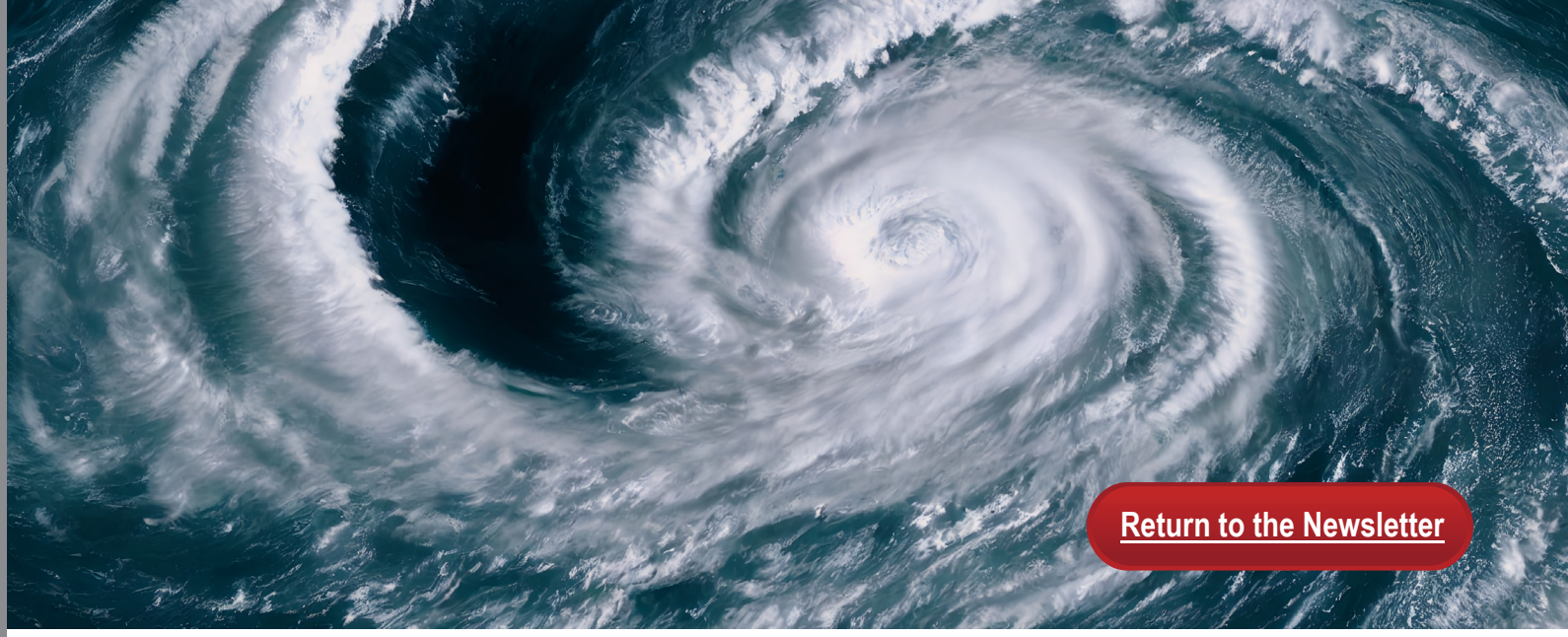

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Climate Resilience and Mitigation: The Federal Perspective

The Office of Climate Change and Health Equity (OCCHE) was established on August 31, 2021, under the direction of the U.S. Department of Health and Human Services Assistant Secretary for Health. ASPR TRACIE met with Dr. John Balbus (Director of OCCHE and Deputy Assistant Secretary for Climate Change and Health Equity) and Dr. Aparna Bole (Pediatrician, Senior Consultant with OCCHE, and Special Expert, Office of the Director, Agency for Healthcare Research and Quality) to learn more about OCCHE's work to help bolster health equity and health care facility resilience.

Dr. John Hick, ASPR TRACIE Senior Editor (JH)

Please share why and how OCCHE was formed and give us a brief overview of your mission.

John Balbus (JB)

One of the mandates in Executive Order 14008 (which focuses on climate change as well as environmental justice) was to "establish an Office of Climate Change and Health Equity to address the impact of climate change on the health of the American people" (The White House, 2021). While our mission includes protecting the health of all Americans, our focus is on those who experience a higher share of exposures and impacts. In service of that mission, we have also taken on the goals of reducing healthcare emissions and improving sustainability and resilience in the face of more severe weather-related disruptions.

We do that as a very small office with limited resources by working extensively with every other agency and division of HHS. In addition to working with them one-on-one, together, we produced the Climate Change and Health Equity Strategy Supplement which was released in December 2023.

JH

What specific areas does OCHHE focus on?

JB

We look at new or exacerbating stressors—whether they are acute (e.g., severe storms, heat waves) or chronic (e.g., drought, loss of water supply)—that pertain to people's lives and to healthcare facilities and infrastructure.

> As a focal point, our office plays a motivational, aspirational, and catalytic role while serving as a technical advisor on climate change and health equity to the rest of HHS.
>
> --Dr. John Balbus

JH

Let's talk about infrastructure resilience first-if I'm in the process of remodeling or building a new healthcare facility, what should I be thinking about?

JB

Healthcare facility builders and emergency planners need to be thinking about the increased intensity of extreme weather events. The terms "100-year and 500-year flood" are no longer accurate or relevant as many places that have not normally experienced severe flooding have begun to do so. Extreme heat poses a similar threat. We are also seeing more severe hurricanes in some parts of the country, more severe straight-line winds, and more severe wildfires. Along with heat and wildfires, especially in the western area of the U.S., we are seeing more frequent brownouts, grid failures, and shutoffs.

Climate change is a very long and drawn-out process; we feel it through acute events, but we need to anticipate what scientists tell us is going to happen over the next 20-50 years. If you are building a new facility and you are in a coastal or estuarial area, plan for sea level rise. If you are in an area that may be increasingly stressed due to lack of snowpack, determine from where you will source your water. Temperature increases may eventually make locations more difficult to inhabit and unusable in the future. If you are updating a facility, you might need to better manage flood waters, remove critical electrical equipment from lower floors, and ensure ingress and egress isn't compromised by flooding (e.g., by elevating the emergency room entrance) to mitigate risk.

Aparna Bole (AB)

Being prepared for risks we faced based on patterns over the past 50 years doesn't mean we'll be prepared for the next 50 years. Prospective risk assessment means understanding that in the setting of climate change, the frequency, duration, and location of some of these extreme weather events is changing. This is really important for an emergency manager to incorporate into risk assessment, modeling, and strategic planning.

The good news is, interventions that increase our resilience to one climate-related hazard can increase our resilience to others. Diversifying power sources, implementing renewable energy and on-site battery storage, and creating a more efficient and protective building envelope all improve resilience to many hazards. Other dimensions of resilience planning, such as collaborating with community organizations to identify and address the needs of at-risk populations, can complement and augment our traditional healthcare emergency preparedness practices in ways that that go beyond physical infrastructure.

JH

Can you elaborate on the relationship between infrastructure and energy efficiency from an economic and resiliency perspective?

AB

Energy efficiency is a win-win strategy from the standpoint of increasing operating efficiency, reducing operating costs, decreasing contributions of healthcare facilities to climate change, and increasing our resilience to climate related events. First, we know that in many commercial buildings (including healthcare facilities), a significant portion of energy is wasted. While there are some efficiency measures that are uniquely suited to healthcare, there are also some basic measures that help save wasted energy in all commercial buildings.

Hospitals operate 24/7, so reducing energy waste and increasing efficiency can pay off quickly. As healthcare emerges from the COVID-19 pandemic, and healthcare organizations are struggling with shrinking operating margins, reducing energy waste is a pure

> Energy efficiency is a win-win strategy from the standpoint of increasing operating efficiency, reducing operating costs, decreasing contributions of healthcare facilities to climate change, and increasing our resilience to climate related events.
>
> --Dr. Aparna Bole

savings and resilience boosting measure. In addition to energy efficiency, emissions reduction measures such as investing in onsite renewable energy and battery storage are also operating cost reduction opportunities, in addition to being resilience strategies in the event of a grid disruption.

It is also worth noting that these types of investments can also increase the comfort of occupants within the building. Lighting retrofits and HVAC upgrades, for example, can ensure temperature control and improved air quality.

JH

What about chronic effects on health as a result of climate change?

JB

Impacts to health can include the change in the distribution and intensity of vector-borne and other infectious diseases, whether that's the northward spread of Lyme disease, or the increased distribution of Valley Fever as drought and heat spread across the western U.S. We must also focus on the mental and behavioral health impacts of these events as well as information about climate change. As we know, we are experiencing a devastating epidemic of depression and anxiety, suicidality, and substance use. Surveys indicate that one of the major behavioral health stressors for young adults is their contemplation of climate change and its effect on the world they may have expected as younger children. Another climate change-related health implication that we still need to come to grips with is that there are and will be more people who must leave the places where they live and become "climate migrants." This relocation is extremely distressing for those experiencing it (who are often subject to violence or discrimination).

> For example, over the past several decades, the Northwestern part of Arkansas has experienced an influx of people from the Marshall Islands, in part because of the rising sea level and inundation there. The public health department has had to deal with a related increase in tuberculosis cases in the state, including multidrug resistant tuberculosis.
>
> --Dr. John Balbus

AB

We also need to consider additional chronic impacts of some of the exposures Dr. Balbus mentioned. Extreme heat can cause pregnancy complications, increasing the risk of preterm birth and low birth weight. Extreme heat can also impair attention, learning, and cognition in children, and is associated with increased risk of interpersonal violence. Poor air quality can also cause pregnancy complications and neurodevelopmental toxicity. Exposure to air pollution during pregnancy and childhood can negatively affect learning, attention, and sleep in children. Climate mitigation interventions in healthcare are aligned with our mission of improving the health of the communities we serve—to both immediately ameliorate short-term challenges and proactively address longer-term issues.

JH

The burdens of climate change tend to fall on more vulnerable populations; we don't often devote a lot of resources to those at highest risk. How is HHS addressing both health equity and climate change at the same time and why is that so important?

JB

HHS plays a significant role in addressing health equity and climate change simultaneously in two specific areas: the social and health safety nets. First, think about the social safety net. Part of that is financial; HHS has programs like the Low Income Home Energy Assistance Program that help families to pay the costs associated with staying cool in the heat and warm on colder days, and to weatherize homes to increase their energy efficiency. Second, the health system safety net includes health centers, essential hospitals (those whose mission is to care for all people, regardless of their financial means and insurance status), and rural hospitals, which protect the most vulnerable populations in the country.

The third area being addressed in health equity and climate change work is investing in homes and neighborhoods that have been historically disinvested due to discriminatory policies and practices. This administration's investment in environmental justice is the third way we are addressing these inequities.

AB

From the standpoint of clinical care delivery, I would like to emphasize that we have opportunities at the bedside to help protect patients at risk from climate-related health harms. As clinicians, we can integrate knowledge about climate and health in our anticipatory guidance and therapeutic plans. For example, in my pediatric practice, I could counsel youth athletes and outdoor workers about strategies for staying safe in the heat. Given shifts in the allergy season, I need to protect my patients with asthma and seasonal allergies from pollen exposure earlier than I did 10 years ago. Connecting families experiencing housing and utility insecurity with community resources can help mitigate their risk during extreme weather events. When we are discharging a patient from a hospital during a heatwave, for example, ensuring safe housing should be part of the discharge plan.

JB

It is important for us to remember that all the social determinants of health are inextricably linked to the climate stressors that are getting worse. We must consider climate change as another social determinant of health and plan for it as such.

JH

What are the key areas of focus for a hospital emergency manager or provider interested in incorporating climate change into facility plans?

AB

Climate resilience can augment and be integrated into a traditional all hazards approach to emergency preparedness in healthcare. At OCCHE, we have identified five elements that are important for planners to consider in developing climate resilience plans:

1. Integrate prospective risk assessment into emergency preparedness.
2. Incorporate health equity and community engagement by: reaching out beyond our walls and partnering with community organizations, integrating information from our social determinants of health screening, and understanding our role in the broader scope of community resilience.
3. Assess and address physical infrastructure vulnerabilities.
4. Engage in interdisciplinary planning, oversight, and evaluation. Break down silos across all phases of emergency management to allow the organization to take a truly inter-disciplinary approach to enhancing resilience.
5. Collaborate with other health care organizations, understanding that disruptions in one part of the healthcare ecosystem (e.g., behavioral health) can stress another (e.g., acute care).

We are currently updating the HHS Climate Resilience for Healthcare toolkit that was originally published about 10 years ago (as the Sustainable and Climate Resilient Healthcare Facilities Toolkit). This can serve as a guide for healthcare emergency managers for climate resilience planning. It includes links to many helpful tools and resources specific to the five resilience planning elements I just described. We anticipate that the updated toolkit will be published later this year.

JB

It is important for hospital emergency planners to be aware of the most recent tools and resources at their disposal that can help them anticipate and address unprecedented stressors on their system, including, but not limited to:

- The HHS emPOWER Program, which is one of the best integrative websites for hazards (created to help "communities protect the health of at-risk Medicare beneficiaries who live independently and rely on electricity-dependent durable medical and assistive equipment and devices, and/or certain essential health care services."
- OCCHE's Climate and Health Outlook, which provides 30-90-day "forecasts for heat, flooding, drought, and wildfire" and related protective tips.
- The National Weather Service's HeatRisk, which—for the first time—gives a seven-day forecast for heat that is based on local epidemiology and climatology.

AB

We aren't trying to add to already long to-do lists; these tools are meant to support and empower the emergency management professional. Foundationally it comes down to interdisciplinary collaboration, not "staying in your lane," and adding a resilience lens to emergency planning.

JH

Healthcare tends to be an extremely competitive field, but this is an area where there really isn't any turf and that creates a lot of opportunity for collaborative effort. Any thoughts on that?

JB

From a federal perspective, we are seeing an increasingly inclusive approach to regional collaboration, particularly between public health and healthcare. I think we are likely to see a hospital protection program capability that addresses climate change stressors on a broader swath of categories of healthcare systems, from nursing homes to tertiary hospitals. What disrupts a home health delivery center can have a big impact on local hospitals and community health centers. Climate change is forcing us to think in a broader way to ensure that all parts of the system continue to operate under these stressors.

JH

Health care in general has a disproportionate impact on waste stream and energy consumption-what can the field do to minimize this impact?

AB

The U.S. healthcare sector is responsible for about 8.5% of the U.S. total greenhouse gas emissions[1]. To put that in context, that is more than the aviation industry. We have an opportunity to mitigate our emissions in health care that aligns with our mission of improving quality of care, our operating efficiency, and protecting the health of our communities.

Many healthcare organizations have made great strides in this space by taking steps like improving energy efficiency, investing in renewable energy, decreasing physical waste, and engaging in more sustainable purchasing practices while considering how these practices can affect the wealth, health, and resilience of our local communities.

On March 9, 2023, HHS announced that the Health Sector Climate Pledge would be accepting new signatories on an ongoing basis. As of now, 139 organizations including 943 hospitals have pledged to:

1. At minimum, reduce organizational emissions by 50% by 2030 (from a baseline no earlier than 2008) and achieve net-zero by 2050, publicly accounting for progress on this goal every year.
2. Designate an executive-level lead for their work on reducing emissions by 2023 or within six months of signing the pledge and conduct an inventory of Scope 3 (supply chain) emissions by the end of 2024.
3. Develop and release a climate resilience plan for continuous operations by the end of 2023 or within six months of signing the pledge, anticipating the needs of groups in their community that experience disproportionate risk of climate-related harm.

In addition to the momentum of this movement, there is great alignment between investing in preventive care and increasing sustainability of the entire healthcare sector.

JB

Energy efficiency and waste reduction have not been at top of list for most health systems over the past decades. Some other sectors have been thinking about it a bit longer, giving healthcare a tremendous opportunity for science-based innovation, particularly from a material usage perspective (e.g., single use plastics and the extensive use of disposable fabrics).

[1] Health Sector Commitments to Emissions Reduction and Resilience

AB

The importance of supply chain resiliency was underscored during the COVID-19 pandemic. There are also some very simple interventions that are common across sectors to reduce waste and increase energy efficiency that are clear win-wins and typically provide a quick return on investment.

JH

How can we incentivize these reductions while aligning business goals?

AB

I'm heartened by the fact that healthcare organizations are increasingly making commitments to climate action—collectively, these organizations have significant purchasing power. When healthcare organizations can align around articulating their demand for lower carbon and more sustainable medical products and services, then the marketplace pays attention.

JB

One thing manufacturing and businesses can be confident in is that there will be increasing demands for them to account for and reduce their greenhouse gases. That holds for the healthcare sector, as well. We are seeing that in the U.S., as in recent rule from the Security and Exchange Commission. For multinational industrial sectors such as pharmaceuticals and medical devices, we are seeing more requirements coming from other countries around the world. Our Office is working with other countries to harmonize requirements and clarify differences for the industry as much as possible. As states and cities in the U.S. start to institute greenhouse gas accounting and reduction measures, this will drive the health sector to meet the same measures.

JH

Climate change planning seems to fit well with the emergency management cycle of mitigation, preparedness, response, and recovery. In the recovery phase, how do you rebuild in a way that reflects the needs of the future community?

JB

The traditional wheel paradigm of emergency preparedness is going to become less relevant over time. It implies there is an orderly sequence where a community moves from one phase to another and does not consider concurrent disasters. We don't have time to complete individual cycles anymore. Mitigation and resilience building must be done all the time because we're going to be in response mode more frequently and we will also be recovering for a long time. Recovery won't end before the next disaster hits. We really need to be thinking about how to mitigate these risks in anticipation and not just at the end of the cycle. We can't just wait for disasters or disease outbreaks that might force people to relocate; we have to think prospectively about what can be readily anticipated.