Climate change is happening (Crimmins et al., 2016; Intergovernmental Panel on Climate Change, 2014; U.S. Global Change Research Program, 2017). Last year, thousands of lives were lost to climate change-related events, such as hurricanes, floods, fires, storms, and droughts, the severity of which are considered to be made worse by climate change. Costs of these events in 2017 were estimated at more than $300 billion, the largest annual total to date (National Oceanic Atmospheric Administration Office for Coastal Management, 2018).

Climate change has consequences: devastating weather events, reduced air quality, unsafe drinking water, increased food insecurity, insufficient shelter, heat-related morbidity and mortality (heart attacks, strokes, and respiratory arrests), increased violence, and decreased worker productivity (Centers for Disease Control and Prevention [CDC], 2014; Crimmins et al., 2016; George, Bruzzese, & Matura, 2017; Mac & McCauley, 2017; Nicholas & Breakey, 2017; Veenema et al., 2017).

The financial and human costs of climate change-related events further encompass many downstream impacts that can undermine health. These impacts include post-traumatic stress disorder, mental illness, magnification of acute food insecurity, malnutrition, undernutrition, disruption of agricultural production, eruption of communicable diseases, and insufficient housing (Crimmins, 2016).

As Lemery, Williams, and Farmer (2014) suggest: “The people who will suffer most are those who [are] most vulnerable to begin with, living in regions of the world with perilous human security, pervasive poverty, little fulfillment of human rights, geographic disadvantage, and contributing the least to greenhouse gas emissions” (p. 2). Thus, it is the least prepared and least likely to contribute to the deleterious climate effects on our environment who will be most affected by climate health consequences: our children, elderly, homeless, minorities, the impoverished, indigenous, unemployed, immunocompromised, and those living with chronic diseases and disabilities (CDC, 2015; Leyva, Beaman, & Davidson, 2017; Nicholas & Breakey, 2017). Insufficient resources, underdeveloped infrastructure, and increased vulnerability place these groups at odds to respond to threats posed by climate change. It is the same story but with a different name: climate injustice.

Climate Justice

What is climate justice? In the context of climate change, climate justice has been framed through a lens of rights, responsibilities, and procedures (Bulkeley, Edwards, & Fuller, 2014; Nicholas & Breakey, 2017). More specifically, the right to be protected from climate change, which includes removing threats to civil, political, and security rights, the responsibility for our nation to...
respond to harm caused by climate change, and the rollout of relevant procedures to justly attend to climate change.

As the largest population of health professionals and the nation’s most trusted voice, nursing must lead on addressing climate change and health. This includes both mitigating climate change and adapting to newly exposed vulnerabilities arising from climate change throughout relevant social and political arenas and infusing in nursing curricula from baccalaureate to doctoral education and clinical training (Anderko, Schenk, & Huffling, 2017; Leffers, Levy, Nicholas, & Sweeney, 2017; Lilienfeld, Nicholas, Breakey, & Corless, 2018). Through the lens of climate justice as described above, it is clear that rights are being violated and responsibility has been identified. Now what are the procedural next steps for the nursing profession from a policy perspective?

**REAP Framework**

Nurses invested in climate action must focus intensively on the REAP framework as identified in the seminal report: *Nursing, Health and Environment* (Mood, Snyder, & Pope, 1995). The elements of this model are: Research, Education, Advocacy, and Practice (REAP) (Anderko et al., 2017).

But are we sufficiently equipped? It is clear that we are not, yet we are engaged, becoming educated, and galvanizing our clinical practice. The literature is reflecting our profession’s growing awareness and opportunities (Lilienfeld et al., 2018). The next era of health requires the future generation of nurse leaders to reframe health (Adlong & Dietsch, 2015). This reframing would shift health from a human-focused phenomenon to a broader lens that includes a human-environment, human-planet, human-climate mandate (Rosa, 2017). What is health on a planet that can no longer support us? The current state of climate change is negatively impacting human health in measurable ways. Attention to climate change isn’t an option, it is a necessity during a crisis of dwindling planetary health (Kurth, 2017).

So where are the gaps in a REAP approach?

**Research**

We are confronted with challenges related to climate change data availability, accessibility, and quality, which will need to be addressed if data are to be sufficiently consistent and comparable to allow meaningful measurement of progress and impact (Kelman & Gaillard, 2010). Further, as nurses, we need to understand how ordinary people incorporate the health effects of climate change in their health maintenance, chronic disease management, and prevention. There are many questions to address if we wish to adequately protect health over the coming decades. Who will pioneer this and how will nurses incorporate climate change into your research?

**Education**

Do we wait for curriculum changes in an already saturated schedule, or do we incorporate it into what we are teaching now? Even more, are we educating nurses on how to be ambassadors for change (Barna, Goodman, & Mortimer, 2012) and does this include showing them as opposed to just telling them, using case studies and examples in our communities, schools, and hospitals? Will we provide nurses with educational opportunities that empower them to contribute actively to sustainable development? It is important to consider what can be changed today in nursing education to prepare nurses for this challenge tomorrow (Leffers et al., 2017). The most recent 2018 *Lancet Countdown on Health and Climate Change Brief for the United States of America* was released on November 28, 2018, with a major focus on educating health professionals as key to preparedness. This report urges that training for both current and next-generation health professionals must focus on recognition, response, preparedness, and education to prepare for the health impacts of climate change (Salas, Knappenberger, & Hess, 2018).

**Advocacy**

If nurses are not at the table then we are on the menu. Ten thousand nurses on boards by 2020 is the goal; how many of them will be the
next generation of nurse leaders (Boyle, 2014)? How are we preparing emerging nurse leaders for these roles? At a plenary session at the 2018 American Academy of Nursing Annual Conference, it was mentioned that the health system addresses only 10% to 20% of what impacts health. With that, how are we strengthening local communities, enabling them to care for their environments, and assigning environmental responsibilities to the levels of government where they can be carried out most effectively? It is also most necessary to support the young people of our communities and emerging nurse leaders in our profession, enabling them to fulfill their essential role in creating sustainable societies. Nurses especially need to engage in policy and serve as experts in growing numbers.

Practice

A recent study examined nurses’ perceptions of climate, environment, and their role in addressing related challenges. The study found that nurses displayed an incongruence between these issues and their daily practice (Anåker, Nilsson, Holmner, & Elf, 2015). An example of this notion suggested nurses consider climate change efforts in their recycling behaviors at home, yet fail to address the importance of recycling in the workplace. Emphasizing our power to move our efforts forward, Margaret Mead suggested: “Never doubt that a small group of thoughtful, committed citizens can change the world; for indeed, it’s the only thing that ever has.” To initiate this change we must practice, then we must practice what we practice, and finally we must preach what we practice. Furthermore, “Nurses have the responsibility to ask themselves, ‘Can we use less? Can it be reused? Can it be recycled?’” (Barna et al., 2012, p. 768).

How are we handling waste (mitigation) and are we developing policies and emergency preparedness plans (adaptation) (Anderko, Davies-Cole, & Strunk, 2014), eating locally sourced foods, opting to print on both sides of paper, choosing tap water over bottled, using alternate methods of transportation, walking and riding bicycles when we can (Barna et al., 2012)? Climate resilience must be incorporated in our climate adaptation initiatives. Who will commit to small changes such as these?

Call to Action

It’s time. It is time for nurses to step up and see themselves as a part of the solution to climate change. It is time for those who have come before the current generation to be a part of leading climate change efforts by inviting emerging nurse leaders into the fold. Nearly 4 million registered nurses in the United States compose over 1% of the U.S. population – we are far from a small group. Yes, we are well-positioned to be at the forefront of change. But position is the starting point, and we are long past the beginning of this crisis. We can no longer talk about what needs to be done, we must intelligently and determinedly show our convictions through actions. Propelling our efforts

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References


