Limiting Global Warming to 1.5 - 2°C: A Necessary and Unique Role for Health Professionals

KEYNOTE SPEAKER:
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Mason's Center for Climate Change Communication
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Limiting global warming to 1.5 - 2.0°C: A necessary and unique role for health professionals.

Edward Maibach, MPH, PhD
@MaibachEd
In 1980, seven American and Soviet physicians established the International Physicians for the Prevention of Nuclear War. Their message: A nuclear war would destroy civilization and might extinguish human life.

In 1985 IPPNW was awarded the Nobel Peace Prize for its central role in helping to open arms control discussions between the U.S. and the USSR.
"Their work commands great respect. For what they say and what they do is prompted by accurate knowledge and a passionate desire to warn humanity about the danger looming over it. In light of their arguments and the strictly scientific data they possess, there seems to be no room left for politicking. And no serious politician has the right to disregard their conclusions."

Mikhail Gorbachev (1987)

"I want to thank you [IPPNW] for your great contribution to preventing nuclear war. Without it and other effective antinuclear initiatives this [INF] Treaty would probably have been impossible."

Mikhail Gorbachev (1993)
An evidence-based heuristic for effective public education campaigns:

“Simple clear messages, repeated often, by a variety of trusted sources.”
The goal: Limit global warming to well below 2.0 °C, ideally 1.5.
Limiting global warming to 1.5 - 2.0°C

Why is this a necessary role for health professionals?
The most important public health goal of our era:

Limiting the warming of the planet to well below 2 degrees C above pre-industrial levels, ideally 1.5 degrees.
Global mortality from tobacco use and fossil fuel air pollution (PM2.5)

**Tobacco**
7,69 MILLION †
globally per year in 2019

Source: WHO 2021

**Fossil Fuels**
8,7 MILLION †
globally per year in 2018

Source: K. Vohra 2021
Human health harms from burning fossil fuels

Mortality:
- FOSSIL FUELS
- 8.7 MILLION †
globally per year in 2018

Morbidity:
- Respiratory diseases: asthma, emphysema, COPD, chronic bronchitis
- Cardiovascular diseases: impaired blood vessel function, stroke risk, reduced LDL, HBP (pregnant women)
- Cancer: breast, lung
- Pregnancy outcomes: Low birth weight
- Neuro-development: ADHD, reduced IQ, autism
- Neuro-degeneration: Alzheimer’s and other dementias, Parkinson’s disease
Eight health-harming pathways of climate change:

- Air pollution
- Extreme heat
- Extreme weather
- Vector-borne illness
- Water-borne illness
- Food-borne illness
- Hunger and malnutrition
- Mental health harms

Most likely to be harmed:

- Babies, children, pregnant women
- Seniors, people with certain chronic illnesses
- People in low-income & communities of color
- Outdoor workers

Source: Medical Society Consortium on Climate & Health 2017
Key message 1: Climate change affects the health of all Americans

Key message 2: Exposure and resilience vary across populations and communities

Key message 3: Adaptation reduces risk and improves health

Key message 4: Reducing greenhouse gas emissions results in health and economic benefits
The most important public health goal of our era: Limiting the warming of the planet to well below 2 degrees C above pre-industrial levels, ideally 1.5 degrees.

Key finding: A half degree of warming beyond 1.5 °C would mean substantially more poverty, extreme heat, sea level rise, habitat and coral reef loss, and drought. Every tenth of a degree of warming has grave public health consequences.
A Declaration on Climate Change and Health, 2019

Climate Change is a Health Emergency
#HealthyClimatePrescription

An urgent call for climate action from the health community ahead of COP26

#ClimatePrescription
Effort to Reframe Climate Change as a Health Crisis Gains Steam

Research has increasingly shown that warming is taking a deadly toll on human health. At the global climate summit in Glasgow, the issue has gained new prominence.

Ambulances left the American Medical Response in Portland, Ore., in July during a record-breaking heatwave. Alisha Jucevic for The New York Times
Even With COP26 Pledges, World Not on Track to Meet Paris Agreement's Goal

Global temperature rise over preindustrial average

- **Current policies**
  - +2.7°C by 2100

- **Pledges and targets**
  - +2.1°C by 2100

- **Paris Agreement goal**
  - Limit warming to +1.5°C

- **Current warming**
  - +1.2°C as of 2021

With 1.5°C of warming, much of the world will likely see staggering sea-level rise, record-breaking droughts and floods, and widespread species loss.

Source: Climate Action Tracker
15: Human Health: Impacts, Adaptation, and Co-Benefits
“There is no kind way to put it: We are sleepwalking to climate catastrophe. The 1.5 degree C goal is on life support. It is in intensive care.”

United Nation's Secretary-General António Guterres responding to the IPCC AR6 Report, March 2022
“Nearly half of humanity is living in the danger zone—now.”

“Unchecked carbon pollution is forcing the world’s most vulnerable on a frog march to destruction—now.”

“Delay equals death.”

United Nation's Secretary-General António Guterres responding to the IPCC AR6 Report, March 2022
Social Determinants of Health

- Health Care and Quality
- Neighborhood and Built Environment
- Social and Community Context
- Education Access and Quality
- Economic Stability
Ecological determinants of health are equally if not more fundamental
Climate change disrupts each of the social determinants of health.
Limiting global warming to 1.5 - 2.0°C

Why is this a necessary role for health professionals?

Because this our lane, our obligation, our duty, and because the hour is getting late.
An evidence-based heuristic for effective public education campaigns:

“Simple clear messages, repeated often, by a variety of trusted sources.“
GLOBAL TRUSTWORTHINESS RANKING 2021

Please look at this list of different types of people. In general, do you think each is trustworthy or untrustworthy in your country?

Please use a scale of 1 to 5, where 1 is very trustworthy and 5 is very untrustworthy.

<table>
<thead>
<tr>
<th>Profession</th>
<th>Trustworthy (1-2)</th>
<th>Untrustworthy (4-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>64%</td>
<td>10%</td>
</tr>
<tr>
<td>Scientists</td>
<td>61%</td>
<td>10%</td>
</tr>
<tr>
<td>Teachers</td>
<td>55%</td>
<td>11%</td>
</tr>
<tr>
<td>Armed Forces</td>
<td>42%</td>
<td>19%</td>
</tr>
<tr>
<td>Ordinary men/women</td>
<td>38%</td>
<td>11%</td>
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<tr>
<td>The Police</td>
<td>37%</td>
<td>28%</td>
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<tr>
<td>Judges</td>
<td>34%</td>
<td>28%</td>
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<tr>
<td>Lawyers</td>
<td>29%</td>
<td>28%</td>
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<tr>
<td>Television news readers</td>
<td>27%</td>
<td>30%</td>
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<tr>
<td>Pollsters</td>
<td>25%</td>
<td>22%</td>
</tr>
<tr>
<td>Clergy/Priests</td>
<td>25%</td>
<td>36%</td>
</tr>
<tr>
<td>Civil Servants</td>
<td>24%</td>
<td>30%</td>
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<tr>
<td>Journalists</td>
<td>23%</td>
<td>34%</td>
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<tr>
<td>Bankers</td>
<td>23%</td>
<td>34%</td>
</tr>
<tr>
<td>Business Leaders</td>
<td>23%</td>
<td>28%</td>
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<tr>
<td>Advertising executives</td>
<td>15%</td>
<td>37%</td>
</tr>
<tr>
<td>Government ministers</td>
<td>14%</td>
<td>54%</td>
</tr>
<tr>
<td>Politicians generally</td>
<td>10%</td>
<td>63%</td>
</tr>
</tbody>
</table>

Ipsos Global Trustworthiness Index 2021 – 19,570 participants across 28 countries, interviewed online 23 April – 7 May 2021

Online samples in Brazil, Chile, mainland China, Colombia, India, Malaysia, Mexico, Peru, Romania, Russia, Saudi Arabia, South Africa, and Turkey tend to be more urban, educated, and/or affluent than the general population. This “Global Country Average” reflects the average result for all the countries where the survey was conducted. It has not been adjusted to the population size of each country or market and is not intended to suggest a total result.
TRUST IN DOCTORS BY COUNTRY

Please look at this list of different types of people. In general, do you think each is trustworthy or untrustworthy in your country?

Please use a scale of 1 to 5, where 1 is very trustworthy and 5 is very untrustworthy.

Doctors

- Global Country Average
- Great Britain: 64%
- Netherlands: 72%
- Canada: 71%
- Argentina: 69%
- Turkey: 69%
- USA: 69%
- Chile: 68%
- Malaysia: 68%
- Spain: 68%
- Australia: 67%
- Saudi Arabia: 67%
- Russia: 67%
- Belgium: 66%
- Brazil: 66%
- China: 66%
- Mexico: 66%
- Italy: 65%
- South Africa: 65%
- France: 64%
- Sweden: 62%
- Hungary: 61%
- Germany: 61%
- Colombia: 58%
- India: 58%
- Peru: 58%
- Poland: 55%
- Japan: 52%
- South Korea: 38%

10% 9% 8% 8% 5% 8% 10% 7% 9% 7% 11% 12% 9% 10% 9% 16% 7% 11% 10% 8% 10% 13% 6% 10% 14% 10% 16% 9% 19%
Limiting global warming to 1.5 - 2.0 °C

Why is this a necessary role for health professionals?

Because we are trusted, which is a difference that can make a difference.
Limiting global warming to 1.5 - 2.0°C

Why is this a unique role for health professionals?
Most Americans understand that climate change is happening. However, they see it as a distant threat...

**in time**

**in space**

**in species**
The dominant mental frame for climate change
A common but polarizing mental frame for climate change: Politics
An engaging and depolarizing mental frame for climate change: Health
Americans are most likely to think of global warming as an environmental and/or scientific issue

- Environmental issue: 82% Yes, 9% Not sure/No response, 9% No
- Scientific issue: 74% Yes, 12% Not sure/No response, 14% No
- Agricultural (farming, food) issue: 67% Yes, 14% Not sure/No response, 19% No
- Severe weather issue: 64% Yes, 13% Not sure/No response, 22% No
- Economic issue: 64% Yes, 14% Not sure/No response, 22% No
- Humanitarian issue: 61% Yes, 16% Not sure/No response, 24% No

In your opinion, do you think global warming is a(n)...

April 2020

Yale Program on Climate Change Communication
George Mason University Center for Climate Change Communication
Five key truths about global warming (in 10 words)

<table>
<thead>
<tr>
<th>IT’S REAL</th>
<th>Global warming is happening.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT’S US</td>
<td>Human activity is the main cause.</td>
</tr>
<tr>
<td>EXPERTS AGREE</td>
<td>More than 99% of the world’s climate experts are convinced, based on evidence, that human activity is warming the planet.</td>
</tr>
<tr>
<td>IT’S BAD</td>
<td>The impacts are serious and affect people—especially children, older adults, people with chronic illnesses, and members of low-income &amp; communities of color</td>
</tr>
<tr>
<td>THERE’S HOPE</td>
<td>There are many actions we can take that will address climate change AND improve our health—in equitable ways.</td>
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</tbody>
</table>
Climate change is harming our health now, in communities across the nation. These harms include more heat-related illness; worsening chronic illnesses; injuries and deaths from dangerous weather events; infectious diseases spread by mosquitoes, ticks and rodents; illnesses from contaminated food and water; and mental health problems.

The health of any American can be harmed by climate change, but some people face greater risk. Children, student athletes, pregnant women, the elderly, people with chronic illnesses and allergies, and people in low-income and some communities of color are most likely to be harmed.

There are many things we can do to limit climate change and have better health now: clean energy; healthy buildings; active transportation; local, sustainable foods, etc. The sooner we take action, the sooner we will all benefit from clean air and water, better health, and a safer and more livable community. What are we waiting for?
Eight health-harming pathways of climate change:

- Air pollution
- Extreme heat
- Extreme weather
- Vector-borne illness
- Water-borne illness
- Food-borne illness
- Hunger and malnutrition
- Mental health harms

Most likely to be harmed:

- Babies, children, pregnant women
- Seniors, people with certain chronic illnesses
- People in low-income & communities of color
- Outdoor workers

Source: Medical Society Consortium on Climate & Health 2017
The most effective climate/health advocacy messages...

- **Show health impacts**
  - Top 3: air pollution; food-borne diseases; extreme weather

- **Call for policy solutions**
  - Top 3: clean energy; improved community design; recycling & reusing

- **Invoke helpful social norms**
  - Most Americans agree that we want healthy communities and a healthy climate, [and many of us/but not enough of us] are taking action

All three kinds of information increase persuasive impact, but **solutions information has the most impact**. This is equally true for conservatives as for liberals.

Source: Kotcher et al (2021) Journal of Climate Change and Health
The most effective climate/health advocacy messages also...

Call out opponents of climate action

- Fossil fuel CEOs and their lobbyists
- Some politicians
- Fossil fuel CEOs and their lobbyists, and the politicians who are in their pockets*

Calling out opponents:

- Significantly strengthens policy support and intention to advocate
- Is most effective with Republicans and Independents, thus providing further evidence of the depolarizing effect of the climate/health narrative

* Most effective treatment condition  
Source: Maibach et al (2022) Manuscript under development
“Don’t Tell Me What to Do”: Resistance to Climate Change Messages Suggesting Behavior Changes

“We found that (as compared to recommending new laws to mitigate climate change), recommending behavioral changes decreased individuals’ willingness to take personal actions to reduce greenhouse gases, decreased willingness to support pro-climate candidates, … and decreased trust in climate scientists.”

Five important pathways to improve our climate and health:

#1: Use clean, renewable energy and reduce energy waste
#2: Favor climate-smart foods, farms and food systems
#3: Support clean and active transportation options
#4: Improve our buildings and homes
#5: Improve our community environments

The health benefits of these actions are enjoyed almost immediately, and primarily locally in the communities that take the actions. Thus, they circumvent the behavioral economic conundrum that people have limited willingness to take actions today that will benefit them in the future.
Limiting global warming to 1.5 - 2.0 °C

Why is this a unique role for health professionals?

Because we — perhaps uniquely — have a narrative that engages, depolarizes, and focuses on creating benefits in the here and now that people value greatly.
Our mission is to mobilize and amplify the voices of U.S. doctors – in partnership with public health experts and fellow health professionals – to successfully advocate for equitable climate solutions that protect and promote the health of all people.

Launched in 2017:
• 9 medical societies
• No state affiliates
• A handful of partner organizations
• A few dozen individual advocates

By March 2022:
• 40 medical societies
• 18 state affiliates (but not TX, yet)
• 50 partner organizations
• 1,200 individual advocates
There has been a large increase since 2014 in the number of Americans who see climate change as becoming a danger to health in their community.

- % of Americans who think each condition will become more common in their community over the next 10 years as a result of global warming:

- Heat stroke caused by extreme heat waves: 37% (April 2020) vs. 34% (October 2014)
- Bodily harm from severe storms and/or hurricanes: 57% (April 2020) vs. 57% (October 2014)
- Asthma and/or other lung diseases: 37% (April 2020) vs. 37% (October 2014)
- Bodily harm from wildfires (inc. smoke inhalation): 26% (April 2020) vs. 54% (October 2014)
- Diseases carried by insects: 33% (April 2020) vs. 54% (October 2014)
- Bodily harm from flooding: 27% (April 2020) vs. 52% (October 2014)
- Illness caused by food/water containing bacteria/viruses: 32% (April 2020) vs. 51% (October 2014)
- Pollen-related allergies: 38% (April 2020) vs. 51% (October 2014)
- Severe anxiety: 27% (April 2020) vs. 44% (October 2014)
- Depression: 27% (April 2020) vs. 41% (October 2014)
Americans are rapidly waking up to the realities of climate change

Global Warming’s Six Americas: 2016
- Alarmed: 18%
- Concerned: 34%
- Cautious: 23%
- Disengaged: 5%
- Doubtful: 11%
- Dismissive: 9%

Global Warming’s Six Americas: 2021
- Alarmed: 33%
- Concerned: 25%
- Cautious: 17%
- Disengaged: 5%
- Doubtful: 10%
- Dismissive: 9%

Highest Belief in Global Warming
Most Concerned
Most Motivated

Lowest Belief in Global Warming
Least Concerned
Least Motivated

September 2021
(n=1,006)
Objectives and Grand Strategies
Three key objectives (to protect human health & our climate):

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<tbody>
<tr>
<td>Mitigation 1.0: Decarbonize all of the energy we use</td>
<td>100% clean energy (solar, wind, geothermal, etc.)</td>
<td>Families</td>
<td>Everywhere.</td>
<td>Turn off the faucet of heat-trapping pollution</td>
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<td></td>
<td>Scale-up storage</td>
<td>Companies</td>
<td></td>
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<td></td>
<td>Electrify everything</td>
<td>Governments</td>
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<td>NGOs</td>
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<td>Utilities</td>
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<tr>
<td>Mitigation 2.0: Reduce/drawdown CO2 in the atmosphere to 280 ppm</td>
<td>Nature: Forestry, agriculture, land use</td>
<td>Farmers</td>
<td>Everywhere</td>
<td>Clean up the deadly mess we made</td>
</tr>
<tr>
<td></td>
<td>Technology: TBD</td>
<td>Foresters</td>
<td></td>
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<td></td>
<td></td>
<td>Indigenous people</td>
<td></td>
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<td></td>
<td></td>
<td>Land use planners</td>
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<td></td>
<td></td>
<td>Entrepreneurs</td>
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<tr>
<td>Adaptation and Resilience: Reduce the harm to human health</td>
<td>Vector-control</td>
<td>Homeowners</td>
<td>Homes</td>
<td>Protect our community while we heal the climate</td>
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<td></td>
<td>Stronger/better infrastructure</td>
<td>Companies</td>
<td>Workplaces</td>
<td></td>
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<td></td>
<td>Emergency prep.</td>
<td>Governments</td>
<td>Cities/counties</td>
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<tr>
<td></td>
<td>Emergency response</td>
<td>NGOs</td>
<td>Regions</td>
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## “Grand strategy” options

<table>
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<tbody>
<tr>
<td>• Top down (policy change)</td>
<td>• Government policymakers (local, state, federal)</td>
<td>• Get elected to office</td>
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<tr>
<td></td>
<td>• Corporate policymakers</td>
<td>• Become a corporate board member</td>
</tr>
<tr>
<td>• Middle out (build demand for government and corporate policy)</td>
<td>• People who influence policymakers</td>
<td>• Lobby (Note: Powerful financial interests got there first &amp; have deeper pockets.)</td>
</tr>
<tr>
<td></td>
<td>• Opinion leaders (including health professionals)</td>
<td></td>
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<tr>
<td></td>
<td>• The engaged &amp; engageable publics</td>
<td>• Political advocacy to influence government policies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Consumer advocacy to influence corporate policies</td>
</tr>
</tbody>
</table>
Theory of Change

OUR GOAL
Implementation of equitable climate solutions that protect and promote health.

HARNESSING THE POWER OF NATURE, TECHNOLOGY, & COLLABORATION

POLICY MAKERS
Local, State, & Federal

PUBLIC
Voters concerned about climate change

Members, States, Affiliates, & Advocates

Organize • Empower • Amplify • Mobilize

Health Voices
Trusted voices of health professionals are effective at conveying the message that climate change is real, is harming our health now, and climate solutions will benefit health.
How can we help as health professionals?

1. Engage the public to build public will for equitable policy solutions in government and the corporate sector that protect our health and our climate.

2. Engage public policymakers to create political will.

3. Engage corporate policymakers to create corporate and political will.

4. Engage our health and educational institutions (universities, hospitals, clinics, etc.) to decarbonize our operations and to create a climate-ready health workforce.

5. Lead by example (in our private lives and our professional lives).
“Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.”

Margaret Mead (†)
Never doubt that simple, clear messages, repeated often, by a variety of trusted health voices can change the world.”

Mead-Maibach mash-up
Join your trusted voice with mine – and those of a fast-growing number of other health professionals – in advocating for equitable policies to protect our climate & our health.

Point your camera here

Become a founding member of Texas Health Professionals For Climate Action.
Limiting Global Warming to 1.5 to 2°C: A Necessary and Unique Role for Health Professionals

Audience Q&A

Moderated by: Dr. Mike Mackert