

# The Intersection of Climate Change and Health: An Explication of the Future of Nursing 2020-2030 and Charting a Path to Achieve Health Equity

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## Abstract

The US National Academy of Medicine released its consensus study for the next decade entitled *The Future of Nursing 2020-2030: Charting a Path to Achieve Health*. This paper examines the report, its implications for nursing, globally; its focus on systemic, structural, and institutional racism; and the intersection with climate change and deleterious health consequences. The National Academies of Sciences, Engineering, and Medicine (NAEM) has led in addressing the critical role of the nursing profession in achieving optimal population health outcomes in the US. Yet, there is relevance for nursing in other global areas. The most recent US report focuses on social determinants of health and explicitly addresses climate change as a looming public health threat. An analysis of the key foci of nursing's role in climate change amidst the critical role of health equity globally is explicated.

**Keywords:** climate change, global nursing, social determinants of health, health equity, systemic racism, Future of Nursing 2020-2030

### Introduction

The *Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity* was released by the US National Academies of Sciences, Engineering, and Medicine (NASEM) in May 2021 (NASEM, 2021). This report (hereafter, *Future of Nursing*) was developed as an evidence-based consensus report by a committee of expert authors. Consensus reports synthesize the experience and knowledge of a committee of experts in the field under study and provide recommendations based on multiple sources of evidence. The report development includes an independent peer-review process by other experts in the health professions. As noted in the document, the *Future of Nursing* report and its release were impacted by the emergence of the SARS-CoV-2 (COVID-19) global pandemic. Initially, the report was scheduled for release in 2020, the bicentennial year of Florence Nightingale's birth. However, with the landscape of COVID-19 and the impact globally for the nursing workforce in caring for millions of those affected by COVID-19, the report emerged in 2021. Further described in the report is the fact that COVID-19 laid bare the issues of health inequalities of the poor, vulnerable, marginalized, and Black, Indigenous, and peoples of Colour (BIPOC); thus, the urgency of addressing these health inequities over the decade is critical. The *Future of Nursing* has key relevance in the US, but its findings, conclusions, and recommendations have global relevance for the nursing profession. In this paper we examine the report, its implications for nursing, globally; its focus on systemic, structural, and institutional racism; and the intersection with climate change and deleterious health consequences.

It is important to note that the *Future of Nursing* report offers highlights that address climate change, racism, and health equity. The highlights are illustrated in eight points in the overarching report: "acting now to improve the health and well-being of the nation; lifting barriers to expand the contributions of nursing [such as the scope of practice for advanced practice registered nurses]; designing better

payment models; strengthening nursing education; valuing community and public health nursing; fostering nurses' roles as leaders and advocates; preparing nurses to respond to disasters; and supporting the health and well-being of nurses" (NASEM, 2021, para 4-11).

### The Influence of Climate Change on Human Health

The *Lancet Countdown Reports* have been released since 2015 and address the complex health consequences for human health that climate change is causing, with the most recent report published in December 2020 (Watts et al., 2021). Notably, the 2020 report focused on the converging pandemics of climate change and COVID-19. These converging crises are occurring in part due to encroachment of humans in animal habitats and resulting in the risk of virus transmission such as the SARS-CoV-2 virus.

There are complex health consequences that are occurring globally because of the climate impacts of greenhouse gas emissions (GGEs). Air quality issues due to increasing carbon dioxide emissions, rising temperatures with morbidity and mortality related to heat stress and heat stroke, extreme weather events, and sea-level rise are implicated in our climate-changing world. The resulting health challenges include asthma, allergens, and cardiovascular disease due to air pollution; increases in vector-borne illnesses; water and food quality impacts; migration and conflict due to loss of arable land; and mental health consequences (Centers for Disease Control and Prevention [CDC], 2021). Among the most challenging health consequences are worsening cardiovascular and pulmonary disease due to air pollution and increasing aeroallergens. In the *Lancet 2019 Countdown Report on Health and Climate Change*, the authors noted their concerns regarding the health of children born today and the influence of deleterious health consequences as they are affected by climate change (Watts et al., 2019).

### **The Intersection of Climate Change and Structural, Systemic, and Institutional Racism**

The issues of racism and the link with climate change and associated health consequences should be made explicit, and the concept of climate justice is key to this dialogue. Climate justice refers to the issue that those who least contribute to GGEs are disproportionately affected by the adverse sequelae of climate change (Lemery et al., 2014). For example, although race is a social construct, there is a body of literature that addresses the negative impacts on health in pregnant women—particularly Black pregnant women—who are exposed to increasing heat stress and poor air quality due to climate change (Bekkar et al., 2020; Hollenbach et al., 2021). The adverse outcomes include preterm birth, low birth weight, and stillbirth (Bekkar et al., 2020), which have also been associated with women who reside in historically redlined districts, those areas that have had historic racially discriminatory practices. These discriminatory practices have led to poor housing quality and lower socioeconomic neighborhoods (Hollenbach et al., 2021). In the US, the *Black Momnibus Legislation* of 2021 was recently introduced in Congress to address the negative outcomes of climate change for pregnant and postpartum women and neonates—particularly for Black women and infants.

The focus of the *Future of Nursing* report explicitly addresses the devastating consequences of health inequity and the role of nursing in addressing and mitigating these health inequities. Major areas of expertise include a broad emphasis on the nursing workforce and the role of nurses in improving health equity, including measures to ensure fiscally responsible care delivery. Additional expert knowledge addresses educating nurses for the future, the role of nursing in disaster preparedness and public health emergency response, and the health and well-being of nurses. Notably, climate change as a looming public health challenge is explicitly addressed in this report, and the intersection with health inequities and

social determinants of health is examined. Finally, the recommendations and research priorities are addressed for the decade through the year 2030.

### **Overview of the Future of Nursing Report's Focus on Social Determinants of Health**

The *Future of Nursing* report's focus on social determinants of health indicates that the US has significantly poorer health outcomes than other industrialized countries despite having one of the best health care systems. Further, US national agencies, such as the CDC Centers for Disease Control and Prevention, as well as global agencies, such as the World Health Organization (WHO) and the United Nations (UN), are also increasingly addressing the significance of social determinants of health. Of note, the report cautions against using race as an indicator of disease since race is a social construct and does not reflect the burden and complexities of race or the associated biology, history, and social experiences. Perhaps most critical to note is that inequities in education, housing and neighborhood, safety, income and wealth, employment, and overall social environment bring about consequences far beyond health; these factors also affect the nation's economy, national security, business, generational impact, and climate and environment (NASEM, 2021). This is, of course, the case in countries and regions globally, as well—particularly in areas of conflict, violence, and war.

In 2003, the WHO suggested that key elements be considered as social determinants of health (Wilkinson & Marmot, 2003), and by 2008 the WHO's Commission on Social Determinants of Health published a report, *Closing the Gap in a Generation* that aimed to illustrate the impact of social justice on health and health equity. Now nurses in the U.S. and globally are charged with engaging at all healthcare system levels to achieve health equity for all (Marmot et al., 2008; NASEM, 2021; WHO Commission on Social Determinants of Health, 2008).

## **The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity and the Intersection with Systemic, Structural, and Institutional Racism**

### **Racism as a Systemic, Structural, and Institutional Challenge for the Nursing Profession**

The *Future of Nursing* report is focused on social determinants of health and explicitly calls out racism as a systemic, structural, and institutional challenge that the nursing profession must address. A recent explication of nursing organizational statements regarding the roles of nursing organizations in calling out racism in all forms was published by Knopf et al. (2021). In their analysis, Knopf et al. (2021) examined the statements of the American Academy of Nursing, the American Association of Colleges of Nursing, the American Nurses Association, and the position statements of 18 schools of nursing on racism. Thematic analysis revealed six themes, and it was determined through content analysis that the nursing schools' position statements were closely aligned with the organizational themes (Knopf et al., 2021). The American Academy of Nursing's statement was titled *Racism Affects Health and Wellness and It Must Be Addressed* (American Academy of Nursing, 2020). The American Association of Colleges of Nursing position statement was released as a *Statement on Academic Nursing's Call for Liberty and Justice for All* (American Association of Colleges of Nursing, 2020). The American Nurses Association promulgated a statement on racial justice entitled *A Resolution on Racial Justice for Communities of Color* (American Nurses Association, 2020).

In Knopf et al.'s (2021) paper, the themes that emerged suggested that the nursing profession must acknowledge the effects of racism on health, address racism from a professional perspective, promulgate position statements to end systemic racism, work collaboratively against racism and discrimination, and offer respect for all persons

in the professional nursing role. In addition, Knopf et al.'s findings suggested that there should be widespread leadership in addressing police brutality against BIPOC populations.

### **Climate Change as a Racial Justice Issue**

From a global perspective, there is a widespread focus on climate change as a racial justice issue. For example, the United Nations Environment Programme has an explicit focus on this area, and recently McCarthy (2021, April 20) examined, *Why Is Climate Change a Racial Justice Issue?* McCarthy found three emerging themes. The first theme was that the direct and indirect impact of climate change interconnects with issues of racial inequality in communities. Second, climate change initiatives must be specific, intentional, and targeted to mitigate the health sequelae of climate change in communities which are already burdened by societal inequalities rooted in racism. The third theme identified by McCarthy as a guiding statement was that identification of community-specific impacts of climate must garner the collaboration of those living in that community to ensure optimal outcomes. Anthony Rogers-Wright has stated that "climate organizations should study the history of the colonial era and slavery in particular to understand how the global economic system — and its 'dehumanization' of certain populations — has brought the world to the brink of ecological ruin" (Anthony Rogers-Wright, as cited in McCarthy, 2021, para 14). There must be much more discourse on structural, systemic, institutional racism and the issues of our post-colonial era, and the impact of slavery and disempowered communities in the evolution of racial injustice in a climate-changing world.

### **Climate Change and the Future of Nursing 2020-2030: Charting a Future for Health Equity in a Climate-Changing World**

The *Future of Nursing* report explicitly addresses the deleterious health consequences in our climate-changing world. In addition, *The Lancet 2020 Countdown Report on Health and Climate Change* released in December 2020 describes the public health challenges of converging crises—climate change and COVID-

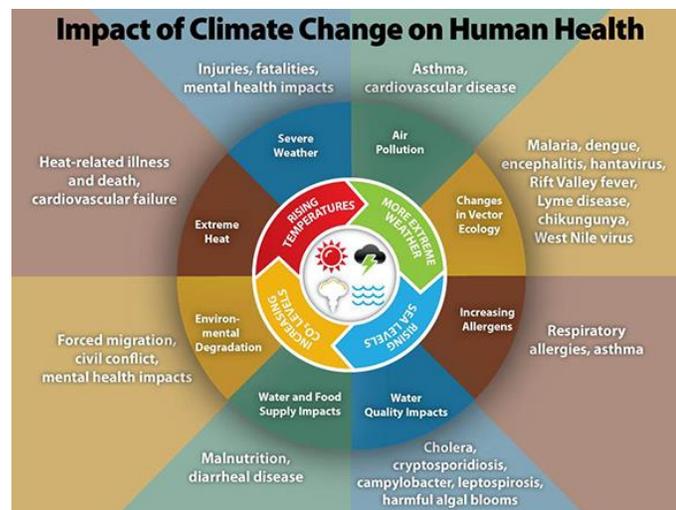
19 (Watts et al., 2021). *The Lancet Countdown Reports on Health and Climate Change* have been published since 2015 with annual updates of the public health emergency that is on the horizon. Further, the *Sixth Assessment Report* of the Intergovernmental Panel on Climate Change noted climate change as a *code red for humanity* (United Nations, 2021, August 9).

The CDC and the United Nations Environment Programme have extensive resources related to climate change. The CDC, in particular, has addressed climate and health impacts. These health impacts are related to GGEs that result in increasing carbon dioxide levels, increasing weather extremes—with

extreme heat globally, more extreme weather, and rising sea levels. As illustrated in Figure 1, each of these climate effects results in significant negative health impacts with respiratory and cardiovascular illnesses including asthma and aeroallergens; vector-borne illnesses; exposure to extreme weather events and disasters including wildfires; mental health sequelae; conflict, violence, and migration; malnutrition, diarrheal disease, and water quality impacts; and extreme heat-related illnesses.

**Figure 1**

Impact of Climate Change on Human Health



Note. Reproduced from “Climate and Health,” by Center for Disease Control and Prevention, 2021, <https://www.cdc.gov/climateandhealth/default.htm>

From the *Future of Nursing* report, a key recommendation focused on the critical importance of the nursing profession in addressing public health emergencies. As such, the nursing workforce must be empowered to intervene in times of crisis such as during the COVID-19 pandemic and other environmental emergencies, including those related to climate change (NASEM, 2021). Thus, the key consensus leaders explicitly link the COVID-19 pandemic, public health emergencies including

natural disasters, and the overarching linkage of climate change as the source of these disasters. However, other climate change-related health disasters are not explicitly discussed, such as the urgent air quality issues related to asthma, aeroallergens, and respiratory problems from GGEs, nor is there explicit discussion of heat stress globally and loss of arable land for farmers with increasing global warming. Thus, climate migration is a global concern due to the emerging consequences of climate change—

rising temperatures, increasing carbon dioxide levels, more extreme weather, and rising sea levels. Most recently, wildfire exposure related to global warming is a source of grave concern for respiratory health consequences, mental health, climate migration, and an array of other deleterious health outcomes.

### **Climate Change as the Most Urgent Public Health Challenge of the Decade and the Future**

The *Future of Nursing 2020-2030* explicitly addresses two key challenges—climate change and social determinants of health, and the critical need to address health equity in the US. Health equity is a global issue, yet it is among the most challenging consequences of a society that struggles with systemic, structural, and institutional racism in the US. To the credit of US society, there is a significant impetus to address these issues of racism and their intersection with health. These issues of racism are also global health challenges which countries and continents must address in our climate-changing world. It is important to note that it is key that the *Future of Nursing* called out climate change as an issue that nursing must address regarding the significant health challenges associated with global warming. The report included a comprehensive approach to disaster planning and public health responsiveness; however, there is also a critical need to address the root causes of disasters—GGEs, resulting in significant global warming

with myriad deleterious health consequences from climate change. In this issue of the *Canadian Journal of Critical Nursing Discourse*, nursing's role in addressing health consequences of climate change is at the forefront. Key aspects of nursing leadership in climate change mitigation, adaptation, and resilience must also be at the forefront of nursing in the next decade. Having climate change emerge as a critical social determinant of health is important for the nursing profession as we engage with those communities disproportionately affected and assure the profession's capacity to respond to the environmental and climate challenges impacting health globally. Humanity requires our concerted efforts to ensure that our profession fully engages in local, regional, national, and international arenas to ensure the health of the world's people in our climate-changing world.

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The authors report no conflicts of interest in the development of this manuscript.

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References

- American Academy of Nursing. (2020, June 1). *American Academy of Nursing Statement: Racism Affects Health and Wellness and It Must Be Addressed*. Retrieved from <https://www.aannet.org/news/press-releases/position-statement-on-racism>
- American Association of Colleges of Nursing. (2020, June 2). *AACN Statement on Academic Nursing's Call for Liberty and Justice for All*. Retrieved from <https://www.aacnnursing.org/News-Information/News/View/ArticleId/24635/statement-liberty-justice>
- American Nurses Association. (2020, June 20). *ANA's Membership Assembly Adopts Resolution on Racial Justice for Communities of Color*. Retrieved from <https://www.nursingworld.org/news/news-releases/2020/ana-calls-for-racial-justice-for-communities-of-color/>
- Bekkar, B., Pacheco, S., Basu, R., & DeNicola, N. (2020). Association of air pollution and heat exposure with preterm birth, low birth weight, and stillbirth in the US: A systematic review. *JAMA Network Open*, 3(6), e208243. doi: 10.1001/jamanetworkopen.2020.8243
- Centers for Disease Control and Prevention. (2021, November 4). *CDC's Climate and Health Program*. <https://www.cdc.gov/climateandhealth/default.htm>
- Hollenbach, S. J., Thomburg, L. L., Glantz, C., & Hill, E. (2021). Associations between historically redlined districts and racial disparities in current obstetric outcomes. *JAMA Network Open*, 4(9), e2126707. doi:10.1001/jamanetworkopen.2021.26707
- Knopf, A., Budhwani, H., Logie, C. H., Oruche, U., Wyatt, E., & Draucker, C. B. (2021). A review of nursing position statements on racism following the murder of George Floyd and other Black Americans. *Journal of the Association of Nurses in AIDS Care*, 32(4), 453-456. doi: 10.1097/JNC.0000000000000270
- Lemery, J., Williams, C., & Farmer, P. (2014). The great procrastination. *Health and Human Rights*, 16(1), 1-3.
- McCarthy, J. (2021, April 20). Why is climate change a racial justice issue? *Global Citizen*. Retrieved from <https://www.globalcitizen.org/en/content/why-is-climate-change-a-racial-justice-issue/>
- National Academies of Sciences, Engineering, and Medicine [NASEM]. (2021). *The future of nursing 2020-2030: Charting a path to achieve health equity*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25982>
- United Nations (2021, August 9). *Code red for humanity*. UN News Global perspective Human stories. <https://news.un.org/en/story/2021/08/1097362>
- Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson, S., Beagley, J., Belesova, K., Boykoff, M., Byass, P., Cai, W., Campbell-Lendrum, D., Capstick, S., Chambers, J., Coleman, S., Dalin, C., Daly, M., Dasandi, N., Dasgupta, S., Davies, M., Di Napoli, C. ... Costello, A. (2021). The 2020 report of *The Lancet* countdown on health and climate change: Responding to converging crises. *The Lancet*, 397(10269), 129-170. doi: [https://doi.org/10.1016/S0140-6736\(20\)32290-X](https://doi.org/10.1016/S0140-6736(20)32290-X)
- Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson, S., Belesova, K., Boykoff, M., Byass, P., Cai, W., Campbell-Lendrum, D., Capstick, S., Chambers, J., Dalin, C., Daly, M., Dasandi, N., Davies, M., Drummond, P., Dubrow, R., Ebi, K. L., Eckelman, M., ... Montgomery, H.. (2019). The 2019 report of *The Lancet* countdown on health and climate change: Ensuring that the health of a child born today is not defined by a changing climate. *The Lancet*,

394(10211), 1836-1878. doi:  
10.1016/S0140-6736(19)32596-6

Wilkinson, R. & Marmot, M. (Eds.) (2003). *The social determinants of health: The solid facts* [PDF] (2nd ed.). WHO.  
[https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0005/98438/e81384.pdf](https://www.euro.who.int/__data/assets/pdf_file/0005/98438/e81384.pdf)

World Health Organization [WHO] Commission on Social Determinants of Health. (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health*. WHO.  
Retrieved from  
[https://apps.who.int/iris/bitstream/handle/10665/43943/9789241563703\\_eng.pdf;jsessionid=D08253A1C548A81E4578311114D0C06B?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/43943/9789241563703_eng.pdf;jsessionid=D08253A1C548A81E4578311114D0C06B?sequence=1)