Climate Collaborative Public Launch
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Perfected Transcript

Welcome & Opening Remarks

VICTOR DZAU:
Well, good morning. My name is Victor Dzau, and I'm the president of the National Academy of Medicine. I'm delighted to welcome you all to the public launch of the Natural Academy of Medicines Action Collaborative on decarbonizing the US health sector. You know, this summer, the UN Intergovernmental Panel, IPCC on climate change issued a report declaring the evidence unequivocal that human caused emissions of carbon dioxide and other greenhouse gases are the overwhelming driver of climate change. And the report further painted a dire picture of our future in the absence of an immediate and bold action to cut emissions. As you'll hear very soon from (INAUDIBLE) Rachel Levine, the assistant Secretary of Health, the Biden administration has set a goal for the US to cut greenhouse gas emission in half by 2030, the most ambitious target ever articulate in US history. And yet, the UN report signals that we, along with our global partners, may need to be even bolder in order to ensure that we have a healthy and habitable planet for the remainder of the century and for centuries to come.

This is why the National Academy of Medicine is standing up this action collaborative as part of our grand challenge on climate change and human health. Our members, any of our members and I and all of us believe that climate change is among the most important and urgent global health threats and opportunities for the 21st century. I know you all know that is well established, the rising levels of greenhouse gas emissions which cause climate change and influencing a host of health related issues. Worsening air pollution, severe weather, wildfires, extreme temperatures and changes in vector ecology, among many others. And some of the most trusted voices, as we are in the medical field, in the (INAUDIBLE) medical field, in the health field are, you know, we have to have a duty not only to raise the alarm on the health impacts of climate change, but also do our part in addressing the impact that our own sector is having.

Notably, the US health sector is responsible for approximately 8.5% of nation's carbon emissions. Wow., that's almost 10%. That's huge. Knowing this, it is imperative that the sector come together and act collectively to reduce its carbon footprint and to ensure resilience and sustainability for long run. I believe that if done right, these efforts will translate into better care outcomes for our patients, low cost, greater health equity. Of course, it's gonna translate to the good public good because we know that climate change only stand to worsen existing health disparities and inequities. This is why I'm so pleased to share that leadership across the public and private sectors. Coming together, over 50 leaders to date have responded to this call and given their commitment to respond together as a part of this action collaborative. At this morning's event, we share more about our plans for the collaborative, including a discussion of the major opportunities for health sector leadership in addressing climate change.

So that, in fact, is why we here today and we're gonna spend time together to really think about how to move this whole thing forward. I'm so energized by the commitment and the passion and the willingness of everybody ready to tackle this issue together collectively, public, private, across the entire US sector. So, I have three co-chairs on this collaborative. George Barrett, Andrew Witty and

Rachel Levine, the assistant secretary. So it's my pleasure to introduce two of my co-chairs and ask them to say a few words. George Barrett, the former chairman and CEO of Cardinal Health, and Sir Andrew Witty, the CEO of UnitedHealth Group, who each one will make some brief remarks. George, over to you.

GEORGE BARRETT:
Thank you, Dr Dzau. Good morning, all. I regret that we were unable to hold this meeting in person, but I'm appreciative of, to all of you for joining us virtually today. Hopefully, my dogs won't make a guest appearance. Let me start by recognizing our colleagues from across health care who continue to wage what has been an exhausting battle against the novel coronavirus. And it's appropriate that I start here because in thanking all of you for your efforts, it also begs two questions. First, can we take on this enormous climate challenge while simultaneously fighting the pandemic? And second, are there lessons that we can take away from these past 18 months which might be useful as we as a health care system address climate change?

To the first, as Victor made clear, we do not have the luxury of time of dealing with these challenges sequentially. The evidence continues to mount that we have already crossed some dangerous thresholds. And while this requires us to consider various forms of adaptation, we must do what we can in the context of this moment to prevent the catastrophic impacts of staying on our existing course. And to the second, the pandemic reminds us that we do not do well in preparing for highly consequential events which at least on their surface seem hard to predict and perhaps hard at time. We have to fight through that instinct as it relates to the impact of climate change on human health. Over the course of the pandemic, we've been reminded that several things are critical in managing through a crisis. First, a leadership commitment, and we thank the administration for it's demonstrated commitment to dealing with this climate crisis.

Second, we know that innovation is essential. Tackling big systemic challenges using the old tools is likely to be inadequate. Further, we know that we must work in coordination to be effective, breaking down the walls between stakeholders, and getting people out of their silos. This is among the reasons that I'm so excited and so grateful to have players from across health care come to the table to work together now in spite of the challenges we face. The health care system that's the subject of this collaborative is big, it's complex, it is in fact global, and it is deeply interconnected. Each one of us depends in some way on the other and we have much to learn from those around us. I look forward to working with so many talented and committed people and organizations as we move this initiative forward. And with those opening comments, it's my pleasure to turn this virtual floor over to Andrew Witty.

ANDREW WITTY:
George, thanks so much. Let me be very brief but really certainly on my personal behalf, but also on behalf of the UnitedHealth Group a super strong commitment to now being the time for us to bring energy to resolve a path forward to reduce carbon footprint across the health care sector. As you've heard already, you will know is a super complex space and, of course, it's a very stressed environment. Everybody in the health care sector has been pushed to the limits over the last couple of years and continues to be. But unfortunately, the threat of climate change is not moving backwards, it's moving forwards and therefore the time for action truly is now. It's a real pleasure to start to get to know the people who stepped forward into this collaborative and I hope alongside, I

think, Victor and George and Rachel, that we'll see many many more join in this effort as we move forward. We don't know all of the answers or maybe any of the answers of how to really be successful in this mission, but I'm absolutely sure that through the collaborative we will work out those answers. We'll figure out how to make the changes that are needed to make a significant and permanent impact on the carbon footprint of this sector. The last two years, as George said, if it has one silver lining, it shows us our assumptions on the timing of innovation are historic and incorrect. And when we really put our minds (INAUDIBLE)
together and we work together, we can make things happen at scale, at unprecedented pace. And that has happened within this sector in the last 18 months. That should be an enormously motivating lesson learned and something which encourages us to step into this challenge, albeit a huge one, with a sense of optimism that we can succeed. So I'm delighted to help co-chair this mission alongside George, Victor and Rachel. And I'd like to hand back now to Victor.

VICTOR DZAU:
Thank you very much, Andrew and George. I mean, I really appreciate your leadership and your great support. And we look forward to working with you on this very important initiative. So now it's my great pleasure to introduce our third, our fourth co-chair, Assistant Secretary of Health, Dr Rachel Levine. As I said, she, along with George and Andrew and myself are the co-chairs of the collaborative. Dr Levine serves as the 17th assistant secretary of health for the US Department of Health and Human Services. Well, I know she fights every day to improve health and well-being of all Americans. You know she's really working and helping the nation to tackle COVID and that, of course, is more than full time job in building a stronger foundation for a healthier future, one in which every American can attain their full potential. But she oversees the HHS new Office of Climate Change and Health Equity whose mission is to protect the health of people throughout the United States in the face of climate change, especially (INAUDIBLE) a high share of exposure impacts. Now, you know Dr Levin has a storied career, first in (INAUDIBLE) of medicine, and as a physician, then Pennsylvania's physician general, then Pennsylvania's secretary of health. And she has certainly focused on the intersection between mental health, physical health, children, adolescent young adults and, of course, all Americans. So Rachel, we're so glad that you can be one of the co-chairs with us. We look forward to working closely with you. Over to you for your comments.

Special Address

RACHEL LEVINE:
Well, thank you very much, Dr. Dzau, for that kind introduction. I am very pleased to be a co-chair of the collaborative, and I'm very excited to be here today, and to participate in the public launch of the National Academy of Medicines Action Collaborative on decarbonizing the US health sector. I'm also honored to be part of an administration that, even as we are battling the COVID 19 pandemic, is able to act on these longer term issues which are critically important that face our country. Climate change is a threat to the health of Americans right now, and that threat will only increase in the future, especially if we fail to act urgently. While we cannot for a moment take our eye off the COVID 19 response, we have still seen how extreme weather stoked by climate change has added to the health threats of COVID 19, for example, even shutting down testing and vaccination sites. In the 21st century no one should have to worry about the air that they breathe or the water that they drink risking their health. But too often across our most vulnerable communities, that threat is

disproportionately high. So even as we tackle the impact of the pandemic, climate change looms as one more serious threat to public health. In just the last several months, we have seen what climate change can do to the health of the American people. Farm workers in the fields and elderly people isolated in sweltering apartments are literally dying from severe heat. Wildfires are choking people, wiping out entire towns and worsening the risks of the COVID 19 pandemic. And floods from a string of tropical storms have drowned people in the southeast, but even in the northeast and New Jersey in New York. We have seen wildfires so extreme that they affect the health of people on opposite coastlines. Extreme floods in Germany, India and China and extreme heat killing people and animals alike throughout the world. Our world is telling us that it has been pushed to the extreme, and it now is the time for us to listen to it as we would all listen to a patient coming in with health symptoms in our clinical work. The United States health sector, as you mentioned, accounts for 8.5% of US carbon emissions and the global health sector accounts for around 4.5% of global carbon emissions.

We are right now in a place to have lasting, meaningful impact on climate change by acting now in the US health sector. Hospitals are major consumers of energy, water and other resources. So improving efficiency and transitioning to renewable energy in health care facilities is very important, as well as being very symbolic. The action collaborative on decarbonizing the US health sector brings together the full spectrum of health sector leaders and institutions, along with non-health collaborators, to act collectively in a coordinated way to decarbonize the US health sector and commit to sustainable transformations for the future. This effort is critically important towards meeting President Biden's goal to achieve that 50 to 52% reduction from 2005 levels in economy wide net greenhouse gas pollution in 2030, building on progress to date and by positioning American workers and industry to tackle the climate crisis. To do our part in the health care sector, we need to look at building a more resilient infrastructure, spur American technological innovations, and create good paying jobs.

Actual health care facilities only represents a fraction of the total greenhouse gas emissions associated with health care. More than 80% of national health care sector emissions are being contributed by the supply chain, with pharmaceuticals and chemicals having the most impact on pollution. Expenditures on electricity contributed to around 11% of overall health care emissions and direct emissions from hospitals and other facilities contributed around 7%. I strongly urge us all to explore opportunities, but also the current challenges we face to improve the various facets of our health care settings to make them more environmentally friendly. Attacking the issue from all sides will help us achieve the best results. Now, for my part, the office of the assistant secretary for Health is really proud to help answer the president's call on climate change. Just this month, we announced the launch of our new office, the Office of Climate Change and Health Equity, called OCCHE. This is the first office of its kind at the national level to address climate change and health equity, that intersection between climate change and health equity. Its mission is to protect the health of people experiencing a disproportionate share of climate impacts and health inequities. The office will work across HHS and the US government to support the health sector in its transformation to sustainability and resilience.

I want to thank each of you for your commitment to working together collaboratively to build climate resilient health systems and develop low carbon sustainable health systems. Truly, history

will judge us for our actions that we take right now to save the planet in our society from climate change. By working together, we can show the world the role of health leadership, a role that protects our people from the effects of climate change and avoids widening health inequities by building climate resilient health systems. Thank you very much.

NAM Climate Collaborative Overview

VICTOR DZAU:
Thank you Secretary Levine for those inspiring words and your leadership. We are so pleased that we are working alongside with you and the administration to try to find ways to meet the goals that we all agreed that we should. So I'm going to spend about 10-12 minutes in setting the stage for this meeting. As has been said by my co-chairs, this is not an easy task. And I would like to, of course, think about why we need to do this, how we would do this and ,of course, what are we gonna do it with? So let me have the next slide, please. I've already mentioned in my earlier discussion, next slide, please, that the climate change is a public health crisis. Globally, it's actually accountable for over 20 million more deaths a year due to factors like the climate change. And, of course, a large numbers of US relates to air pollution, extreme weather, hurricanes, you name it. But the health sector, as has been said by Dr Levine, is responsible for 8.5% of US carbon emissions. She's already outlined the sources of emission. Scope one, operations of health care facilities, scope two, the purchased sources of energy, heating and cooling, and scope three is the supply chain of health care and services and goods. This photograph or this picture on the left hand side shows you all the kind of events that the United States as put in geographic view location. You can see that it's happening really everywhere. Next slide.

So I've said it is our responsibility, particularly in the biomedical health community, we are society's most trusted professionals. And so we should raised the alarm and communicate about these threats. We have a duty to advocate for health and equity to be at the center of climate change planning and policy.

For a long time, as you know, the Hippocratic Oath says we must do no harm. Well, we do have a responsibility to do no harm because the damages from US health care pollution in some studies is estimated to be the same order as deaths from preventable medical errors. And (INAUDIBLE) that the disproportionate impacts on people of color and marginalized populations are quite significant. So the opportunity is not only to improve health for everyone, but also reduce financial costs of care and disease burden. So we as a sector could be a catalyst, not only to do the right thing for ourselves, a catalyst for other sectors to follow our model, our example to decarbonize as well. Next aside. So, what are we talking about? We are talking about a public-private partnership, as you'll be quite impressed that we have leaders from the entire health sector. Whether their government, industry, hospital systems, private payers, clinician organizations, professional education, academia, non-profits, among others. And together we're addressing the environmental impact and strengthening sustainability and resilience.

VICTOR DZAU:
So, the idea is that we need a system's approach with everybody to set goals together, to coordinate efforts together, to co-develop solutions, and act collectively. Next slide. Yes. So, this is the roster for the steering committee you already heard from us, and the three other co-chairs. And I won't have

time to read through their names here. So far, is to say they represent we the leaders of the entire healthcare sector. From AMA, AHA, AAMC, National League for Nursing, Medicare Services, Healthcare Distribution Alliance, IHI, Health Care Without Harm, Chan School of Public Health, Kaiser Permanente, and others. And of course, Biotechnology Innovation Organization, Medtronic, Mazzeti. And so, you can see truly, they represent the entire health sector. Next slide. And we have divided ourselves in the following workstreams. Addressing Supply Chain and Infrastructure. Addressing Health Care Delivery. Addressing Professional Education and Communication. And importantly, addressing Policy, Finance, and Metrics.

Next Slide. Let me just take a very quick minute to say, what are the issues? What are the challenges? What can this group be coming together to talk about? In infrastructure and supply chain, as Dr. Levine said, about 80% health care sector's carbon emission. So, the private sector really matters, and they are very motivated. And many of them are already moving towards reducing emission waste and expanding their ESG initiatives. Their social responsibilities. But we all recognize there are many challenges. We're here to think about how to overcome these challenges because these are global industries, not only in the US but everywhere. There are many inter-and co-dependencies. And of course, we haven't measured emission metrics, reporting structured accountability, consistently, to date. And there is, of course, the need for cooperation and coordination with regulatory agencies because that would you come with innovation and new ways of decarbonizing and packaging. You know, we need regulatory agencies to understand, because it's going to cost time and money to help streamline the approval process. And of course, there's a common incentive for innovation.

Next slide. So, this group will have lots of options for action. Accelerate and modify the supply chain regulatory process. Identify and activate opportunities, and devise incentivize more sustainable innovation. And, of course, share sustainable metrics and indicators. Next Slide. In the health Care Delivery, scope one and two. That is the hospital direct care, but also electricity, energy consumption is about 20% of total emissions. So, hospitals and health systems already are also working on the need to reduce their carbon footprints. But we need a system-wide commitment and change of practitioners, hospital systems to do more to sustainable levels. And the barriers are clear. You know, during COVID, hospitals are losing money. And imagine, you have to change the business model. So, we need to create a better business model for them. We need to add more financial and payment incentives. There's a lack of sustainable measurements. The lack of transparency and accountability for monitoring and reporting emissions. Next slide. So, this group will have lots of opportunities. Let's look at, in this case, look at sustainability metrics, what we measure. Look at actual options to link performance to sustainability. I'll talk about that later. The value based payments and reimbursement. Of course, health system as anchor institution, in their own community to work with them, to look at climate-smart investments.

And finally, as key opportunities to reduce the carbon-intensive modes of health care delivery. That is to say that the high carbon energy is a way of carrying more into low-intensity community care, et cetera. Next slide. So, I think, that they're going to talk about health impacts of climate change, recognition it is impacting the health of patients, and they are the link between climate and health. And the education side, There's much less of that understood. And of course, we need to include that in the criteria, to recognize and communicate health impacts in the education side. Next slide.

And, of course, lots of opportunities here, to create frameworks and tools to support missions and communicating to the public, but also to learn about what they do every day. Next slide. Finally, I think, we all recognize that what we need is supportive policies, incentives, and payments. Particularly, financing, but also accountability. So, this group will talk about aligning incentives. Looking at shared sustainability metrics and indicators. Like, build a framework for innovative value-based payment models to link performance on some metrics to payment reimbursement. Final slide, please. So, what can we expect from all of this? That talk about the ability to move forward, to really change the nation, and to support the administration's goal of decarbonizing, as you heard from Rachel Levine. So, thank you very much. And so, with that setting background, I'd like to turn over to Andrew Witty, who's going to be now really overseeing a panel discussion. Thank you.

Health Sector Leadership in Addressing Climate Change

ANDREW WITTY:
Thanks, Victor. And for the next 55 minutes or so, we've got the great opportunity to hear some contributions, and then, hopefully, a little bit of discussion from five of the members of the collaborative, whom I'm very grateful to have been willing to give some time today, to take in this next section. So, really strong credentials, very much represented in the breadth of the types of organizations and individuals who have joined the Collaborative. Looking forward very much to hearing from each of you in your comments and then hopefully, in the conversation. With that, let me invite Dr. Michelle McMurry-Heath to kick us off, please.

MICHELLE MCMURRY-HEATH:
Wonderful. Sorry, I'm a bit slow with my mute button. How is everyone, today? I am Dr. Michelle McMurry-Heath, and I lead the Biotechnology Innovation Organization, which is a membership organization with over a thousand biotechnology companies in biopharma, agriculture, and environment. And I am so pleased to be part of this panel and to serve as one of the leaders of the National Academy of Medicine Action Collaborative. A huge thank you to Nance leader, Dr. Victor Dzau, for his big thinking and determination in pulling us all together. It's really big thinking and determination that will continue to be critical in the fight against climate change. We won't make real substantive progress unless, we're willing to set lofty goals, even as we take practical and purposeful steps to reach them. BIO members are already doing just that. And it's a thrill for me to lead a diverse and active organization like BIO, which is home to companies big and small working across nutrition, manufacturing, agriculture, and health care.

Our company's Biotech centers and investors are all committed to sustainability and solving the climate crisis through science. We want to develop solutions that are shared and scalable to solve our global challenges. And, in essence, we are really the tip of the spear. We leverage our deep knowledge about the mechanics of life at the molecular level to accelerate solutions that cure patients, protect climate, and nourish humanity. Our members are using the latest technologies like CRISPR and synthetic biology to transition us away from carbon. Though that may sound lofty, but let me give you a few examples, to really, give you a sense of the breadth of some of the types of solutions being produced. Joyn Bio, is a joint venture between Bayer and a synthetic biology leader, Ginkgo. It uses biotechnology to reduce agricultural greenhouse gas emissions by designing nitrogen-fixing microbes, which reduce the need for synthetic fertilizers. Genomic data also uses

renewable feedstocks, such as sugars from locally grown crops, as well as, engineered microbes and fermentation to make less carbon-intensive apparel, footwear. And plastics, being critical in the delivery of health care. And they do it with fewer toxic ingredients.

Danimer Scientific produces polyester by feeding a bacterium with inexpensive vegetable oil derived from canola and soybeans. Its bio-based manufacturing by-products are then used for protein-rich animal feed and natural fertilizers. Finally, Kibo produces premium gasoline, jet fuel, and diesel fuel by converting renewable energy into energy-dense liquid hydrocarbons. Once again, transportation is our key to the delivery of health care, and finding a way to make our fuel supplies more carbon sensitive, would be an incredible advance. So, it's all amazing science. And BIO is playing an important role, supporting these companies through advocacy, collaboration, and education. Part of our job is to connect these agricultural and environmental innovation leaders with the broader supply chains and our health care delivery systems.

So, we want to bring these solutions to a bigger slice of the health care pie. And like our other members, BIO Health Care's members are committed to carbon reduction, as well, with many of them making impactful reduction commitments. These companies are doing so to improve their environmental footprint, which generates a positive impact on people, health, and communities. So to that end, this meeting and this broader effort are important reminders that the pandemic revealed the profound connection between all living things. Emerging zoonotic diseases will become more prevalent as our climate changes and human populations migrate around the world. And in reality, mitigating climate change is one of the most crucial steps we can take to prevent future pandemics and improve public health. And that's why I'm particularly, excited to be part of what Dr. Dzau is organizing. Like NAM, BIO has a unique policy and convening capabilities, and I want to leverage this great exercise to do good for science and our families and communities. It's clear that we have no time to lose, and I look forward to these productive conversations and the conclusions that we come through. Thank you so much.

ANDREW WITTY:
Michelle, thank you so much for those words, and particularly, for that teaser on some of the innovations in which you and your members are involved in. Very exciting. Thank you. Let's now move to the hospital sector, and perhaps I could ask Michelle Hood to take the floor next. Michelle.

MICHELLE HOOD:
Well, thank you so much for having us here, today, and for the exciting work that this collaborative represents. Hospitals and health systems, as we heard from Dr. Dzau, that we have really, had a tremendously challenging past couple of years, but that doesn't remove our ability to turn to developing an approach to this complex issue of the effects of climate change on the health of our communities. There are certainly, items that are within the purview of our hospitals and health systems to tackle independently. But as also we've heard, I think, that the supports of collaboration and partnership are particularly, important because this is a unique opportunity to bring stakeholders together and to stimulate the change process. I think, we also heard from Dr. Dzau about the missing element of a strong business case, in this regard.

So, the 5,000 plus hospitals and health systems that AHA represents, will respond to a challenge if we can, effectively define what it is that we are working towards and the impact of that work on

their mission, which is to improve the health of the communities that they serve. Hospitals and health systems, and the doctors, nurses, pharmacists, and others that they represent, really, have a unique role in their communities. Often, they are the anchor institution of that community. And they certainly, have a trusted voice in all things related to community health. So, we stand ready to take that voice and that trust that we enjoy, and bring it to bear on these complex issues. Many of our hospital and health system members are already tackling climate change through opportunities to impact the supply chain, utilizing their influence for the impact of the packaging of supplies. Those are also working towards energy conservation through the use of unique and renewable energy sources where those are available. The pandemic has also provided us with an interesting dynamic that, I think, this effort should take advantage of. And that is, that we have moved a lot of care out of our big organizations, out into the community, into homes. And I think, that provides a great opportunity for us to reduce the footprint of our physical plants, which will also contribute to conservation of energy and other value-based supplies.

So, we would like to also put it on the table, and I think, have an opportunity to talk about this further in our dialogue section of the panel, today. The fact that we are constrained in some respects, to have the highest impact on climate change mitigation because of the antiquated and sometimes conflicting federal state, and local regulations. And so, with the ability of this Collaborative to identify those, bring those to light, and advocate on behalf of our joined mission here, to have that those regulations updated, and change will be an important contribution. So, with that, I would say again, thank you for having the American Hospital Association. We look forward to actively participating in this and bringing the message back to our members.

ANDREW WITTY:
Michelle, thank you so much. It's great to hear from such a critical part of the sector as the hospitals and health systems. So, I very much appreciate your contribution today, and you and your organization's engagement in the mission. So, thank you. Let's move now to the American Medical Association and Dr. James Madara. So James, would you like to, or Jim, would you like to take the floor?

JAMES MADARA:
Yeah, thanks very much. And, I want to thank the academy and the co-chairs for this opportunity to comment on the effects on the health, of carbon contributions to greenhouse gases, the resulting climate change, and the sequela of that climate change on health. The American Medical Association has a variety of policies on this topic, recognizing the threat of carbon released to climate change and to the health, and well-being of our patients. And before touching on those, I'll just first briefly review how a policy is formed that shows a collaborative engagement of physicians. Well, the AMA is a membership organization, we also broadly convene physician associations and societies. So, in fact, in ordinary circumstances, twice each year, we bring together our House of Delegates and this deliberative body proposes debates and formalizes this policy.

All 50 State Medical Associations, all specialty societies, even the four branches of Military Medicine are represented in our House of Delegates. So, there are 180 medical societies convened in our house meetings. And that's the broad representation of American Physician Societies that provides the strength to the AMA policy portfolio. So, what are those policies from this broad grouping of physicians? Well, briefly summarized, AMA policy supports efforts to promote environmental

sustainability, the reduction of greenhouse gas emissions, climate change education across the entire medical education spectrum, scientific research on climate change, and four physicians to join in and being spokespersons, on those issues. Now, the rationale for these positions taken by that broad coalition of physicians, simply stems from the known deleterious effects of greenhouse gas emissions on the health and well-being of our patients. So, what steps might be taken toward the assimilation of physician participation and responsibility in addressing this problem, particularly, as it relates to carbon production by the health care system itself? And I'll just provide two examples of a specific policy in the broader area. And then, subsequent action and process. The first is in the area of education. Physicians generally, understand the link between greenhouse gas released and the health of our patients. However, this understanding can be spotty and the contribution of our health system, the carbon production, is really not well recognized, I don't believe.

Recent AMA policy supports teaching on climate change in the full spectrum of medical education. Accordingly, one of the medical education innovations produced by our consortium of 37 medical schools, is the introduction of a third science for medical school. And that's Health System Science, which complements the important long-standing elements of Clinical Science and Basic Science. And a piece of Health System Science curriculum recognizes the health issues related to greenhouse gases. But that curriculum can be enriched by including an understanding of the contribution of the health system itself to carbon released. I mentioned this, because, I think, education is always the first right step in dealing with such an issue. A second specific example is a policy entitled Global Climate Change and Human Health. And this policy recognizes that climate change creates conditions that negatively affect public health. And with strong and disproportionate impacts on vulnerable and minority populations. So, again, what needs to be strengthened here, is the understanding of how the health system itself participates in the release and greenhouse gases, and how provider organizations like Kaiser Permanente are successfully mitigating that effect.

Additionally, I would say that the recognition of the disproportionate effects of carbon release on minorities and underserved populations requires attention. And for reasons like that, we launched our Center for Health Equity, led by Dr. Aletha Maybank, on problems related to carbon released from all sources that require an understanding of and a response to the enormous inequities in our health system. In summary, as represented by AMA policy, which in turn represents the product of a broad convening physician state and specialty societies, physicians recognize the threat of greenhouse gas released from all sources and its threat to the health and well-being of our patients. Physicians and medical students are engaging in education around these topics, as well as, the related downstream

Effects such as health disparities. And having said that, we have a substantial additional work to do in internalizing how our own health system contributes to greenhouse gases and how we take steps toward mitigation likely steps already to find in some health care enterprises. So, again, I thank the academy for highlighting this opportunity, an opportunity to improve the health of the nation.

ANDREW WITTY:
Jim, thank you very much for that, fascinating. And let's move on straightaway to another key group of clinicians. I'd love to hear from Beverly Malone, from National League for Nursing. Beverly.

BEVERLY MALONE:
Thank you, Andrew. And my thanks to Victor and to all my colleagues that I will be working with. I'm delighted to be joining this esteemed group. Nurses are at every door that you walk in in terms of health care and then some doors that you don't walk in. And so we are the conveyors frequently of how people live their lives on a daily basis of social health determinants. Climate is one of those issues of how you live your life on a day-to-day basis. The National League for Nursing that I work with is an organization that its mission statement is promoting excellence in nursing education to build a strong and diverse nursing workforce to advance the health of the nation and the global community. So, there is an appreciation that it's not just about the health of this nation when we look at climate control, it's going to be a bigger job than that.

We also have to keep our eye on the global community. And I was cheered to hear my colleague from the American Medical Association talking about diversity because it's one of our core values, diversity and inclusion. It's not enough just to have a diverse group, one potato, two potato, three... It has to be an engagement level. And so climate gives people an opportunity to engage in a very different way. The other values that underpin that mission statement that I just mentioned is caring, promoting health, healing, and hope in response to the human condition. And if there's anything we need right now, it is critically hope. With the pandemic just ripping through us and now climate change is what's so vividly demonstrated by Victor earlier and by my colleague Michelle Hood, and all kinds of different ways showing up, whether it's flooding or whether it's fires, you name it. Climate is saying, "I'm here and have been here, but now this is your Earth, so why don't you take care of it?" One of my colleagues once said to me, she said, You can't have healthy people without having a healthy planet." And that just stuck in my heart that here I am a nurse taking care of patients and ignoring the fact that my planet is suffering in the same way. And that unless I make sure my planet is taken care of, then the people will be taking care of.

The other values that the NLN has, so it's caring and then integrity, which we can use a heavy dose of in a number of different ways. And then after integrity, it's diversity and inclusion, and then finally, excellence. And excellence is co-creating and implementing transformative strategies with daring ingenuity. And colleagues, that's what I expect this group to do, co-create, and then we're going to implement, as Jim was talking about implementing. Transformative strategies, not just change, but transformative strategies. And it's going to take some daring ingenuity to pull it off. So, I'm looking forward to the work that we're going to do together. Nurses tend to be team leaders and we understand we don't do anything by ourselves. And obviously, this group here is a group that's going to do it together. So, it is with appreciation and excitement that I join this group and look forward to the leadership, Andrew, and looking forward to the leadership, of course, of Victor and all of us together making this happen. Thank you.

ANDREW WITTY:
Beverly, thank you so much. Great to hear your passion, and I know that represents your entire membership. So, really very much appreciate your words. Let's finish off this section just in the next few minutes. I'm delighted to ask Don Berwick to make a few comments here. I think would bring a very interesting, holistic perspective, and look forward to hearing from you, Don. Please go ahead.

DON BERWICK:
Thanks, Andrew, And let me thank you and your co-chairs for the chance to work with this

remarkable project, and I have to tip my hat to Victor (UNKNOWN). I've never seen leadership as intensely devoted to a change topic as I'm now seeing Victor devote to this work. I'm deeply in your debt, Victor. I want to look ahead a bit to the mountain that we're about climb because I think it is a mountain, and I don't think our success is assured at all. We are losing the battle against climate change at a global level right now, and that's because we're trying somehow to manage a dreadfully difficult problem through some version of business as usual. And it's just not going to work. It's not going to work. We have to stop admiring what we've been doing and decide to do something different. I think the cards are stacked against us, and I want to explain what I think the nature of this obstacle is that we're going to grapple with. The gravitas and force of the National Academies does hold promise. If we really can come together across the sectors that Victor's assembled, we can do it, but the odds are low. There are five facts I'd like to lay out, the first is we are, or you've heard, the urgency here is immense. The likelihood of serious damage to the planet is no longer a probability, it's a certainty and the costs are enormous. The IPCC report just out makes it even more dire. The clock is ticking. The timeframes are short. This is nature at work. This is facts at work. I sometimes use the analogy as a physician of a cardiac arrest. We know as physicians that when someone's heart stops, nature tells us we have three minutes to establish circulation. If it's six, the brain dies.

We don't have a choice, and therefore we build our systems around the imperative of getting to the bedside and starting the heart if we can in nature's deadline, it's the same now. The emergency is slower, is less dramatic, but we don't have the option to negotiate against climate change. It's going to happen unless we stop it. The second fact is that the health care context is very fraught right now. If you try to walk in the shoes of the health care executive today or a clinical leader, think of what they're thinking about as they drive home at night, (UNKNOWN) pressures, a pandemic, workforce burnout, workforce shortages, changing payment models they don't yet know how to accommodate to, serious disarray in the streets around equity and racism and anti-racism that has to enter health care, social determinants of health. Now, a whole new portfolio of things that healthcare has got to deal with. It is a really hard job to lead health care today. And now we are showing up and saying, Oh, by the way, save the planet. Any executive with a brain would have a first initial reaction of not another thing. How could I possibly deal with this? That's what they're thinking. That's not what they're saying. Every executive, every board is going to say, Sure, I want to save the planet. I'll do my part." That's not what they're thinking. They're thinking, this is another thing that they have to somehow handle and we get off their desks. And that's not because they're bad, it's because they're overwhelmed. And so I think we have to understand the ask here and how dramatic it is and how frankly unlikely it is at the first outset that authentic response to the problem the way Beverly was talking about would actually be what will happen.

What will happen is compliant response, greenwashing is the rather rude term for this and that's what's going to happen unless the National Academy does something different from usual. The classic stewardship models of finance and health care are going to still dominate unless we somehow add the carbon budget to the strategic imperative in a real way. I think it's going to be hard to achieve authenticity. Even we on the panel speak about what we're doing, not about what we're not doing. Third, health care is a significant factor in the carbon load we heard the numbers from Secretary (UNKNOWN), but significant does not mean controlling. And to be absolutely honest if health care did nothing, it wouldn't make the difference, and if health care did something, it won't

make the difference. We're simply part of something much bigger than ourselves. And there is a legitimate claim that could be made logically that health care doesn't matter because the percentages are too small. Obviously, we wouldn't make that argument for voting or contributions to other social goods. We have a duty here. But stepping up to that duty has got to take account of the fact that we're part of something much bigger than ourselves and it's the whole that has to act here. This classic paper by Sokolow and Pacala on wedges of carbon reduction make the point. We're only a wedge, and we're going to have to decide that even though we're only a wedge, we're going to do our part. And that leads to the fourth point. This is a classic problem of collective action. A massive part of the collective action is that there can be free riders, health care can be a free rider if we choose.

We can say we're already doing it or we're doing enough or we can't do it, and it won't make the crucial difference. However, when the problem is a problem of collective action, freewriting isn't the right answer, it's not the humanity we want to be. It's not the collective we really want to be. And so we have to recognize this is almost a political context, the socio-political context of being only part of a larger problem. Those are facts. That said we wouldn't be here today, and Victor wouldn't have assembled us and we wouldn't have shown off or we didn't care about it. I've got eight grandchildren and I used to look at them thinking that their children will be the ones to suffer. No, it's going to be them. The piece of this now affects people whose names we know and people who we love, and I'm not willing to wait. I think we've got to jump on it and create collective action that's authentic against all the odds I just recited. How do you do that? I think that's the job for this collaborative. I think we have to solve the problem of how to create new collective action when the odds are stacked against it, and we have to be realistic about this or we won't have any effect. It has to do with alignment, alignment surely of leadership voice. If all of the people in this collaborative and others we know speak with unity about this over and over again and really mean it, there's a chance of success. It has to build on the intrinsic motivation that Beverly was talking about. The workforce wants to do this, I'll tell you that.

The health care workforce wants to engage in saving. They have to be invited to do it and we have to create opportunities for them to do that. And that's change. What is it going to look like inside your organization? And then we have to use the hard edge of this regulation, policy, payment models and incentives, and metrics. We won't have done a thing unless and until we change the carbon load in the planet. That's the metric in the Institute of Medicine's 100,000 Lives campaign or Rubrik was, sum is not a number, soon is not a time, that applies here. The number we want is less carbon, and the time we want is starting right now and achieving it to zero if we can within a breathtakingly short amount of time. These will not be welcome prospects for all of the celebrations there'll be of our launch of this collaborative. Most of what's going to go on in the heads of the people listening to us isn't, Thank you for being here. It's going to be, "Oh my God, I don't know how I'm going to handle this." We have to recognize that. But I think the stakes are too high not to do it. I think we must do it. If someone's heart stops, you get three minutes to start it. We've got three minutes left on this planet and we better do something. So, Andrew, thank you for the chance to comment. I look forward to the dialogue.

ANDREW WITTY:
Thank you very much and I really appreciate your kind of strong imperative you brought there. But

also with that sober reality of the challenge and the scale of what we have to deal with. And I think a key to always solving complex problems is understanding exactly what it is we're dealing with and not drinking the Kool-Aid, not pretending it's not difficult, it is going to be difficult. So, I think you shone a light on that very powerfully. But I also think your three-minute analogy is completely correct. We have a very limited time to make an impact. It's crucial that the health sector plays its role. I remember being involved in the elimination of CFCs, and there were all sorts of people who used to use CFCs, and there's an interesting phenomenon. You can start a process of transition as a very small wedge. If all of the other sectors start to move, very quickly, you find that that very small wedge becomes an overwhelmingly important of what's left. Eventually, you become the giant wedge that's remaining. And so for me, you never want to be in that position. All that means is you've wasted years of time and you've missed the opportunity to innovate while other sectors have taken advantage of that. This should not be something that happens in this situation. It's important that even if an eight and a half percent is still an enormous piece of the problem, even if it's not the lion's share, it's still a significant share and we can make a big difference by moving quickly. And I think as well it can be inspiring for many other parts of the system to see the health sector begin to work together and solve these problems.

So, Don, I really appreciate the perspectives you bring. Very helpful. Let's now open up a little bit. First, hopefully, some dialogue between the groups and then pick up on a couple of themes that maybe got raised. And Michelle, I wondered if I could go to you from a hospital perspective and really picking up a little bit of a theme that Don mentioned. Hospitals super stressed have been really put through it in the last couple of years in particular. And I think many would argue that even before that, there was tremendous transformation going on within hospitals, huge adjustments in all sorts of regards. Maybe just really picking up Don's point of how do you get executive team, boards to give this question priority when they have so much else going on? And no, that's true for everybody, but maybe you might speak to the hospital sector and your sense of how we might go about making sure that this does get authentic attention paid to it. Michelle.

MICHELLE HOOD:
Yeah, I'm glad to comment on that, Andrew. I think that the key may be that on the to-do list of all of our hospital executives are issues related to the equity of care, social determinants of care, and social determinants of health, community well-being. So, I don't see it as adding something is just another dimension of work that they already have in front of them. But I think that the need to build the business case cannot be understated. We have to be able to define what we're doing, what we want to do, and what does it look like at the end. And the metrics are important as several people have said today. But I think there are so many dimensions to this issue so far. For example, as clearly as adding climate issues to the profile of individual patients and what they are dealing with, including that is as a part of their record, to the boardroom where we make decisions about how to invest our assets on the balance sheet and who handles those decisions for us around where those investments go? And are we investing enough in those companies that can help us mitigate the issues around climate change? So, I just think it hits all dimensions of the executive's to-do list. I don't disagree with Don Berwick around the fact that people are if we don't tie it to their existing goals and objectives and strategies and initiatives and vision of the future for the communities they serve, they will think of it as just something else on the to-do list that sits by itself. So, our challenge,

I think, is just to integrate it into the ongoing goals and objectives of the executives and the boards that those communities serve. That's where I would start.

ANDREW WITTY:
That's super helpful. And maybe Don and then I go to Michelle McMurry-Heath. Can we add to that set of thoughts, maybe observations you might have around incentivization opportunities? So, these are rational organizations, rational people. Many of them have shareholders, even if they're not-for-profit organizations in health care, they also have an accountability to behave economically rationally. We're seeing in many, many sectors evolution of new investment structures we're seeing and we have an opportunity, I think, within this collaborative to really shine a light on a conversation with the administration in terms of how you might desire to see the regulatory incentive or financial incentive models be built up. So, Don, I wonder if you might like to just reflect a little bit, put yourself in that shoe that Michelle was just talking about the kind of complexity. How might this be an area to explore opportunity? And then Michelle McMurry-Heath, I might ask you to respond from the perspective of the innovative industry. And similarly, if you don't mind. Don.

DON BERWICK:
Thanks, Andrew. I don't think it's a simple answer, I have a couple of thoughts. One is we better attach metrics to this one. If we don't define what a positive move is, it will be very hard to step up. I think it's carbon. I think this collaborative needs a metric of carbon production, both for all three levels of carbon production, and I think hospitals need to start measuring it and producing it. And I think the same may be true to physician groups do. I'm not sure how to do it the physician level. But without metrics were dead and the metrics had to be about results. And this is just like we do with other incentives. If we do process metrics, we get process compliance. But if we do results metrics, we may get the results. Second is I think this I think money can be saved. Jeff Thompson's immense work at Gundersen Lutheran with
(UNKNOWN) is doing as it moves toward carbon zero, I think is going to teach us to actually save money by doing this. And if we can make that case, ways that can align things up well, there has to be a piece of that that helps. In addition, of course, there may be some capital that's needed. I understand that, but I believe this could be a money saver. The final one is, I think this collaborative could set up a set of learning supports. Let's say there's a hospital or it's on the threshold sort of says, OK, I think we better do this because there was a regulation now and we're being studied and we could make some money. They are ging to need some help. And I think setting up an infrastructure which actually tells them what to do and like several speakers have said, we know what to do. We actually have the models in hand now. That would be very helpful. So, we are to add supports to incentives and we stand a better chance of success. I hope that's responsive, Andrew, I'm not sure...

ANDREW WITTY:
It is. It's very helpful. And I don't think we're certainly not looking for a there is no completely simple boxed answer, but certainly, that's very stimulatory. Michelle, from a bio perspective, maybe say the same kind of question from you already cited some examples of the change. You're seeing a change in the way in which the sector is beginning to focus its innovation to try and help in this agenda. What would make a really step-function change in terms of this agenda, from your perspective?

MICHELLE MCMURRY-HEATH:
I mean, it is challenging. I agree with the criticality of making the business case. I'm just not sure we're going to be there, particularly in the short run. I mean, the changes we're talking about spreading all take some investment. And then the question is, even if you have savings after that investment, is the opportunity cost of going that avenue. More cost saving than some of the other levers that are available to our biotech and health care CEOs. That being said, I do think there is a case that we are uniquely positioned to make, and that is the public health case, that is for the companies that are publicly traded, the activist investor case. And then, one of the scarcest resources that we face in biotech. And I think it spreads to all of health care is the talent race. Talent is the scarcest resource that our companies face. And I think making the case for being competitively attractive to incoming talent is something that we can also make. So, let's definitely work on the business case. But let's also not shy away from the other really key benefits, that could help the businesses of health care feel like they're getting ahead as well.

ANDREW WITTY:
That's really interesting. I think one other area, which you know, certainly from our perspective, I think might be worthwhile as thinking about, is how we make the health sector increasingly attractive to capital flows. So, this sector is an enormous recipient of private equity capital, as an example. Right, but not the only one. What we're seeing in Europe is increasingly, investors are looking to only invest in portfolios which are essentially green, right, in terms of their fundamental makeup. I think it's a very interesting potential avenue to explore here. In terms of, how you might, by making the right choices in the climate sense, you can make yourself very much more attractive for competitive capital deployment, which I think is an element of the business case, which is obviously. Often, we look at the business case from a panel perspective, we don't necessarily look at the business case from a kind of cost of capital financing perspective. And I think that could be a very interesting avenue for this group to spend a little bit of time on down the road. So, I think this space of incentive, how we really... But how do we get large pieces of the health economy in the US, to start to shift behavior in short periods of time? It's got to be some kind of relatively simple incentive set, plus the right regulatory frame in which starts to drive that change. Maybe I could shift gears slightly. Beverly, you mentioned, and I'd love to just hear a bit more from you around the equity agenda that's embedded within this. There is a tremendous moment in time where I think we're seeing, and I do think, I hope very much and I think it's authentic, a shift towards real focus on equity, health equity. But I'd love to hear a bit more from you on that perspective within this context, if you wouldn't mind, Beverly.

BEVERLY MALONE:
Yes, I like to speak to that, but I'd also like to speak to changing the focus, and how you get the talent. And to me, I'm an educator. You start with education. You start with how are you preparing the potential workforce. And it has to be in the actual curricula that are set up. And, but how can it be put in the curricula, if the faculty have no idea what you're talking about. So, there has to be this understanding of getting a prepared faculty together, to help with preparing the student body, or the student, or the exports. It's and you need some metrics around that, too. Are we actually doing that to change how people are prepared? So, that's one thing I'd like to address. And now, and equity is part of that, because if you don't have equity in that system, then you're back to zero one right away. And so, this whole idea that it's almost more politically OK to talk about equity, it's not

that it hasn't been an issue forever. But it's now, someone and I have to say it's all of the groups like Black Lives Matter, you name the groups. And the issue of social determinants of health, suddenly became a word you could say out loud, that have to do with giving us permission to have those courageous conversations.

And so, health care. I'm a nurse, and the Gallup poll says that I am the best that, you know, that comes under most trusted profession for the past 20 years, and I believe it. And so, the issue is around, how do we make sure that even those who think that they are the most precious thing, like nurses, that we understand we're missing a big piece. That we are still missing the connection of the climate to the public health issue that Michelle is talking about. And that that's, when you say public health, that is a nursing care issue that you cannot think that people are only in the hospital. No, they just visit the hospital. They go through the hospital to the community. They live actually in the community. And one of the things one of my colleagues say, you know, I listened a lot to the brilliance of my colleagues and to others, like in this group. Said that, when America sneezes, the black community catches a cold, pneumonia. So, it's this whole issue of that it's a whole different level of severity with vulnerable populations, and that that's, that is the issue of health equity. But not only that, it's those who are providing the care, who are also, need to be looked at with a microscope.

Maybe not even a microscope, just looked at in terms of how they're being prepared to look at issues of equity. It doesn't even come up in terms of climate. Is there some understanding about food deserts? Is there some understanding about where you live has so much to do with how you are addressed? I, for example, Bev Malone, I grew up in Kentucky, on a creek bank that flooded every year. And so, and I grew up in a place where coal fell off the train tracks. And we had a coal stove in our house, so I went to pick up the coal. I did not ever connected to climate, and no one connected it to climate. So, those are the kinds of learnings and opportunities for making a difference in how people think. And I think it goes beyond us providers into the community. How are we going to convince those other disciplines, those other community people, that this is really an important issue that floods, every all of us, it's an overwhelming flood.

ANDREW WITTY:
Beverly, thank you very much. Really powerful and much appreciated. I think you'll point that education is going to be crucial here within the sector, and then everybody who interacts with it. And maybe, Jim, I'd love to get your perspective on that. So, another highly trusted group of stakeholders, obviously physicians, love to hear your perspective on the education agenda. But also maybe, I'd be a little bit more controversial. So, so far we've all talked about how things have to change. Now, the reality is that the people who really then have to change their day to day practice are the doctors, the nurses, the clinicians, folks really on the front line. How ready do you think the physician communities are to what could be, if a lot of what could come from addressing climate change, could require significant changes in the way medicine is practiced? You know, in very basic ways, it could require a lot of rethinking about how things get done. If you think, do you think physician communities are ready for that? So, I'd love to hear your additive comments on education, and then I'd love to hear your comments on physician community readiness for change.

I think you may be still muted, Jim.

JAMES MADARA:
I am. I have to make that mistake at least once a day. Yeah, in terms of the education, I would say the following that, at the granular level of the individual physician, there is no mindshare or very little mindshare going to climate change in the middle of a pandemic. So, it's an organizational kind of responsibility of organizations, like the organizations that are present on this panel. And I think one of the attractive ways to educate people around this, it was touched on by Michelle, which is you make this important to your current strategic framework. And so, for example, one of our three accelerators in our framework is equity. And there is a very clear relationship between climate change and health equity. Another of the three is, one of the three strategic parts of the framework is chronic disease, again, relationship between climate change, air pollutants, and chronic disease. And that's an important area that, you know, chronic diseases, you know, 85, 90% of our $4 trillion spent. The other thing that, there is some low hanging fruit that we could lose. And what I mean by that is there were many regulatory relaxations during the pandemic. You know, an example being around telehealth.

You know, telehealth would be thought to be impacted, would impact in a positive way by keeping folks out of, you know, large buildings, so to speak. So, some of the relaxations that we already have would be low hanging fruit if we can maintain them as well. And in terms of the physician community, I think sometimes there's an underestimation of the willingness of folks to change. And I see that with technology, for example. So, you introduce something, you know, like robotic surgery is rapidly adopted, because it actually works. And it fits in, in a systems engineering way to the workflow. Where physicians get hesitant, is if there is a point solution that interferes with the system's function around them, on one hand. If they don't believe, you know, they think this is a fiat that they're being asked to do and it is unimportant. And then, the primary driver we find of physicians, the intrinsic motivator, and in a multimarket study done in collaboration with Rand Health, was first the time with patients, face time with patients. And secondly, being able to drive home at night thinking that you improve the health of the group. And so, I would always think about those as the, where in the physician community. Those were the incentives that you have to hit. If you start throwing in external incentives that don't relate to those things in complex cognitive tasks, you're going to have a deterioration of performance, not an enhancement of performance. So those, I think, are, you know, important pieces, both in terms of the education of the physician community, and the willingness of physicians to shift.

ANDREW WITTY:
Yeah, I love that. And I think your point. If it works and it fits within the workflow or is systemically rational, right, the same thing, then things get adopted. That's a really important couple of watchwords in term, because it's term. I mean, we could all think of hundreds of examples of medical innovation, which has looked fantastic and has kind of failed, because it basically didn't consider how it fitted within the broader system. And while it might have been a cool widget, it was never worth the complexity of the system to change, to adopt it. So, I think as we think about this particular challenge, that kind of, those watchwords. You know, does it work, and how is it being thought through to fit? That is going to be one of the ways in which we get adoption. I think that's what you were saying, right?

JAMES MADARA:
Yeah. And I think the important thing to keep in mind is you're dealing with mission oriented folks, you know, nursing, physicians, et cetera. And I learned a lesson around that coming into the AMA, when we developed the first strategic long term plan. Everyone, we had to disband things that we were doing. I thought we would have to have over 60% turnover of the workforce, and we didn't. And the only reason was, I realized there was a mission based folks, and all we had to do was convince them that you'd have more impact going in this direction than in the old direction. But keeping in mind whether the intrinsic motivators of folks is really important.

Summary & Concluding Remarks

ANDREW WITTY:
Yeah. Now, that's a great point. Thank you so much, Jim. Just as we come to wind up this session before I am back to George, let me just make a couple of comments, and then I'd love to thank everybody for your participation. Certainly, you know, from our perspective, UnitedHealth Group, this is a really important agenda. We're fully committed to this in terms of what the part we can play, as well as how we can help the system. And obviously, with our presence, both in the payment side as well as the delivery side of health care. You know, we would do everything we can to try and help facilitate progress as the collaborative identifies opportunities to go forward. One of the things that strikes me that we all should think about is, how can we put the health sector on a diet for its complexity? So, you know, if you think back to the core climate strategies, the very first one is to reduce, Right, reduce, reuse, recycle. Reduce is a good one.

Now, nobody wants to reduce care, but could we reduce just the weight of complexity that we wrap around great care. And I think you'd have to be pretty heroic not to believe there wasn't a reduction opportunity in the environment. So, I think there's a ton of opportunity in that. That for me starts to line up where there might be quick wins here. Because, you know, any complex challenge is hard. A complex challenge which involves a system, or a sector as complex as this one is even harder. And I'm kind of riffing on Don's, you know, the slightly more pessimistic side of Don's analysis. And therefore, to get mobilization, we need some quick wins, right. We need to find things which really do make a difference, which really start to persuade people that it's worth the continued engagement. I think reduction becomes a really interesting concept. Reinvention or invention becomes a much more mid-term opportunity, but nonetheless having some quick wins before that even better. So with that, I just wanted to thank our panelists today. So Beverly, Don, Michelle, Michelle, and of course, Jim.

Thank you so much for giving up the time today and sharing some of your thoughts. I hope people who've been listening found that to be as stimulating as an observation. I think you heard, as you should expect different views, you heard how the mission to try and decarbonize the health sector fits very naturally within the missions of many, many organizations, which you heard from. I think it sits alongside the heart of many individuals, as you heard from Beverly and Jim, as they talked about physician and nurse perspective. What you also heard was none of this is easy, none of us have the, you know, is not just a box to unwrap with an answer inside it, which is why the collaborative is an important step to try and bring together different folks, different perspective. How can we figure out things which work at scale, and do fit within the workflow or the context? So, create improved

outcomes for patients, while at the same time improving the climate prospects, and reducing carbon across the health sector. So, I hope you were inspired by some of those comments. There's going to be a lot more opportunity for people to be involved and contribute. We look forward to that.

We look forward to great ideas. Would love to see as much innovation as possible. One example is finance and capital. Another is what could come from the pharmaceutical and the bioindustries. Another that can come from the digital industries and the technology industries. And another, of course, comes from the minds of all of the participants of the sector, the nurses, the support workers, the physicians, everybody who's involved in the sector, one by one can contribute to how we can innovate in this space. And I know from within my company, we are just blessed with a number of passionate people who really, really see it as their moment to contribute, to helping save the climate, and ultimately make the planet a more hospitable place for our descendants to live. So with all of that, thank you all for your time on this panel, and it's my pleasure now to hand back to George Barrett, George.

GEORGE BARRETT:
Thanks Andrew. That was a fantastic panel. Thank you to all of you, remarkable leaders, each representing sort of different point of view in health care, and this is so valuable as we go forward. I'd love to summarize that, I think Andrew did it perfectly. There was so much in that discussion. But one of the things that it did for me as we're sort of closing out the day, is it did, sort of highlight why I think our focus on a couple of areas, delivery of care, infrastructure, professional education, policy, financing and metrics actually makes tons of sense. So, I think we're sort of on the right path. And as we roll this out, those work streams will be the first audit, with lots of tremendous support from those who have been committed to join us. I've also mentioned that it can be important for us to weave all of that together, and so that is, sort of a critical step here. But, you know, two things I just want to mention that came up over and over again. Health equity, we want to make sure that that is front and center in this discussion. And again, it's also system resilience. So those two dimensions, I think will be part of our work. Let me conclude because I know we're out of time. But just reaffirming at the time to move is now, to express my gratitude to all the people and the organizations represented here, for putting their shoulder into this work. I think we all recognize how difficult it will be done, the metaphor of the mountain is correct. It will be tough, but I think we will be on the right side of history. Finally, I'm honored to be part of this collaboration. And enthusiastic about working side by side with Victor, Rachel, Andrew as co-chairs, but certainly with all of you. And with that, I'll turn it to Dr. Victor closing comments.

VICTOR DZAU:
Now, thank you, George. Your remarks are spot on. Thank you, Andrew, for masterful moderation on moderating the meeting, and the panelists for great discussion. I will be very brief. At the collaborative, that's the whole idea, is to bring us together. We start with a coalition of the willing, and then we get more and more people joining us. But you know what? Already we have major key players from every sector. You heard them all coming to you and say, we must do this. And I just love some of what Don Berwick said. But, you know, Don will remind us that back over 20 years ago, when we first talked about patient quality and safety, how it was foreign. And how it becomes really who we are and what we are. And I think what we are doing here will be the same. We starting this now coming together. But given the intrinsic motivation, given the mission, given all the passion, I

am confident that we're up to the task, and we'll make a difference, that's what we're here for. Now the collaborative will have groups of people trying to figure out, how do we play together? What do we need to do? But that's not our idea. But by coming together, we are much stronger as a whole than individual parties. So, thank you very much for attending this meeting. And I just want to say, you know what? We're ready. We're ready to go forward with your help. Let's just go for it. Thank you very much indeed.