Addressing the Public Health Crisis of Climate Change

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About the AMA

The American Medical Association is the powerful ally of and unifying voice for America's physicians, the patients they serve, and the promise of a healthier nation. The AMA attacks the dysfunction in health care by removing obstacles and burdens that interfere with patient care. It reimagines medical education, training, and lifelong learning for the digital age to help physicians grow at every stage of their careers, and it improves the health of the nation by confronting the increasing chronic disease burden. For more information, visit ama-assn.org.

Glossary of Terms

Term	Definition
Climate Change	Long-term shifts in temperatures and weather patterns.[1]
Greenhouse Gas Emissions (GHGs)	Gases that trap heat in the atmosphere are called greenhouse gases.[2]
Water Vapor	Water vapor is Earth's most abundant greenhouse gas. It is responsible for about half of Earth's greenhouse effect—the process that occurs when gases in Earth's atmosphere trap the Sun's heat. Greenhouse gases keep our planet livable. Without them, Earth's surface temperature would be about 59 degrees Fahrenheit (33 degrees Celsius) colder.[3]
Carbon Dioxide	Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions (e.g., cement production).[1]
Methane	Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use, and by the decay of organic waste in municipal solid waste landfills.[2]
Nitrous Oxide	Nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater.[2]
Ozone	Ozone (O3) is a highly reactive gas composed of three oxygen atoms. It is both a natural and a man-made product that occurs in the Earth's upper atmosphere (the stratosphere) and lower atmosphere (the troposphere). Ozone contributes to what we typically experience as "smog" or haze, which still occurs most frequently in the summertime, but can occur throughout the year in some southern and mountain regions. Ozone absorbs UV light, reducing human exposure to harmful UV radiation that causes skin cancer and cataracts. When inhaled, it reacts chemically with many biological molecules in the respiratory tract, leading to many adverse health effects.[4]
Particulate Matter	Particle pollution — also called particulate matter (PM) — is made up of particles (tiny pieces) of solids or liquids that are in the air. Breathing in particle pollution can be harmful to your health.[5]
Renewable Energy	Renewable energy comes from unlimited, naturally replenished resources, such as the sun, tides, and wind. Renewable energy can be used for electricity generation, space and water heating and cooling, and transportation. Non-renewable energy, in contrast, comes from finite sources, such as coal, natural gas, and oil.[6]
Biofuels	Unlike other renewable energy sources, biomass can be converted directly into liquid fuels, called "biofuels," to help meet transportation fuel needs. The two most common types of biofuels in use today are ethanol and biodiesel, both of which represent the first generation of biofuel technology.[7]
Climate Justice	Climate justice connects the climate crisis to the social, racial and environmental issues in which it is deeply entangled. It recognizes the disproportionate impacts of climate change on low-income and BIPOC communities around the world, the people and places least responsible for the problem.[8]
Adaptation	Adaptation refers to adjustments in ecological, social or economic systems in response to actual or expected climatic stimuli and their effects. It refers to changes in processes, practices and structures to moderate potential damages or to benefit from opportunities associated with climate change.[9]
Decarbonization	Decarbonization is shorthand for finding alternative ways of living and working that reduce emissions and capture and store carbon in our soil and vegetation.[10]
IPCC	The intergovernmental panel on climate change is an intergovernmental body of the United Nations dedicated to advancing scientific knowledge about climate change. They are recognized as the global authority on climate science.[11]

Executive Summary

There is increasing evidence and near-universal consensus among the scientific community that human activities within the last 150 years are impacting the climate and causing increased global surface temperatures.[13] Even small increases in global surface temperatures can impact weather patterns, causing regional and seasonal temperature extremes, reducing snow cover and sea ice, and intensifying heavy rainfall.[12] Climate change has already caused irreversible damage, but climate change solutions can help prevent further temperature increases, provide health benefits, and mitigate negative impacts on health. The consequences of unmanaged climate change include droughts, water scarcity, rising sea levels and flooding, severe fires, melting polar ice, temperature extremes, declining biodiversity, increased vector-borne diseases, and catastrophic storms, all of which impact our health and safety.[1] Economically and socially marginalized groups are most vulnerable to climate change impacts due to structural determinants of health equity.[21]

From its inception in 1847, the American Medical Association (AMA) has been keenly aware that Americans' health was only as good as the environment they lived in, and has been actively engaged in environmental health research and policy. In 1989, the AMA issued its first report on the effects of global climate change and joined with governmental and other organizations to work on a comprehensive national policy and program to address the adverse effects of environmental pollution, including the "greenhouse effect". Within the last ten years, the AMA House of Delegates (HOD) has adopted a number of policies on climate change, air pollution, and sustainability. At the annual meeting in 2022, the AMA adopted policy declaring climate change a public health crisis that threatens the health and well-being of all individuals, with marginalized and disadvantaged populations expected to be disproportionately impacted by changing weather patterns.

To advance work in climate change and health, there are several organizational levers AMA can utilize, including education, advocacy, litigation, and collaborating with external partners. As such, the AMA has identified the following four strategic approaches to address climate change:

1. Educate physicians and trainees on the health effects of climate change.
2. Identify and disseminate information to physicians on decarbonizing the health care sector, reducing GHG emissions, as well as improving adaptation and resilience efforts.
3. Elevate the voices of physician leaders on the issue of climate change and health.
4. Collaborate with stakeholders to advance policies and interventions with a unified voice.

Section 1. Background and History

What is climate change?

Climate change refers to the long-term changes in temperature and weather patterns, primarily due to human behavior. Since the 1800s, burning fossil fuels such as coal, oil, and gas has generated greenhouse gas emissions (GHGs) that have trapped heat in the atmosphere and raised Earth's temperature by about 0.11 degrees Fahrenheit per decade.[1] However, the rate of warming has more than tripled since 1982, and in 2023, it was 2.12 degrees Fahrenheit above the 20th century average.[12] The impact of climate change does not end solely at temperature changes; climate change brings multiple weather-related changes, including intensified water cycles, increased flooding and drought in certain regions, rising sea levels, and increased rates of heat waves.[13] There is increasing evidence and near-universal consensus among the scientific community that human activities within the last 150 years are impacting the climate and causing increased global surface temperatures.[13] Even small increases in global surface temperatures can impact weather patterns, causing regional and seasonal temperature extremes, reducing snow cover and sea ice, and intensifying heavy rainfall.[12] Climate change has already caused irreversible damage, but climate change solutions can prevent further temperature increases, provide health benefits, and mitigate negative impacts on health.

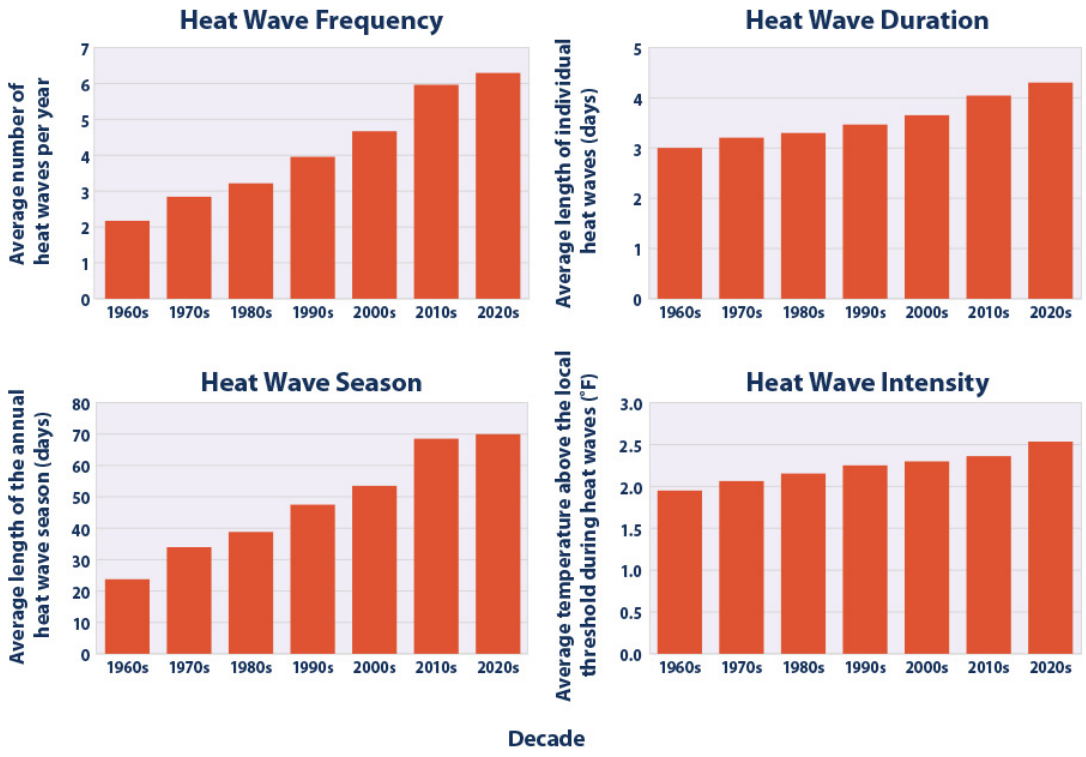
How does climate change impact health and equity?

The health impacts of climate change can be summarized as either direct or indirect **(Figure 1)**.[14]

Figure 1: Impact of climate change on health

The consequences of unmanaged climate change include droughts, water scarcity, rising sea levels and flooding, severe fires, melting polar ice, temperature extremes, declining biodiversity, and catastrophic storms, all of which impact our health and safety.[1] Heatwaves, for instance, can cause significant injury and mortality due to acute dehydration, heat exhaustion, and heat stroke, and studies have indicated that exposure to extreme heat can result in ischemic heart disease, heart failure, and arrhythmia.[15,16] Crucially, data from the United States Environmental Protection Agency (EPA) demonstrates that heat wave frequency, duration, and intensity are rising over time, and these trends are expected to continue and exacerbate health conditions for structurally vulnerable populations **(Figure 2)**.[17]

Figure 2: Heat wave trends in United States, 1961-2021



Data source: NOAA (National Oceanic and Atmospheric Administration). (2024). *Heat stress datasets and documentation* (provided to EPA by NOAA in April 2024) [Data set].

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

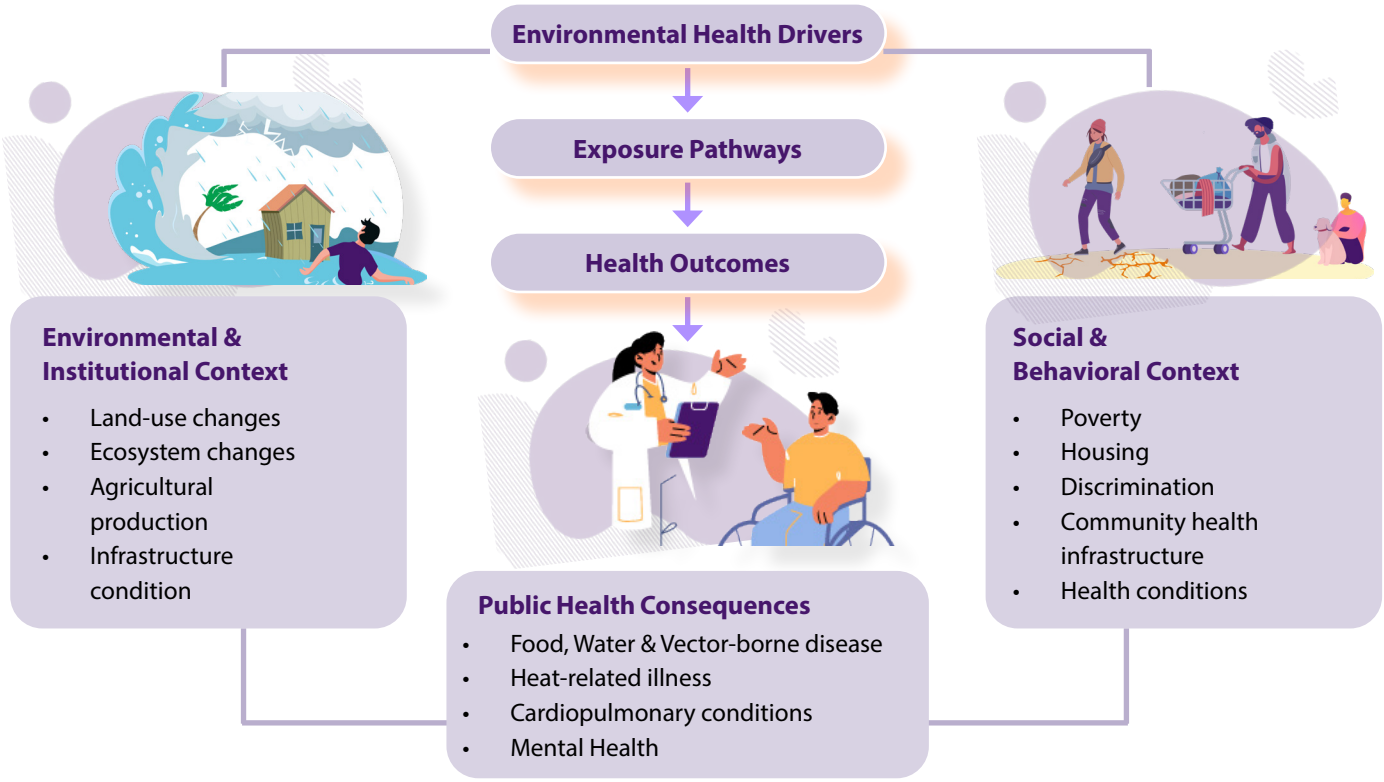
"I've seen this when I worked in hospitals in Florida, quite a bit. Obviously, one of our big things is heat, particularly in the summer months. And on those hot days, I have directly seen people coming to the ER who are in their early 20s, who are otherwise healthy and fit, no past medical history. And they're coming in with acute kidney injury because of dehydration, or heart failure or those people that have chronic illnesses. They're coming in when they hadn't been hospitalized in the two years prior or coming in with MI. Those are the direct effects of the heat for some of the patients." (Ankush Bansal, MD, FACP)

Evidence indicates that climate change impacts natural disasters, with observed changes in the intensity, frequency, and severity of extreme weather events such as monsoons, droughts, wildfires, and tropical cyclones.[13] These weather-related extreme events can cause death, destruction of people's homes, and hospitalizations due to traumatic injuries and can have lasting impacts on the environment through air and water quality.[18] Importantly, climate change impacts are not happening via one pathway, but rather, occur through various interconnected pathways across diverse social, environmental, and health contexts **(Figure 3)**. For example, nearly 4 in 10 people in the U.S., or 131.2 million people, already live in areas with unsuitable air quality.[19] Longer wildfire seasons will likely cause this number to increase, exacerbating population health inequities for people with asthma and other chronic respiratory conditions. The aftermath of these extreme events can also lead to displacement, homelessness, and post-traumatic stress disorder.[20] Economically and socially marginalized groups are most vulnerable to these poor outcomes due to structural determinants of health equity.[21]

Climate change continues to impact our food and water systems, which can indirectly worsen health outcomes by decreasing access to safe drinking water and healthy food. In 2022, 12.8 percent (17.0 million) of all households in the United States were food insecure, and in 2023, an estimated 2.2 million Americans lacked access to clean drinking water in their homes.[22]

Figure 3: Drivers of Exposure on Human Health

Climate change impacts human health through various interconnected pathways across social, environmental, and health contexts.



"I'd say we have definitely seen an increase in insect borne issues…from insects like ticks and mosquitoes. We've also seen changes with extremes of heat that negatively impact health and environmental resources…and I think that is problematic." (Maryanne Bombaugh MD, MSc, MBA, FACOG, CPE)

As climate change disrupts these systems further, it is expected that these numbers will grow. For example, IPCC models an additional 183 million people globally at risk of hunger if steps are not taken to mitigate climate change.[11] These disruptions will also increase food prices, decrease nutritional quality and food safety, and impact agricultural production levels. For individuals with less economic resources, shifts in food security could be a stress multiplier and lead to worsening health disparities and chronic disease rates.

Correspondingly, these changing weather patterns can indirectly impact health outcomes in numerous ways. Mental health experts note that the compounding factors of climate change can drastically impact mental health and increase the risk of psychiatric and neurological issues.[23] Many medications taken for managing mental health issues, except for benzodiazepines, can impair the body's ability to handle heat, raising the risk of heat exhaustion and heat stroke during extreme heat events.[24,25] Prior studies have found an association between increased temperatures and increased psychological distress, and another study identified increases in suicide deaths during wildfire events in rural America.[26, 27] While these results are not definitive and cannot establish causality, we know that climate change causes eco-anxiety and distress for 68 percent of adults, per a 2020 survey of over 2000 US adults conducted by the APA and The Harris Poll.[28] Additionally, in a global study of 10,000 children and young people, many respondents experienced at least moderate worry about climate change, and 75 percent reported feeling frightened about the future.[29] There is also evidence that children who were exposed in utero to natural disasters were significantly more likely to be diagnosed with a mood disorder or attention-deficit/disruptive behavioral disorder.[30] For many families, the stress and trauma of living through an extreme event can be substantial, long-lasting, and difficult to recover from as access to behavioral health treatment can be extremely limited.[31]

In 2023, over 200 medical journals, including the Journal of the American Medical Association (JAMA), coordinated the release of an editorial declaring climate change as a global health emergency, stating that vulnerable communities will bear the highest burden of changing climates.[32] Much like the COVID-19 pandemic, the climate crisis impacts communities of color, indigenous communities, and lower income communities at a greater scale. The legacy of systemic racism and structural violence (the social structures that put people in harm's way) means that marginalized communities face significant barriers in meeting their basic needs and accessing care.[33] For example, after Hurricane Katrina struck New Orleans in August 2005, data indicates that Black families faced significantly worse storm damages compared to white communities, with 272,000 Black individuals suffering displacement by flooding or storm damage, compared to 101,000 non-Black individuals.[34] Additionally, Louisiana autopsy data indicates that over 50 percent of storm casualties were non-Hispanic Black.[35]

"It's really looking at the dichotomy of how segregation, redlining, disinvestment in communities–and how climate plays a role in that, especially how stark the health effects are." (Joanna Bisgrove, MD)

We can uncover the root causes of these disparities using a structural violence lens: Black families in New Orleans faced wealth inequities due to intersecting systems of oppression that have prevented safety and economic resources, relegating families of color to poor, lower-lying areas without access to green space that might help absorb water.[36] Racial segregation, racism, and restrictive housing covenants ensured that Black homeowners were forced into undesirable, flood-prone areas.[37] Moreover, at the time of Hurricane Katrina, 84 percent of New Orlean's poor population was Black, making evacuation exceedingly difficult for these residents. In the end, the mortality rate for black individuals was potentially four times higher than whites; as such, scholars view racism as a primary driver in the risk of poor outcomes for such communities.[38,39] Many racial health disparities still exist today and have substantial implications on primary care, including exacerbated rates of heart disease, cancer, and new cases of HIV for Black residents of New Orleans.[40]

If action is not taken against climate change, these disparities will continue and are likely to worsen for historically marginalized communities and those at higher risk of climate-related health harms. Multiple studies in a 2022 scoping review found evidence that communities of color, including Black, Hispanic/Latinx, Native American, Pacific Islander, and Asian communities, face disproportionate impacts from climate change and extreme weather events, ranging from increased risk of stroke and cardiovascular disease during heat waves, higher risk of pregnancy complications for Hispanic women during Hurricane Sandy, and increased risk of infectious diseases such as gastrointestinal illness for American Indian and Black communities in the wake of Hurricane Florence.[41] Children and the elderly are especially vulnerable to climate disasters, as both have more limited ability to care for themselves and might be more susceptible to environmental hazards such as air pollution **(Figure 4)**.[42, 43] For Indigenous communities, climate change poses a substantial threat, as these groups often have a close relationship with the land and already face significant marginalization.[44]

The evidence is clear: Climate change is a fundamental threat to human health, and action must be taken to adapt and mitigate these impacts.

Figure 4: Climate Change and Vulnerable Populations

Impact on Children

Children are more vulnerable to the adverse health effects of climate change due to factors related to their developing physiology and metabolism, unique exposure pathways, biological sensitivities, and limits to their adaptive capacity (especially to extreme heat).

Impact on People with disabilities

Populations with mobility or cognitive disabilities are likely to experience greater vulnerability to adverse health impacts responding to, evacuating, and recovering from extreme weather events.

Impact on Older Adults

Older adults are more vulnerable during extreme events that cause power outages and/or require evacuation, as they may have limited mobility. Additionally, older adults are more likely to have other pre-existing conditions, such as hypertension, and other physiological factors that increase their risk of adverse impacts from climate change.

Impact on Communities of Color

As a result of structural and historical racism, communities of color are at increased risk from climate change due to the higher likelihood of living in risk-prone areas, areas with older or poorly maintained infrastructure, or areas with an increased burden of air pollution. Additionally, communities of color may face cumulative exposure to multiple pollutants and climate related health threats.

Impact on Low-Income Communities

Populations with limited income are more likely to live in risk-prone areas, such as urban heat islands, isolated rural areas, or coastal and other flood-prone areas. They are also more likely to have limited transportation options in the event of an evacuation and limited access to and use of health care.

The groups shown above do not represent a comprehensive list of communities that face increased climate vulnerability.
Other groups include members of the LGBTQ+ community, women, people who are incarcerated or without homes, particular occupational groups, immigrants, communities with limited English proficiency, and indigenous populations.

AMA and Environmental Health: The Historical Record

From its inception in 1847, the AMA has been keenly aware that Americans' health was only as good as the environment they lived in, evidenced by a report in 1856 on sanitation in cities that advocated for government intervention in controlling pollution of cities. While AMA's early work initially focused on air and water pollution, it soon came to encompass environmental health more broadly (see timeline of AMA environmental health policy in **Appendix A**). In the 1960s, AMA created a Committee on Environmental Health and recommended the federal government play a significant role in controlling air pollution. In 1989, four years after the discovery of a hole in the ozone layer, the AMA issued a report on the effects of global climate change and joined with governmental and other organizations to work on a comprehensive national policy and program to address the adverse effects of environmental pollution, including the "greenhouse effect". The AMA continued to advocate for restrictions on pollutants, but it was not until the early 2000's that policy was adopted calling for specific actions on climate change. In 2008, the AMA's Council on Science and Public Health (CSAPH) issued a report, *Global Climate Change and Human Health* that presented the (then) current scientific evidence on climate change, discussed predicted health effects, and provided policy recommendations, which were adopted (**See Policy H-135.938)**. Within the last ten years, the AMA HOD has adopted a number of policies on climate change, air pollution, and sustainability.

Recent AMA Policy on Climate Change

In 2016, policy was adopted in support of initiatives to promote environmental sustainability and other efforts to halt global climate change. In 2022, the AMA declared climate change a public health crisis that threatens the health and well-being of all individuals, with marginalized and disadvantaged populations expected to be disproportionately impacted by changing weather patterns. That same year, the AMA's CSAPH presented a council-initiated report on this topic "due to the significant public health threat that climate change represents and the impact on the health of patients, with marginalized populations expected to be disproportionately impacted." The CSAPH report called on the AMA to protect patients by advocating for policies that:

- Limit global warming to no more than 1.5 degrees Celsius (2.7 degrees Fahrenheit)
- Reduce US greenhouse gas emissions aimed at carbon neutrality by 2050
- Support rapid implementation and incentivization of clean energy solutions and significant investments in climate resilience through a climate justice lens

Section 2. Steps to Move AMA Forward

Levers for Change

From an organizational perspective, there are several avenues AMA can take to leverage its resources to engage in climate change and health work and address the public health crisis of climate change.

Education

Providing education is a critical component of AMA's mission to "promote the art and science of medicine," which it does as an accredited provider of continuing medical education (CME) and a driving force in the modernization of physician training. The AMA accomplishes this mission in several ways - through its online learning platform, the AMA Ed Hub™, and the publication of JAMA.

AMA's Ed Hub™ brings together almost 6,000 activities and over 2,000 CME articles, podcasts, videos, and interactive modules on a wide range of issues. There are currently over 70 resources available on the Ed Hub on the topic of climate change, which will continue to grow in the future. In 2025, the AMA will release a 30-minute educational module on climate change and health. The focus of the module is to bring awareness to physicians about the impact of climate change on the nation's health and to empower physicians to begin conversations with their patients about how climate change is affecting their health and what they can do about it. Additionally, *JAMA* has announced a new Climate and Health series, intended to inform readers about the associations between climate change and health and "to stimulate improved knowledge and understanding of the health effects of climate change to help foster commitment to timely action to prevent adverse health events from climate change." Through multiple channels, AMA will continue to produce and disseminate high quality educational content on climate change and health to meet the needs of physicians and the healthcare workforce.

Advocacy

The AMA's Advocacy team has a long-standing commitment to advocating at the federal and state levels. As part of our advocacy efforts, the AMA participates in the American Lung Association's (ALA) Healthy Air Partners campaign, which is a coalition of 40 national public health, medical, nursing and health care organizations engaged in healthy air advocacy efforts. The Coalition is united in its calling for strong federal laws and policies to slash air pollution and address climate change, recognizing climate change can affect air quality, and certain air pollutants can affect climate change. AMA has participated in several comments letters as part of this coalition, which are not fully enumerated below, but a few notable cases are highlighted:

- In June 2023, AMA joined 13 other health organizations in a letter to Environmental Protection Agency (EPA) on their proposed ruling regarding Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, urging them to pass the most stringent emission standards possible with existing technologies. In March 2024, the Biden Administration finalized this rule placing stricter limits on emissions from new cars. These new rules are a big win for public health and the planet. They will improve air quality and help prevent future health harms from climate change. The new standards will avoid more than 7 billion tons of carbon emissions and provide $13 billion of annual public health benefits due to improved air quality.
- In August 2023, AMA joined ALA and other health organizations in a letter to EPA on their proposed ruling in the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter, calling for the most protective standards to protect the health of the most vulnerable populations. In February 2024, EPA finalized their particulate matter rule. While the new rule did not set particulate matter at the more protective standard as advocated for by the Coalition, the revised rule did address several of our comments and the new standards will result in significantly reduced particulate matter pollution in the future.

Through its engagement with partners and as needed on a case-by-case basis, the AMA will continue to support policy and regulatory changes that advance efforts to reduce U.S. greenhouse gas emissions and improve health.

Litigation

Through the AMA's litigation center, we work to represent the interests of the medical profession on this issue in the courts by providing support or becoming actively involved in litigation of importance to physicians. The Litigation Center has engaged in a number of issues important to public health including government interference in the physician-patient relationship, the regulation of tobacco products, and firearm violence. Recent court cases centered on climate change and health (e.g., Montana), as well as the government's role in regulating greenhouse gases, highlight an area where the AMA can potentially engage moving forward.

Collaboration with external partners

In addition to its collaboration with ALA's Healthy Air Coalition, AMA partners with several other external groups that focus on climate change and health. The AMA continues to engage in the Medical Society Consortium on Climate and Health (MSCCH), which brings together associations representing over 600,000 clinical practitioners. The AMA is represented on the executive committee of this group.

The AMA is also a sponsor of the NAM Action Collaborative on Decarbonizing the Health Sector as a member of the Steering Committee and co-lead of the Health Care Delivery Workgroup. The first phase (2021-2023) of the Action Collaborative's work was focused on identifying key opportunities and challenges to climate action, decarbonization, and building resiliency across the health sector and developing resources and tools to meet those needs. The collaborative, through the work of the members, has developed over thirty resources to accelerate climate action across the health sector. The second phase (2024-2025) is focused on accelerating a national climate and health movement, as well as advancing the successes of the existing working groups and launching an accelerator pilot program. The AMA has sent an invitation to the Federation of Medicine inviting groups to join us in accelerating the climate and health movement.

Lastly, the AMA is represented on the American Public Health Association's (APHA) Center for Climate, Health, and Equity Advisory Board. APHA's Center for Climate, Health and Equity leads public health efforts to inspire action on climate and health, advance policy and galvanize the field to address climate change. The Advisory Board assists in refining and implementing APHA's Center for Climate, Health, and Equity strategic plan.

Organizational sustainability efforts

The AMA is committed to improving its environmental sustainability and will continue to implement several ongoing initiatives but also expand upon them. AMA's Chicago headquarters are located in a LEED-Gold certified building and multiple upgrades in the building are making it even more energy efficient. The building has also implemented several water conservation programs and a composting program. AMA's robust telework policy and promotion of a hybrid working environment, utilization of a shuttlebus service, bike area, on-site Zipcars and scooter and hybrid vehicle parking contribute to carbon emission reductions. AMA has published updates on these environmental sustainability initiatives (BOT Report 25-A-24) and will do so again for the 2024 interim meeting of the AMA House of Delegates.

Strategic approaches to address climate change

The AMA's response to public health crises is typically focused on (1) ensuring physicians and trainees have the data and resources needed; (2) identifying evidence-based policies and interventions; (3) elevating the voices of physician leaders through AMA channels and platforms; and (4) convening and collaborating with stakeholders to advance priority policies and interventions. These strategic approaches overlap and dovetail well with the different levers of change identified above.

To ensure our climate change strategy is consistent with our other work on other public health crisis, the AMA has identified the following four strategic approaches to address climate change:

1. Educate physicians and trainees on the health effects of climate change.
2. Identify and disseminate information to physicians on decarbonizing the health care sector, reducing GHG emissions, as well as improving adaptation and resilience efforts.
3. Elevate the voices of physician leaders on the issue of climate change and health.
4. Collaborate with stakeholders to advance policies and interventions with a unified voice.

Measuring our effectiveness

We are committed to advancing our strategic priorities on this critical public health issue and will track our progress using several performance indicators for each of four strategic approaches. Performance measures for each of our strategic approaches will address:

1. How much did we do? (For example, the number of events and/or activities completed)
2. How well did we do it? (For example, the number of educational products or events that were of high quality)

To ensure transparency and accountability, regular updates on our progress will be provided to the House of Delegates in the AMA's annual public health strategy report.

Section 3. Key Accomplishments and Future Actions

Strategic Approach	Key Accomplishments (2022 – 2024)
Educate physicians and trainees on the health effects of climate change.	Made climate change education available via the Ed Hub™ from a variety of sources including the *AMA Journal of Ethics, JAMA*, the American Public Health Association (APHA), and UC Center for Climate, Health and Equity (Ongoing). *JAMA* announced new series on climate and health intended to inform readers about the associations between climate change and health (2024). AMA's Center for Health Equity released an episode as part of the Prioritizing Equity series featuring physicians and scholarly leaders advocating for equitable climate action to remedy the disproportionate burden of health harms climate crisis puts on historically marginalized communities (2024). AMA climate change and health module being developed to be disseminated via the AMA Ed Hub™ (Coming in 2025).
Identify and disseminate information to physicians on decarbonizing the health care sector, reducing GHG emissions, as well as improving adaptation and resilience efforts.	The Council on Science and Public Health (CSAPH) initiated a report on *Climate Change in Human Health* and resulting policy calling for a 50 percent reduction in emissions by 2030 and for the health sector to lead by example in committing to carbon neutrality by 2050 (2022). Hosted an educational session at I-23 entitled *The Climate Crisis: Pathways to Decarbonizing the U.S. Health Sector* in collaboration with the National Academy of Medicine (NAM) (2023). AMA Update episode featured Dr. Victor Dzau, President of the NAM, who discussed how the Action Collaborative on Decarbonizing the U.S. Health Sector is bringing together organizations across medicine to act on climate change (Nov. 2023). CSAPH Report on *Sustainability in the Operating Room* adopted at HOD I-23. Dissemination of materials and resources for implementation of the Inflation Reduction Act (IRA) through NAM Collaborative. CSAPH report on *Reducing Hydrofluorocarbon in Health Care* adopted at A-24. BOT report on Carbon Pricing developed for I-24.
Elevate the voices of physician leaders on the issue of climate change and health.	AMA Update video and podcast series featured Renee Salas, MD, MPH, MS, a climate and health expert and emergency medicine physician who discussed research on the intersection of health and the climate crisis (Jan. 2022). AMA Update video and podcast series featured Colin Cave, MD, medical director of external affairs, government relations and community health at Northwest Permanente who discussed the link between health and climate change, and how physicians and health systems can be a part of the solution (Aug 2022). AMA conducted listening sessions with physicians to gauge their level of knowledge on climate change and elicit feedback on AMA strategy moving forward (May 2023). AMA staff participated in a plenary panel session entitled, "Climate – Impact on Health and Health Care" at AcademyHealth's 2023 Annual Research Meeting (June 2023). AMA's Chief Health & Science Officer joined the PermanenteDocs Chat podcast on heat waves and health, with a focus on how physicians can adjust to prepare to care for heat-related conditions brought on by climate change (Aug. 2023). The AMA STEPS Forward® Podcast featured Dr. Jerry Abraham, who discussed the intersections between the social determinants of health and climate change impacts (Feb. 2024). AMA staff developed and distributed a survey to physicians to assess perceptions on climate change and health (2024).
Collaborate with stakeholders to advance policies and interventions with a unified voice.	Launched a dedicated page on the AMA website, *Advocacy in action: Combatting health effects of climate change,* to highlight AMA's position on this issue, how it is engaged, and resources for physicians (2023). Sponsored the NAM Action Collaborative on Decarbonizing the US Health Sector (2021-Present). Participated in the MSCCH, and the American Lung Association's Healthy Air Partners coalition. AMA staff member serves on APHA Climate, Health, and Equity Advisory Board. Signed three letters in support of EPA policy to reduce greenhouse gas emissions and air pollution. Joined the MSCCH and 34 other health care organizations in sending a letter to the House of Representatives Agriculture Committee on the U.S. Farm Bill reauthorization (March 2024).

Section 3. Key Accomplishments and Future Actions

Strategic Approach	Proposed Actions
Educate physicians and trainees on the health effects of climate change.	Seek funding and opportunities for collaboration to support additional educational content on climate change, environmental justice, and health. Release additional CME module or content on climate change and health.
Identify and disseminate information to physicians on decarbonizing the health care sector, reducing GHG emissions, as well as improving adaptation and resilience efforts.	Disseminate relevant resources produced by the NAM Action Collaborative to Decarbonize the Health Sector. Study issues relating to decarbonization, climate change, and environmental sustainability as requested by the HOD. Publish an updated Green Practice Guide to the AMA website. Identify additional methods of dissemination for AMA's climate-related policies and positions, such as fact sheets or podcasts.
Elevate the voices of physician leaders on the issue of climate change and health.	Disseminate results from the AMA climate change survey through peer-reviewed journal publication and/or conference presentations. Participate in relevant national meetings and elevate AMA's policies and positions on climate change. Feature physician leaders on AMA platforms addressing the topic of climate change and health.
Collaborate with stakeholders to advance policies and interventions with a unified voice.	Continue to participate in multiple coalitions on climate change and health. Advocate for laws and regulations consistent with AMA climate change policies. File amicus briefs determined to be aligned with AMA's climate change policies and of importance to physicians.

Appendix A. A History of AMA's Environmental Health Policy and Research (1856-1960)

1856

A report on sanitation of cities calls for government intervention in the pollution of cities (Report on the Sanitary Police of Cities, A-1856).

1875

AMA adopts policy calling on the chief officer of the Signal Service Corps to have the quantity of ozone in the atmosphere telegraphed and published in weather reports. At this time, scientists believed ozone was a healthy component of the environment (Minutes of the 26th Annual Meeting, A-1875).

1891

In calling for the creation of a cabinet appointment of a Secretary of Public Health, environmental protection initiatives are cited noted as being supported by such a position (Report of the Committee on the Question of a Cabinet Appointment of a Secretary of Public Health, A-1891).

1905

AMA committee on Medical Legislation notes the importance of doctors weighing in on legislation regarding the protection of streams from pollution, among other public health initiatives (Report of Committee on Medical Legislation, A-05).

1946

In an address before the HOD, Rear Admiral J.T. Boone of the US Navy decried the pollution in Appalachia caused by coal mining (Address of Rear Admiral J.T. Boone, I-46).

1949

AMA's Council on Industrial Health holds a panel on scientific developments in the field including atmospheric pollution, toxic chemical and other harmful biological exposures (Report of Council on Industrial Health, A-49).

1955

AMA supports the creation of grants intended to provide funding for research on air pollution (Report of Washington Office, I-55).

1960

The Environmental Medicine Division is formed to address socio-economic issues affecting health care. Later known as Environmental Medicine and Medical Services (EMMS), the division oversaw initiatives addressing public health and professional issues as diverse as air pollution, school health, fitness, international health, health care for jail inmates, physician placement, and practice development (BOT Report, I-60).

Appendix A. A History of AMA's Environmental Health Policy and Research (1962-1973)

1962

AMA forms a Committee on Environmental Health (Address of the President, A-62).

1963

AMA recommends the federal government play a significant role in controlling air pollution (BOT Report, A-63)

1964

AMA has its first Congress on Environmental Health Problems (BOT Report, I-64).

1965

- AMA officially recognizes the importance and complexity of air pollution and creates a medical basis for establishing standards and objectives for the guidance of groups such as government agencies, medical organizations, and industrial and private organizations (BOT Report, A-65);
- AMA's Committee on Environmental Health is elevated to the more permanent status of "council" (BOT Report, I-65).

1967

AMA supports the Air Quality Act of 1967, but advocates against the establishment of industry-wide pollution standards in favor of individualized standards depending on the location of the polluting facility (Legislative Department Annual Report, I-67).

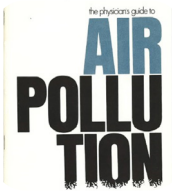
1969

AMA recognizes rapidly increasing air pollution hazards and calls on the medical profession to exert leadership in the search for effective solutions (Res. 55, I-69).

1971

AMA adopts policy calling for the Federal Environmental Protection Agency to have jurisdiction over all other federal agencies to set environmental quality standards and enforce compliance (Res. 60, I-71).

1973



AMA reaffirms support for the present levels and time schedules to reduce air pollution as promulgated by the Clean Air Act of 1970 (Res. 61, A-73).

Appendix A. A History of AMA's Environmental Health Policy and Research (1978-2009)

1978

AMA adopts policy on the hazards of nuclear, fossil, and alternative-energy generating sources. (Report of the Council on Scientific Affairs, A-78).

1989

- AMA issues a report on the effects of global climate change (Report of Council on Scientific Affairs, A-89).
- AMA joins with governmental and other organizations to achieve a comprehensive national policy and program to address the adverse effects of environmental pollution, including the "greenhouse effect". (Res. 43, A-89)
- AMA adopts policy on stewardship of the environment, calling on physicians to be spokespersons for environmental health (Report of Council on Scientific Affairs, I-89).

1992

AMA encourages physicians and environmental scientists to continue to incorporate concerns for human health into environmental research and public policy initiatives and encourages physician educators to devote more attention to environmental health issues (Report of Council on Long Range Planning and Development, I-92).

1995

AMA adopts policy calling for leadership and participation in a major education and prevention program to inform patients of the negative effects of air pollution on health (Res. 404, I-95).

2004

AMA adopts policy encouraging the Environmental Protection Agency (EPA) to finalize the most stringent feasible standards to control pollutant emissions from road engines (Res. 428, A-2004).

2008

- AMA encourages physicians to participate in regional and state decision-making regarding air pollution (Res. 408, A-2008);
- AMA supports green initiatives and anti-pollution programs (Report of the Council on Science and Public Health, I-2008);
- AMA issues a report on global climate change and concludes that human activity represents a significant contribution to the phenomenon. New policy is adopted educating the medical community on the potential adverse effects of climate change and supporting research to create evidence-based climate change policy decisions (Report of Council on Science and Public Health, I-2008).

2009

AMA issues a report on its efforts toward making the AMA "greener" (BOT Report, A-2009).

Appendix A. A History of AMA's Environmental Health Policy and Research (2010-2022)

2010

AMA policy supports the Environmental Protection Agency (EPA)'s effort to promulgate rules to regulate and control greenhouse gas emissions (Res. 925, I-2010).

2014

AMA formally supports the Environmental Protection Agency (EPA)'s regulation of carbon emissions (Res. 421, A-2014).

2015

AMA joins Royal Australasian College of Physicians Consensus Statement: Act now to reduce the damaging health impacts of climate change.

2016

- AMA adopts policy in support of initiatives to promote promote environmental sustainability and other efforts to halt global climate change (Res. 924, I-2016).
- AMA joins the Medical Society Consortium on Climate Change and Health.

2017

AMA adopts policy in support of evidence-based environmental statutes and regulations intended to regulate air and water pollution and reduce greenhouse gas emissions (Res. 523, A-2017).

2018

- AMA adopts policy to protect and maintain the Clean Air Act (Res. 917, I-2018);
-Policy calls on the AMA and its affiliated corporations to "work in a timely, incremental, and fiscally responsible manner, to the extent allowed by their legal and fiduciary duties, to end all financial investments or relationships… with companies that generate the majority of their income from… fossil fuels" (BOT Report, A-2018).

2019

-AMA adopts policy in support of teaching about climate change in undergraduate, graduate, and continuing medical education (Res. 302, A-2019);
- AMA adopts policy in support of exploring environmentally sustainable practices for *JAMA* distribution (BOT Report, I-2019).
- AMA joins the U.S. Call to Action on Climate, Health, and Equity: A Policy Action Agenda that lists ten policy recommendations and strategies for simultaneously tackling climate change, health, and equity.

2020

AMA sends a letter to President Trump declaring "there is no single step that will do more for the health of all Americans than remaining in and meeting our obligations to the Paris Climate Agreement" (AMA Press Release, 1-10-2020).

2021

AMA joins National Academy of Medicine Action Collaborative on Decarbonizing the U.S. Health Sector.

2022

- AMA declares climate change a public health crisis (Res. 420, A-2022);
- AMA calls on the health care sector to take the lead in mitigating climate change by committing to carbon neutrality by 2050 (AMA Press Release, 11-15-2022).

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