



Understanding Perspectives on Decarbonizing the Health Sector: Full Activity Overview

July 2023

Background

About the Climate Collaborative

Climate change is increasingly affecting people's health and negative outcomes are disproportionately burdening certain communities. The U.S. health sector has a sizeable carbon footprint, accounting for approximately 8.5% of U.S. carbon emissions¹. To make progress toward addressing climate change through health sector leadership, the National Academy of Medicine (NAM) launched a public-private partnership of leaders from across the health system committed to addressing the sector's environmental impact while strengthening its sustainability and resilience. The Climate Collaborative is part of the NAM Grand Challenge on Climate Change, Human Health, and Equity — a multiyear global initiative.

Purpose of the project

To better understand the experiences and perspectives of key stakeholders in the health sector related to decarbonization, the Health Professional Education and Communication Working Group of the Collaborative planned and conducted this activity. The overarching goal was to use this project as an initial step in defining a framework for action for the Collaborative and to establish priorities for the working group.

Methods

Goals

The working group sought to identify knowledge gaps, barriers, and opportunities for partnerships among the various health sector stakeholders. The groups identified for this research included Frontline Community Organizations (FCO), Health Professional Learners (HPL), Health Professional Workers (HPW), Health Professional Educators (HPE), and Patient Advocacy Organizations (PAO). In the focus groups and survey, participants were asked to reflect on 4 broad topic areas:

- Initial reactions to the mission of decarbonizing the health sector and the impact on their constituents
- Attitude and level of support for the goals of the collaborative

¹ Eckelman, M. J., Huang, K., Lagasse, R., Senay, E., Dubrow, R., & Sherman, J. D. (2020). Health Care Pollution and Public Health Damage in the United States: An Update. *Health Affairs*. 39(12). <https://www.healthaffairs.org/doi/10.1377/hlthaff.2020.01247>

- Level of involvement, including what might be barriers to getting involved or successful strategies (if relevant)
- Ways the action collaborative can support stakeholder involvement in decarbonization of the health sector

Focus groups

Participants were selected by the Health Professional Education and Communication Working Group members. The Working Group defined the types of stakeholders to engage, and generated participant lists for each focus group. Additional participants were recruited through snowball sampling and outreach to the working group's extended network, in the case that the initial nominated participants were unable to participate. Each focus group was segmented by stakeholder type and included approximately 5-8 people.

Participants were invited with an eye toward ensuring a diverse mix of sociodemographic characteristics like age, race, geographic location, type of workplace, communities they serve, etc. Sessions were facilitated by members of the working group and all participants were provided with an informational overview of the collaborative prior to discussion. In total, the working group held 5 focus groups (n=30), and each session was conducted remotely over Zoom, in English, and lasted approximately 2 hours.

Online survey

The survey instrument was designed to seek input from additional stakeholders while following a similar line of inquiry as the focus groups. The survey included 29 items, most of which were open ended, and was conducted online using the Alchemer platform. Invitations to take the survey were distributed by the working group and focus group participants were also invited to participate in and share the survey.

Survey respondents were asked to self-identify as belonging to one of 6 stakeholder groups. The sample was comprised of:

- Health Professional Worker (37.7%)
- Health Professional Educator (23.1%)
- Frontline Community Organization or members (8.1%)
- Health Professional Learner (5.3%)
- Patient Advocacy Organization/member or patient (1.6%)
- Other (24.3%)

Those who selected "Other" were not asked to provide additional detail about their profession. The survey and focus groups were conducted by members of the working group between January and March of 2023 and analysis and reporting was completed throughout the summer.

Analysis

The focus group and survey data were analyzed separately and then together by an independent communication and research consultant. Prior to starting analysis, the survey data

were deidentified, cleaned, formatted, and variables recoded as needed. After review of the clean dataset, 5 incomplete responses were dropped to arrive at the final sample (n=253). Descriptive analyses were run in SPSS to summarize the characteristics of the dataset including the distributions, averages, and variability of responses. Open ended survey data were reviewed and then coded according to any emerging themes. Once all responses were numerically coded, they were counted for reporting purposes.

Analysis of the focus groups began with a review of audio recordings and transcripts. This preliminary review allowed the researcher to capture notes on the flow of conversation and relevant context in how statements were made. Next, the transcripts were reviewed in a systematic and iterative manner — consistent with Template Analysis² — for coding individual observations throughout. Some *a priori* codes were established based on the original research questions defined by NAM, and additional codes were defined based on emergent themes.

As a final step, the themes that emerged across the qualitative and quantitative data were synthesized and reported as either cross-sector or audience-specific insights.

Limitations

- Participants in both the survey and focus groups were relatively well-informed about climate change and/or the effects of climate change on human health. This selection bias may have limited the activity's ability to uncover some knowledge gaps that likely exist within the health sector among a more representative audience.
- In the survey, approximately 24.3% of respondents self-identified as "other" with no option to specify their profession. Without definitions for each industry label, it's possible that some of these respondents may not have selected the appropriate group and missed the opportunity to answer some follow-up questions.

Key Findings – Themes Across Stakeholder Groups

Knowledge

Decarbonization

While most focus group participants indicated they understood the meaning of the term "decarbonization", participants mentioned that **the term may be confusing** or obscure — particularly for those with lower literacy levels or with less involvement in the cause.

Most participants were already aware of and informed about the fundamental relationship between the environment and human health. However, some participants identified that they **lacked a nuanced**

"We need to address climate change and reduce use of carbon, but I would use simpler terms." (Other)

"A lot of folks understand the basics of climate change but as a community we're not reinforcing this or expanding on those basics." (FCO)

² Brooks, J., McCluskey, S., Turley, E., & King, N. (2015). The Utility of Template Analysis in Qualitative Psychology Research. *Qual Res Psychol.* 12(2), p. 202-222

understanding of the impact of climate change on health outcomes and/or did not have sufficient evidence to be able to really explain it to others.

Information needs

Across all groups, participants emphasized the importance of educating health sector audiences about **actionable steps and strategies for decarbonizing at the local level** — to support both individual and organizational behavior change. These strategies for decarbonizing ranged from choosing more efficient energy sources, to better management of supply chain, and reducing wasteful practices. A few participants also mentioned wanting to know **a first step they could take**, or where they should start.

Additionally, participants expressed interest in having **information and clear examples/data to be able to do “evidence-based” advocacy**. Specifically, they asked for data and evidence related to:

- Measurable impact of climate change on the health of patients (particularly to connect this mission to the established environmental justice movement)
- The financial benefit of decarbonization and conservation of resources
- Success stories – examples of where systems have shifted their practices and experienced better financial and/or patient health outcomes

“A lot of resistance from hospital leadership because of cost to decarbonize. Provide economic data to make the case that by decarbonizing everyone benefits.” (PAO)

“Building the link between climate/environmental health and population health has been immensely successful. As people realize that climate change will notably affect health patterns, they understand how it will affect their own work, whether that’s treating people for specific ailments or having to work amidst blackouts/drought.” (Other)

Perceptions and attitudes toward decarbonizing the health sector

Initial reactions

When participants were asked about their initial reactions to the mission of decarbonizing the health sector the **vast majority provided favorable responses**. In the survey, more than 87% of respondents who answered this question provided an overtly positive response, and more than 26% mentioned the importance of timeliness, urgency, and/or near-term action. Across the survey and focus groups, participants expressed these positive sentiments by using phrases like:

- “Critically important”
- “Long overdue”
- “Great idea! STAT!”
- “I’m all for it”

While initial reactions were largely positive, survey respondents also shared concerns related to **level of effort and/or feasibility of the mission**. In the survey, these initial concerns focused on:

- Perceived difficulty or magnitude of the problem (9%)
- Financial cost (3%)
- Lack of knowledge/awareness (2%)

Participants in focus groups echoed these concerns and provided some additional detail about the specific challenges facing the health sector. These individuals questioned:

- The collaborative's ability to drive change in a profit-driven sector
- Achieving the mission without passing on costs (or other unintended consequences) to patients — particularly vulnerable communities
- The amount of time it would take to see meaningful change

Few survey respondents (6.6%) expressed overtly negative initial reactions to the collaborative's mission.

Level of support

Many participants reflected on how they see a natural connection between the impact of climate change on human health and the mission of the health sector overall. HPW's often remarked on how the Hippocratic Oath to "do no harm" translates not only to the treatment and care of patients but also to the environment that patients live in. Several participants commented that the health sector should be **leading by example** to both improve environmental conditions for patients and to be credible among other industries.

When survey respondents were asked about their interest or level of involvement in the effort to decarbonize the health sector and make it more resilient to climate impacts, **more than 90% of those who responded indicated they were interested or already involved** in this effort. More than half reported being already involved (51.2%) and 39.1% expressed interest in getting involved. Approximately 1 out of 10 respondents who answered this question indicated they were not interested in getting involved (9.7%).

When respondents were asked, "To what degree do you support or oppose decarbonizing the health sector and making it more resilient to the impacts of climate change," **almost all indicated they were supportive**.

- 96% support (90.4% strongly support and 5.6% somewhat support)

*"Long overdue for health care to be taking aggressive action on this topic that has such an impact on the health of our patients."
(HPW)*

*"This will be difficult in America because this sector is accustomed to having its way and wasting resources."
(Other)*

*"I am so glad that this Collaborative exists... but I get the feeling that there is a long road ahead."
(HPL)*

*"We need to be responsible for the negative environmental impact of our operations. We also need to be ready for illnesses and conditions that will occur more often because of climate change."
(HPE)*

- 2.8% oppose (2.0% strongly oppose and 0.8% somewhat oppose)
- 1.2% neither oppose nor support

Attitudes and beliefs

When survey respondents were asked about their attitudes toward the goal of the Climate Collaborative, the **vast majority provided a positive response**. More specifically, respondents were asked to reflect on their perspective of whether the collaboratives' goals were a good or bad thing for 3 aspects of health care:

- The mission of the health care sector (83.5% indicated very good)
- The health of communities and patients (85.9% indicated very good)
- Health equity (79.5% indicated very good)

Very few respondents provided a negative response (-3 very bad, -2, or -1) across these items:

- The mission of the health care sector (2.5%)
- The health of communities and patients (2%)
- Health equity (3.2%)

Barriers or concerns

Participants across focus groups and the survey, were relatively consistent in the identification of concerns and barriers to decarbonizing the health sector. Most of the issues raised were not unique to health or health care — but rather consistent with personal, social, and situational barriers explored in broader U.S. consumer research³. The key issues that were raised by participants in this study were related to **time, importance (or priority), and cost**.

Participants across sectors frequently described their biggest barrier as **lack of time** to get involved. Some described that they lacked time because their work was focused on more important priorities — for example getting people access to food and safe housing. Educators often described that they lacked time to incorporate lessons on decarbonization and climate resilience, as there was already too much to cover.

Some participants raised other kinds of tensions or **competing priorities** related to decarbonization. Health care providers often described that importance of maintaining sterility and controlling infection outweighs the need to reduce single-use plastics and waste. A few participants also raised concerns about decarbonization and resilience being at odds with one and other — for example in some cases the sustainable practice may make an institution less resilient.

Patient advocates and frontline community organizations tended to express the most concern about the **cost of decarbonization being passed on to patients** — especially any kind of impact to marginalized groups. Most participants who expressed these concerns framed it as 'non-

³ Maibach, E. W., Uppalapati, S. S., Orr, M., & Thacker, J. (2023). Harnessing the power of communication and behavior science to enhance society's response to climate change. *Annual Review of Earth and Planetary Sciences*, 51, p. 53-77.

negotiable', suggesting that they would not be in support of decarbonization if any costs were passed on to patients.

In addition to these barriers, some participants also mentioned:

- Lack of a clear ROI for health sector decision makers
- Lack of incentive and accountability for the industry as well as individuals — some participants called out that decarbonization is not a “supported/required” part of their job
- Established industry norms and practices — several participants mentioned how much of their “business as usual” is not particularly green
- Ideological/political reasons that they (or their institution) might not be in favor

“I don't have sufficient free time to get involved, so would require finding a paid position or a stipend to supplement a reduction in my clinical time.” (HPW)

“The medical industry has a unique relationship to plastics and [the practice of] immediate disposal of resources is going to be very difficult to tackle. I am not sure how physically and economically possible this is.” (PAO)

Facilitators and motivators

Throughout the survey and focus group responses, participants described a variety of motivators and personal drivers for engaging in sustainable practices. Several participants reflected on the **power of learning about (and being reminded of) the level of waste generated by the health sector**. Some participants in focus groups indicated that they were surprised to learn how much the health sector contributes to carbon emissions — and that they felt compelled to change that.

Another major facilitator raised by participants was having **buy-in at the highest level of an organization**. This “top down” approach to change was mentioned by participants from both small community organizations and by educators or workers within large health systems or institutions. Participants often mentioned that when those at the top make sustainability a priority the day-to-day changes become that much easier to implement and maintain.

Consistently stakeholders pointed to the **value in promoting higher levels of awareness**. They emphasized how important consistent and tailored communication is in meeting people where they are at in their “decarbonization journey” and how communication can go a long way in shaping attitudes, perceptions, and ultimately behavior.

Across stakeholder groups, participants mentioned other factors that they found to be personally motivating or strategies that facilitated action. For example:

- Making sustainable practices “convenient” – having working environments designed to make the more sustainable behaviors seem easier (i.e., centralized waste and recycling bins, motion-sensing lights, elimination of plastic in the hospital café)
- Cross-sector and community discussion and partnerships – to be able to combine forces (for more impact) and build on the successes and lessons learned by other groups or sectors that may be further along
- Better brand positioning – a few participants mentioned that larger institutions and systems could be persuaded to prioritize sustainability if it was perceived as a competitive advantage or if inaction might put an institution’s reputation at risk
- Potential for ripple effect – several participants noted that if the health sector took a stand that patients would notice (and potentially take action as well) and that more of the younger generation might be drawn to the field.

“The amount of waste and the carbon footprint that I see in just a community pharmacy is frightening. The transport of medications, vaccination and pill bottle waste, and a lack of ways for drugs to be safely disposed of really motivates me to seek ways that these things could be more environmentally friendly.” (HPL)

“Make it clear to hospital presidents and CEOs that this is the direction the entire industry is headed, and any organization that doesn't get on board is going to lose money and prestige.” (Other)

“Younger generations may be more likely to pursue careers in the health care sector if they feel like the actions we are taking are better aligned with our mission.” (HPE)

“The facts about climate change help start the conversation, but the ROI of changes made to facilities (and/or legislative requirements where in place) have been the difference [in changing behavior.]” (Other)

Key Findings: Audience-Specific Themes

Frontline Communities

- Participants from FCOs often referenced **focusing on prevention and preventive services** as a means of reducing carbon emissions. These individuals explained how their work is focused on meeting basic needs of marginalized populations — including ensuring access to basic health services and healthy living conditions.
- Some FCO participants discussed how their current involvement in the issue is more focused on building climate change disaster preparedness and resilience.
- Others expressed some concern that the equity-related issues they focus on may be somewhat in opposition to decarbonization efforts and/or is perceived as a more “pressing” issue to address — for example humane living conditions for people who are

incarcerated, equitable and inclusive health services for LGBTQ+ or undocumented migrant communities, etc.

- Focus group participants made several references to the importance of ensuring under-represented communities were part of the conversation and solutions (“nothing about us without us”) — as these groups have disproportionately experienced the burden of climate change.
- The FCO group also emphasized the importance of focusing on small, tangible steps to be taken at the local level as opposed to communicating the larger (and somewhat overwhelming) climate crisis.

“[Our] health care system that’s producing all these emissions is not adequately serving everyone now — in some places we need the sector to grow.”

“Need to look at where clean energy sources are coming from and whether we’re infringing on rights of other communities.”

“Think globally act locally. Strategies that have been successful in my work is where we take ownership at the local level.”

Health Professional Learners

- This group focused a great deal on how the health sector — but pharmacy and dental segments in particular — relies heavily on single use plastics and produces tremendous waste. Participants emphasized the need for greater education and systems level change in this area.
- They also discussed the importance of using persuasive communication strategies to engage learners in this effort. Participants described the many competing priorities of emerging clinicians and practitioners and that to garner attention it would be important to convey “what’s in it for me.” For example, a couple participants suggested hosting educational events where learners can earn continuing education credit and/or that these events could be framed as an opportunity to build their resume.
- Of the HPL respondents in the survey, 8 out of 13 indicated that their health professional education does not include curriculum or lessons related to climate change and its related health impact.

"[Climate change] is not a standard part of medical school or residency curriculum. I think partly because this is new for established faculty and is often seen as outside the fundamentals of what you are meant to learn in residency."

"Institutions that care about addressing systemic issues need to put their money where their mouth is and divest in fossil fuel."

"Where you go to school makes a difference in how much opportunity there is both regionally and politically."

"The future of millions has been stripped away for the wealth of thousands."

Health Professional Workers

- These participants tended to focus discussion on the various “carrots” (or incentives) and “sticks” (enforcement strategies) that could be used to help support the health sector move the needle on decarbonization. HPWs in this study mentioned different types of guidelines, mandates, and reimbursement models that might serve as a relevant carrot or stick.
- HPWs stressed the importance of clinicians “leading the charge” in decarbonization efforts. They indicated that physicians are well positioned to be change agents — both in implementing change among frontline staff and advocating for larger policy/systems change with leaders and decision makers. Several survey respondents noted the importance of identifying provider “champions.”
- Consistent with learners, there was meaningful discussion around the use of single use plastics and waste. They stressed the need for working upstream to start to shift the norms in manufacturing practices and to implement small changes on the front lines.
- HPWs (and clinical HPEs) noted the precious nature of clinical time and considerations for how to balance the needs of patients and the many priorities they juggle if taking on additional efforts around decarbonization.
- HPWs stressed the importance of conducting research to demonstrate the financial business case for decarbonization — particularly in how these practices could reduce health system operating costs.

"It can't just be 'another thing' to do – needs to be a central/primary part of our work vs. a temporary initiative."

"We use so many disposable products to maintain clean and sterile environments."

"The science is clear. Health impacts are huge and while the sector is perhaps 'smaller' than others, we need to lead in this space if anyone is to believe us that it matters!"

Health Professional Educators

- These participants expressed interest in having climate-focused groups within their institutions — like learning clusters, communities of practice, and/or centers of excellence — to exchange information, provide mentorship, and more widely promote sustainability practices.
- Educators, and some HPWs, emphasized the importance of shifting norms around in-person gatherings, classes, and providing virtual health services as a meaningful step toward decarbonization.
- HPEs also stressed the need for better funding and support to integrate decarbonization and climate resilience education into public health and medical curricula. Some educators in focus groups discussed that this was requested by students and faculty alike — yet not recognized or incentivized within the academic community.
- Educators consistently emphasized the importance of continued research, material development, and communication — with a particular interest in fostering a sense of advocacy among the next generation of health professionals.

“I’m involved in teaching but decarbonizing the health care sector is not a nursing competency. I would like to know how this could be a nursing competency and also to support students in learning how to get involved in this.”

“My institutional leaders state we do not have capital to invest in climate solutions and investing in resiliency doesn’t always have an immediate or clear return on investment. Many institutions address sustainability through their facilities organization without collaboration with clinical or safety/QI partnerships. Advocating for required metrics (such as by the Joint Commission) would help drive leadership investment.”

“Having some kind of packet of resources or easy ways for educators to get students involved would be really helpful.”

Patient Advocacy Organizations/Patients

- Like the FCO group, the PAO group spent time focusing on their concerns about the impact on marginalized populations like indigenous people, lower income communities, and communities of color — and the imperative to ensure that decarbonization costs are not passed on to these groups.
- They also mentioned contexts, outside of the traditional health systems, like home health and group home settings as areas of unique needs related to decarbonization.
- This group described how their work is less specific to decarbonization and more focused on environmental health and environmental justice — particularly poor health outcomes driven by environmental contaminants (i.e., cancer, asthma, learning and developmental disabilities etc.)

- Similar to the FCO group, a couple of participants emphasized the need for identifying small, achievable steps for the health sector to tackle and to “aim low” with initial objectives.

“Becoming more resilient to climate change is something that’s a little more readily achievable [than decarbonization] through policy, collaboration, and investments. Having a hospital that can power itself during an outage or an extended period is totally within the grasp of what’s possible.”

“As you said, it’s well worth [the cost] of taking this on but I would not want to see one single dime of those costs passed on the patients.”

“[Today] there’s more acknowledgment and recognition that it’s not just about treating the patient. It involves treating the community and changing things in the environment that are adversely impacting those populations.”

Conclusion

In the focus groups and survey, participants shared a variety of ways in which the Collaborative can effectively communicate with and engage its prospective audiences—and ultimately drive change. These ideas from stakeholders have been combined with considerations from the communication consultant and shared internally with the Collaborative.