaminated water: 1%
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In your view, what health problems related to global warming are Americans experiencing, if any? [Open ended, multiple responses accepted, most common responses shown]

Over half are unable or unwilling to name a health effect of climate change

<table>
<thead>
<tr>
<th>Health Effect</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>No response</td>
<td>43%</td>
</tr>
<tr>
<td>Don't know</td>
<td>14%</td>
</tr>
<tr>
<td>Lung diseases/asthma/respiratory problems</td>
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</tr>
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<td>11%</td>
</tr>
<tr>
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<td>2%</td>
</tr>
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<td>Drought/water shortages/fires</td>
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</tr>
<tr>
<td>Flooding and downpours</td>
<td>1%</td>
</tr>
<tr>
<td>Contaminated water</td>
<td>1%</td>
</tr>
<tr>
<td>Heart disease</td>
<td>1%</td>
</tr>
<tr>
<td>Effects will occur in the future - not yet</td>
<td>1%</td>
</tr>
<tr>
<td>Particular groups are more affected</td>
<td>1%</td>
</tr>
<tr>
<td>Mental health impacts</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

One in four (27%) correctly named a climate-related health problem

In your view, what health problems related to global warming are Americans experiencing, if any? [Open ended, multiple responses accepted, most common responses shown]

Four percent cited temperature-related illnesses

- No response: 43%
- Don't know: 14%
- Lung diseases/asthma/respiratory problems: 14%
- There are no health impacts: 11%
- Extreme weather/natural disasters/changes to seasons: 6%
- Skin cancer and other skin diseases: 5%
- Very hot and cold weather impacts: 4%
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- Contaminated water: 1%
- Heart disease: 1%
- Effects will occur in the future - not yet: 1%
- Particular groups are more affected: 1%
- Mental health impacts: <1%

In your view, what health problems related to global warming are Americans experiencing, if any? [Open ended, multiple responses accepted, most common responses shown]

Few Americans Are Aware of the Groups That Are More Vulnerable to Global Warming-Related Health Problems

Which groups or types of Americans do you think are more likely than other Americans to experience health problems related to global warming? (Blue = correct response)

- Not sure: 43%
- No groups are more vulnerable than others: 23%
- The elderly: 8%
- The poor/low income/homeless/limited health-care access: 7%
- Physically vulnerable: sick, disabled, low immunity, obese: 6%
- Infants/young children: 5%
- Misc. incorrect responses: 2%
- People who live/work in polluted areas: 2%
- City dwellers: 1%
- Residents of coastal and storm/flood-prone areas: 1%
- Outdoor workers/farmers: 1%
- Minorities and indigenous populations: 1%
- People with light or sensitive skin: 1%
- People who live in specific regions: 1%
- Everyone: 1%

Do you think that some groups or types of Americans are more likely than other Americans to experience health problems related to global warming? (If “Yes:”) Which groups or types of Americans do you think are more likely than other Americans to experience health problems related to global warming? [Open ended, multiple responses accepted, most common responses shown]

People who lack understanding of the threat are less likely to protect themselves or to support government action that would help to protect them.
Knowledge of Health Impacts & Vulnerable Groups (Open-Ended)

Severity of Harm to Other Nations

Probability of Harm to Community over Coming Decade

Severity of Harm to US (Now & over Coming Decade)

 Knowledge is the strongest predictor of heat adaptation behavior

Heat Adaptation Behavior

Support for Government Adaptation Action

Support for Increased Funding to Public Health

Roser-Renouf et al., 2015
Knowledge and perceptions of the likelihood of severe harm predict support for government adaptation action

Roser-Renouf et al., 2015
Perceptions of the likelihood of severe harm and support for government action predict support for increased funding to public health agencies to increase adaptation activities.
Global Warming’s “Six Americas”

- **Alarmed** (13%)
- **Concerned** (31%)
- **Cautious** (23%)
- **Disengaged** (7%)
- **Doubtful** (13%)
- **Dismissive** (13%)

October 2014
n=1,272

Highest Belief in Global Warming
Most Concerned
Most Motivated

Lowest Belief in Global Warming
Least Concerned
Least Motivated

*The size of the bubbles shows the proportion of Americans that belonged to each group in Oct. 2014*
Primary Differences between the Six Groups

Issue Involvement

Beliefs & Concern

Alarmed  Concerned  Cautious  Disengaged  Doubtful  Dismissive
Global Warming Belief Certainty

Very sure GW is happening

Extremely sure GW is happening

Yale/Mason; Oct 2014; n=1272
Understanding of Human Causation

Assuming global warming is happening, do you think it is...?

- Caused mostly by human activities

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Alarmed</td>
<td>89%</td>
</tr>
<tr>
<td>Concerned</td>
<td>78%</td>
</tr>
<tr>
<td>Cautious</td>
<td>44%</td>
</tr>
<tr>
<td>Disengaged</td>
<td>27%</td>
</tr>
<tr>
<td>Doubtful</td>
<td>14%</td>
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<tr>
<td>Dismissive</td>
<td>6%</td>
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Yale/Mason; Oct 2014; n=1274
Over three-quarters of the Alarmed say people in the U.S. are being harmed now, but close to ninety percent of the Dismissive say people will never be harmed.

When do you think global warming will start to harm people in the U.S.?

- **Never**
  - Alarmed: 76%
  - Concerned: 51%
  - Cautious: 16%
  - Disengaged: 40%
  - Doubtful: 14%
  - Dismissive: 89%

- **In 100 years**
  - Alarmed: 14%
  - Concerned: 17%
  - Cautious: 19%
  - Disengaged: 14%
  - Doubtful: 8%
  - Dismissive: 8%

- **In 50 years**
  - Alarmed: 2%
  - Concerned: 3%
  - Cautious: 16%
  - Disengaged: 3%
  - Doubtful: 2%
  - Dismissive: 3%

- **In 25 years**
  - Alarmed: 3%
  - Concerned: 21%
  - Cautious: 18%
  - Disengaged: 6%
  - Doubtful: 16%
  - Dismissive: 8%

- **In 10 years**
  - Alarmed: 2%
  - Concerned: 6%
  - Cautious: 24%
  - Disengaged: 10%
  - Doubtful: 34%
  - Dismissive: 16%

- **They are being harmed right now**
  - Alarmed: 2%
  - Concerned: 3%
  - Cautious: 19%
  - Disengaged: 2%
  - Doubtful: 1%
  - Dismissive: 3%
Issue Involvement

**How much had you thought about global warming before today?**

- Alarmed
- Concerned
- Cautious
- Dismissive
- Doubtful
- Disengaged

- Not at all
- A little
- Some
- A lot

**“I could easily change my mind about global warming”**

- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree

- Alarmed
- Concerned
- Cautious
- Doubtful
- Disengaged

Yale & George Mason, 2008; n=2,129
Low ability, interest, & trust are barriers to communicating about climate change for all Six Americas

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<tr>
<th>Statement</th>
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Three-quarters of the *Disengaged* say they have trouble understanding news on global warming

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Majorities of the **Disengaged, Doubtful** and **Dismissive** say they don’t want to hear about global warming

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Majorities of every segment believe news reporting is biased

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A Solid Majority of Americans Thinks Global Warming Is Bad For the Health of People in the U.S., but...

On a scale from -3 (very bad) to +3 (very good), do you think global warming is bad or good for the health of Americans?

... The *Alarmed* are the only segment in which a majority thinks the effects will be “very bad”

<table>
<thead>
<tr>
<th>Segment</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Alarmed</td>
<td>75%</td>
</tr>
<tr>
<td>Concerned</td>
<td>49%</td>
</tr>
<tr>
<td>Cautious</td>
<td>15%</td>
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<td>Disengaged</td>
<td>15%</td>
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<td>Doubtful</td>
<td>5%</td>
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<td>Dismissive</td>
<td>3%</td>
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</table>

Do you think global warming is bad or good for the health of Americans?

Yale/Mason; Oct 2014; n=1272
In the **close-ended** measures, close to 70% of the **Alarmed** said heat strokes will increase, but...

<table>
<thead>
<tr>
<th>Issue</th>
<th>Alarm Level</th>
<th>Alarmed</th>
<th>Concerned</th>
<th>All Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollen-related allergies</td>
<td>Alarmed</td>
<td>75%</td>
<td>59%</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>Concerned</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air pollution (including smog)</td>
<td>Alarmed</td>
<td>72%</td>
<td>62%</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>Concerned</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat stroke caused by extreme heat waves</td>
<td>Alarmed</td>
<td>69%</td>
<td>59%</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>Concerned</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Yale/Mason; Oct 2014; n=1272
In the *open-ended* question, less than 10 percent of the *Alarmed* mentioned heat-related illnesses:

<table>
<thead>
<tr>
<th>Category</th>
<th>Alarmed</th>
<th>Concerned</th>
<th>Remaining Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lung diseases, e.g., asthma, COPD &amp; respiratory problems</strong></td>
<td>32%</td>
<td>23%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Skin diseases, including skin cancer</strong></td>
<td>9%</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Allergies</strong></td>
<td>8%</td>
<td>6%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Heat-Related Illnesses, e.g., heat strokes</strong></td>
<td>7%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Vector-borne, tropical &amp; infectious diseases</strong></td>
<td>6%</td>
<td>5%</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td><strong>Injuries &amp; death</strong></td>
<td>6%</td>
<td>3%</td>
<td>&lt; 1%</td>
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Yale/Mason; Oct 2014; n=1272
Economic & demographic characteristics associated with vulnerability are recognized by less than a quarter of any segment, including the *Alarmed*

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</thead>
<tbody>
<tr>
<td>Poor, homeless and uninsured people</td>
<td>22%</td>
<td>12%</td>
<td>&lt; 1%</td>
</tr>
<tr>
<td>Seniors</td>
<td>19%</td>
<td>11%</td>
<td>4%</td>
</tr>
<tr>
<td>Sick, disabled, obese people &amp; those with weak immunity</td>
<td>15%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>Children &amp; babies</td>
<td>14%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Outdoor workers &amp; farmers</td>
<td>3%</td>
<td>1%</td>
<td>&lt; 1%</td>
</tr>
</tbody>
</table>
Accurate understanding of health impacts is highest among the Alarmed and Concerned, but so is inaccuracy.

In your view, what health problems are Americans experiencing from global warming, if any?

- There are no health problems from global warming: 16%
- Inaccurate health problem: 3%
- Accurate health problem: 7%
Trust in sources of information on health problems related to global warming varies widely by segment

<table>
<thead>
<tr>
<th>Source</th>
<th>Alarmed</th>
<th>Concerned</th>
<th>Cautious</th>
<th>Disengaged</th>
<th>Doubtful</th>
<th>Dismissive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate scientists</td>
<td>72</td>
<td>59</td>
<td>33</td>
<td>22</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>CDC</td>
<td>68</td>
<td>57</td>
<td>36</td>
<td>27</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>Your primary care doctor</td>
<td>64</td>
<td>55</td>
<td>37</td>
<td>32</td>
<td>25</td>
<td>11</td>
</tr>
<tr>
<td>EPA</td>
<td>59</td>
<td>50</td>
<td>30</td>
<td>21</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Your local public health</td>
<td>50</td>
<td>47</td>
<td>31</td>
<td>27</td>
<td>17</td>
<td>9</td>
</tr>
</tbody>
</table>

Yale/Mason; Oct 2014; n=1272
Physicians are trusted sources across segments

- Climate scientists
- CDC
- Your primary care doctor
- EPA
- Your local public health

Yale/Mason; Oct 2014; n=1272
Global warming is a threat to people’s health & wellbeing.  

**Framing statements**

Our health will suffer if we don’t take action.  

**Risk/threat statements**

Our health will benefit if we do take action.  

**Benefit statements**

Conclusion.  

**Framing statements**

Framing climate change as a health issue can be effective in reaching all segments, including the Dismissive.
Global Warming is a Threat to Peoples’ Health & Wellbeing

Most people agree with the sentiment that “good health is a great blessing.” Although not yet widely known, global warming poses a very real threat to the health and wellbeing of Americans and other people around the world. Experts at the World Health Organization say that global warming is already leading to an increase in the rate of some diseases and is causing many deaths. If our government and other governments around the world do not soon take steps to limit global warming, a growing number of people in the United States will likely be harmed and killed. Conversely, if our government does take steps to limit global warming, our health and wellbeing will likely improve in a number of important ways.

Our health will suffer if we don’t take action:

Global warming can harm people both directly and indirectly. Directly, global warming causes more extreme weather patterns including more frequent heat waves, more violent storms, and rising sea-levels – all of which can lead to people being harmed or killed. Indirectly, global warming harms the quality of our water, air and food, and our ecosystems, all of which can lead to increasing rates of disease and death. If we do not act now to limit global warming, experts at the U.S. Centers for Disease Control and Prevention say that global warming will harm people in every region of the United States. As a result of the poor air quality caused by global warming, children will become more likely to develop asthma, and the asthma they suffer from will be more severe; adults who have heart and lung diseases will become more likely to be hospitalized or die from their illness. An increasing number of extreme heat waves, floods, storms, fires and droughts caused by the changes in our climate will lead to more people being injured or killed.
Messages about health benefits of climate action were positively received across segments
Health framing elicited more hopeful feelings from **Cautious, Disengaged & Dismissive**

- **Hopeful**
- **Angry**

Myers et al., 2012
Conclusions

• Americans’ understanding of the health impacts of climate change – including the effects on heat-related illness – is very shallow.

• Even the most concerned Americans (the Alarmed) show little understanding of the health effects of climate change.

• People who understand the health impacts of global warming are more likely to be taking action to protect themselves during extreme heat, and are more likely to support action by elected officials and public health agencies to protect the public.

• Medical professionals are well-positioned to increase people’s understanding of the health effects of global warming.

• Framing global warming as a public health issue is likely to engage segments of the public that are skeptical about climate change or disengaged from the issue.
Many thanks to the generous funders who make this research possible, including the Grantham Foundation for the Protection of the Environment, the Surdna Foundation, and the 11th Hour Project.

http://climatechange.gmu.edu
http://research.yale.edu/environment/climate