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IN DEPTH ARTICLE: COMMENTARY

Addressing the Health Effects of Climate Change: an Approach Based on Evidence and Ethics

Darrell G. Kirch[1] · Kate Petelle[1]

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It is ironic that climate change, an issue cited by experts as our greatest global health threat, [1] has received relatively little attention in the health professions. In their editorial in this issue of the journal, Coverdale and colleagues lay out the evidence that climate change will have a substantial effect on human health, including significant consequences for mental health [2]. On the basis of this body of scientific evidence, the authors have called the community of psychiatrists to action and underlined the obligation of our profession to address the threat of climate change to mental health.

Supporting Evidence-Based Decision-Making in Public Policy

The evidence is mounting that human action contributes to climate change and that climate change, in turn, has significant negative implications for human health. Despite the growing body of evidence, partisan debate has led to inaction on the public policy front. Moreover, recent rollbacks of environmental regulations in the USA as well as US withdrawal from the Paris Climate Accord suggest that scientific evidence is not driving current public policy as much as it should be.

As scientists, we support evidence-based decision-making, and we have seen the damage that ignoring the evidence can cause. It is the same worldview that in 1996 led the Centers for Disease Control and Prevention to stop supporting research on the public health effects of firearms and that for years has driven the anti-vaccine movement. Similarly, last year's debates over repealing and replacing the Affordable Care Act seemed fueled more by partisan rhetoric than by evidence of the significant individual and societal health benefits that accrue by expanded health insurance coverage.

✉ Kate Petelle
kpetelle@aamc.org

[1] Association of American Medical Colleges, Washington, DC, USA

Joining Evidence with Our Ethical Imperatives

When there is compelling scientific consensus, physicians and scientists must support evidence-based decision-making. Following the divisive political campaigns of 2016 and the resulting uncertainty surrounding certain key health policy issues, the Association of American Medical Colleges (AAMC) defined a framework for a values-based approach to health policy decisions. Our approach is grounded in scientific evidence and guided by core ethical principles [3]. The four pillars of medical ethics—beneficence, non-maleficence, autonomy, and social justice—provide a clear and tested measure by which to assess policies that affect patient and population health. This approach has guided AAMC policy work in areas such as the ongoing debate over the Affordable Care Act, the impending physician workforce shortage, and other key issues facing academic medicine today.

Coverdale and colleagues' editorial presents scientific evidence of climate change in compelling detail—from the catastrophic effects of rising sea levels to the increasing intensity and frequency of severe weather events—with additional human deaths and serious consequences for the natural world predicted. The burden of climate change is expected to fall disproportionately on vulnerable populations, including the poor, the homeless, and those suffering from mental illness. In this way, climate change promises to widen health disparities for patients already suffering from inequities such as poor health, poverty, homelessness, mental illness, and food insecurity. The editorial's authors also point to the potential for extreme weather events to produce post-traumatic stress disorders; to cause significant mental health consequences related to anxiety, fear, and distress; and to lead to increased substance use. Climate change also has the potential to exacerbate conflict and political instability, leading to increased displacement and migration [2].

The mounting evidence of the health effects of climate change; our ethical commitments to beneficence, non-maleficence, and social justice; and the missions of academic

medicine all suggest that the academic medicine community has a role to play in addressing this issue. The potential health consequences of failing to do so are too great.

Addressing the Challenge of Climate Change

The organizing framework proposed within Coverdale and colleagues' editorial—clinical, administrative, research, and education, or CARE—provides a useful structure within which to implement proven interventions and test new ones. Importantly, the authors not only provide this framework, but also relate evidence that mitigation has proven effective.

Guided by our commitment to "do no harm," it is incumbent on all of us in health care to implement sustainable approaches to reduce energy consumption within clinical practices and departments. Health care facilities are the third-most energy-intensive facility type in the USA, with the U.S. Department of Energy estimating that collectively, they spend nearly $10 billion on energy each year [4]. By taking administrative steps to implement sustainable approaches, such as finding renewable sources of energy, implementing more efficient heating and air conditioning systems, reducing waste, and leveraging the use of telemedicine to reduce emissions related to travel, physician practices and hospitals can help minimize their carbon footprint and promote wellness in their communities. Many hospitals and practices have already made great progress in this area. In *The Annals of Internal Medicine*, Crowley and colleagues also point to clinical interventions that can have positive individual health effects beyond the specific goal of reducing carbon emissions—for example, exchanging the use of a car for that of a bike or for walking would not only reduce carbon emissions, but provide the positive individual physical and mental health effects of exercise [5].

The best way to ensure that our approach remains grounded in science is to support research that will continue to build the evidence base about the health effects of climate change. Coverdale and colleagues have outlined research opportunities for the psychiatric profession, pointing out that there is still much to learn about both the mental health consequences of climate change and the effectiveness of public health interventions [2]. Going beyond psychiatric research, better understanding the health effects of climate change will likely need new interdisciplinary collaborations, encompassing climate science, sociology, education, and public health, among others. The health threats embedded in climate change, and their potential to affect the lives of millions of Americans, are one more reason that the nation should continue to support increased investments in these fields.

As indications suggest that climate change will have a significant effect on twenty-first-century patients, we need to be training the next generation of physicians in both the health implications of climate change and proven interventions. Increasingly, medical students are shaping their own learning by seeking out material, online and from one another, to tailor learning to their own interests and needs. Medical education needs to keep pace, both by offering the most relevant content on the changing climate and by leveraging technology to adapt to new modes of learning. In the 2016–2017 academic year, 45 medical schools offered course content related to the health effects of climate change [6]. To best prepare medical students for the future of practice in an era of climate change, this effort could even extend into premedical course work. Encouraging prospective applicants to take college-level courses in climate science and the impact of climate on health could help students understand the importance of this issue well before they enter a health professions school.

The community service mission of academic medical centers suggests a final domain in which we can take action to mitigate the potential health consequences of climate change. In *BMC Public Health*, Torres and Casey link climate-related migration with disrupted community ties and negative mental health effects [7]. They suggest the importance of investing in community social ties to enhance resilience and improve mental health outcomes for communities affected by climate change. Academic medical centers, which have a mission to build and support the health and well-being of their communities, are already helping to bolster social cohesion and mitigate negative mental health effects at a community level and are well positioned to continue this important work.

The evidence suggests that by mitigating climate change, we can save lives, narrow health disparities, and improve our health security. The science of climate change is compelling, and its ramifications for human health could be significant. In particular, evidence of links between climate change, community disruption, and negative mental health outcomes suggests an important role both for the psychiatric profession and for academic medicine as a whole in bolstering community resilience and cohesion. It is incumbent on all of us who work in patient care, biomedical research, and medical education to both assert the authority of science in our national debates and align our own behavior with our professional ethics when population health comes under threat. For the benefit of our patients and to improve the health of all, it is incumbent on our community to translate science into action.

Compliance with Ethical Standards

Disclosures On behalf of all authors, the corresponding author states that there is no conflict of interest.

References

1. Costello A, Abbas M, Allen A, Ball S, Bell S, Bellamy R, et al. Managing the health effects of climate change: Lancet and University College London Institute for Global Health Commission. Lancet. 2009;373:1693–733.
2. Coverdale J, Balon R, Beresin EV, Brenner AM, Guerrero APS, Louie AK, et al. Climate change: a call to action for the psychiatric profession. Acad Psychiatry. 2018; https://doi.org/10.1007/s40596-018-0885-7.
3. Kirch D, Ast C. What should guide health policy? A perspective beyond politics. Acad Med. 2017;92:1222–4.
4. U.S. Department of Energy. Better Buildings. Healthcare. https://betterbuildingssolutioncenter.energy.gov/alliance/sector/healthcare. Accessed February 28, 2018.
5. Crowley RA, Health and Public Policy Committee of the American College of Physicians. Climate change and health: a position paper of the American College of Physicians. Ann Intern Med. 2016;164:608–10.
6. Association of American Medical Colleges. AAMC curriculum inventory 2016−2017. Accessed Feb. 27, 2018.
7. Torres JM, Casey JA. The centrality of social ties to climate migration and mental health. BMC Public Health. 2017;17:600.