



Climate Change, Climate Justice, and Environmental Health: Implications for the Nursing Profession

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Abstract

Purpose: Climate change is an emerging challenge linked to negative outcomes for the environment and human health. Since the 1960s, there has been a growing recognition of the need to address climate change and the impact of greenhouse gas emissions implicated in the warming of our planet. There are also deleterious health outcomes linked to complex climate changes that are emerging in the 21st century. This article addresses the social justice issues associated with climate change and human health and discussion of climate justice.

Organizing Construct: Discussion paper.

Methods: A literature search of electronic databases was conducted for articles, texts, and documents related to climate change, climate justice, and human health.

Findings: The literature suggests that those who contribute least to global warming are those who will disproportionately be affected by the negative health outcomes of climate change. The concept of climate justice and the role of the Mary Robinson Foundation—Climate Justice are discussed within a framework of nursing's professional responsibility and the importance of social justice for the world's people. The nursing profession must take a leadership role in engaging in policy and advocacy discussions in addressing the looming problems associated with climate change.

Conclusions: Nursing organizations have adopted resolutions and engaged in leadership roles to address climate change at the local, regional, national, and global level. It is essential that nurses embrace concepts related to social justice and engage in the policy debate regarding the deleterious effects on human health related to global warming and climate change. Nursing's commitment to social justice offers an opportunity to offer significant global leadership in addressing the health implications related to climate change.

Clinical Relevance: Recognizing the negative impacts of climate change on well-being and the underlying socioeconomic reasons for their disproportionate and inequitable distribution can expand and optimize the profession's role in education, practice, research, and policy-making efforts to address climate change.

Climate change represents an urgent global health and environmental health challenge that requires the engagement, advocacy, and leadership of the nursing profession to mitigate the health effects on the world's people.

As Lemery, Williams, and Farmer (2014) note regarding climate change and its deleterious impact on our global community:

The people who will suffer most are those who were 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. It is in these places that the threat-multiplying effects of climate change will denigrate human dignity, health, and potential the most. It is in these same disadvantaged settings that fragile health systems are least able to cope with the increased demands they will face. (p. 2)

In 1992, the World Health Organization (WHO) developed a report, *Our Planet, Our Health: Report of the WHO Commission on Health and the Environment*. This report suggested that environmental health is linked with human health, quality of life, and physical, chemical, biological, and social as well as psychological problems in the environment; environmental health is aimed at addressing the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially adversely affect the health conditions of current and future populations. More recently, the WHO (2012) noted that there is overwhelming evidence linking human activities to climate change, which in turn has serious implications for public and environmental health. Globally, the nursing profession has a leading policy and advocacy role in addressing the sequelae of climate change due to extreme weather events, climatic changes that affect food and water supplies, and ecosystem changes. The WHO (2012) notes that climate and weather have a serious impact on health. As a result, increased deaths in heat waves and in natural disasters as a result of more volatile weather patterns, as well as changing patterns of life-threatening vector-borne diseases such as malaria, are occurring. In addition, these changes have increased the prevalence of existing and emerging infectious diseases.

Climate change is well known to adversely affect the social and environmental determinants of health—particularly access to food, clean air, and water. Nightingale's (1859) prescient views on the importance of pure air, water, light, drainage, and cleanliness are as important in the 21st century as when her ideas were first introduced in *Notes on Nursing* over 150 years ago. Most notably, Nightingale understood that areas with weak health infrastructure and areas of conflict were particularly vulnerable to negative health consequences. In our contemporary global community, we are witnessing the negative sequelae of the anthropogenic effects of greenhouse gas emissions and resulting global warming. Moreover, as Levy and Patz (2015) note, "climate change—the global climate crisis—may be the defining moral

issue of the 21st century" (p. 311). Thus, the purpose of this article is to summarize selected nursing policy positions on climate change and climate justice and examine the role of nursing in developing a climate justice agenda.

From a nursing perspective, leading nurse experts have discussed the essential role of nurses in addressing climate change. Goodman (2013) urged that nurses must engage in a personal commitment to environmental issues and further the understanding of climate change and its health consequences. Anåker, Nilsson, Holmner, and Elf (2015), in a qualitative study examining nurses' perceptions of climate change and their role in sustainable development, found that there is an incongruence between climate and environmental issues and nurses' daily work; and that public health work is regarded as a health co-benefit of climate change mitigation and is an important role for all nursing professionals.

Overview of Climate Change

Environmental and Health Consequences of Climate Change

The WHO (2014a, 2014b) estimated that climate change is expected to cause approximately 250,000 additional deaths per year between 2030 and 2050: 38,000 due to heat exposure in elderly people; 48,000 due to diarrheal disease; 60,000 due to malaria; and 95,000 due to childhood undernutrition. Additional negative outcomes include unintentional injuries related to coastal and inland flooding, droughts, and fires, with the greatest areas impacted in resource-limited countries. The health impacts of climate change occur in several key areas: exposure to temperature extremes; extreme weather events and related disasters; the effects of air pollution; lack of access to food and water; vector-borne and zoonotic diseases; and ozone depletion. The resulting deleterious effects are detrimental to the social, economic, and health circumstances of populations worldwide. The Intergovernmental Panel on Climate Change (IPCC, 2007a, 2007b, 2007c, 2007d) projected that the future burden of disease related to climate change will include increases in diarrheal diseases and malnutrition as global warming affects access to clean water and less available arable land. Vector-borne diseases such as malaria, dengue, and Zika are sensitive to climate change and are expected to increase in tropical areas. The effects of air pollution are a major health threat in numerous countries and are directly linked to deleterious effects on cardiac and respiratory health.

With regard to exposure to temperature extremes, the most vulnerable, including the young, elderly, and those living in areas of the world without the ability to mitigate the effects of extreme high or low temperatures, are disproportionately affected. Extreme weather events, including floods, droughts, fires, hurricanes, typhoons, and severe storms, have increased due to climate change and global warming. These disasters lead to health-related consequences for communities worldwide; namely access to food and water, one of the most fundamental human needs, has been critically impacted by global warming and climate change. In addition, droughts and lack of access to water have affected the ability to support agriculture and livestock farming. Salt water intrusion poses an enormous threat for island nations and coastal communities, while communities along rivers also struggle with water intrusion worldwide. These critical problems leave communities struggling to support their populations and are linked with conflict and war globally. **Table 1** presents an overview of health concerns related to climate change developed by the Canadian Nurses Association (Canadian Nurses Association [CAN], 2008a, 2008b).

The Political Landscape of Climate Change

Climate change emerged as a concern in the 1960s, when greenhouse gases were found to contribute to air pollution and warming of the planet, and were linked to negative sequelae for human health. On December 12, 2015, the parties to the United Nations (UN) Framework Convention on Climate Change (UNFCCC) attending the UN Climate Change Conference in Paris reached a landmark agreement in the two decade-long efforts to address global climate change. The agreement, known as the 21st session of the UNFCCC Conference of the Parties or COP 21, was reached with the presence of 150 presidents and prime ministers—the largest ever gathering of heads of state in Paris. The Paris Agreement was the most recent step in the evolution of the UN's role in climate change, which began in 1992 with the adoption of the Climate Change Framework Convention. Subsequently, in 1997, the Kyoto Protocol was developed and included binding emissions targets for developed countries; however, several countries, including the United States, did not sign on to binding emissions. In 2009, the Copenhagen Accord, and in 2010, the Cancun Agreements were promulgated. Thus, progress was made toward wider participation of countries in setting binding targets to keep average warming no more than 2°C above pre-industrial levels. The Durban Platform for Enhanced Action in 2011 led to further progress toward the

Table 1. Health Concerns Related to Climate Change

Health concern	Examples of health vulnerabilities
Temperature-related morbidity and mortality	Cold and heat-related illness Respiratory and cardiovascular illness Increased occupational health risks
Effects of extreme weather events	Damage to public health infrastructure Injuries and illnesses Social and mental health stress due to disasters Occupational health hazards Population displacement
Effects related to air pollution	Exposure to outdoor and indoor air pollutants and allergens Asthma and other respiratory diseases Heart attack, stroke and other cardiovascular diseases Cancer
Effects of water- and food-borne contamination	Diarrhea and intoxication caused by chemical and biological contaminants
Effects of exposure to ultraviolet rays	Skin damage and skin cancer Cataracts Disturbed immune function
Population vulnerabilities in rural and urban communities	Seniors Children Chronically ill people Low-income and homeless people Northern residents (Canadian north area) Disabled people People living on the land
Socio-economic impacts on community health and well-being	Loss of income and productivity Social disruption Diminished quality of life Increased costs for health care Health effects of mitigation technologies

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achievements made in Paris in 2015. A subsequent meeting in Warsaw sought to hold nations accountable for achievable goals to reduce global warming prior to the Paris conference. The outcomes of the Paris Agreement reaffirm the goal of keeping average warming below 2°C, while also urging countries to pursue efforts to limit at 1.5°C—a more ambitious goal that would further limit the vulnerability to climate

impacts of developing countries. The Paris Agreement also articulates two long-term emission goals: first, that all parties acknowledge a peaking of emissions as soon as possible; and second that a goal of net greenhouse gas neutrality be achieved. Unfortunately, U.S. President Donald Trump announced in January 2017 that the US would be withdrawing from the Paris Climate Agreement—one of only three countries that include the US, Syria, and Nicaragua—who will not abide by the agreement.

What Is Climate Justice?

Climate justice is a concept that refers to the ethical and human rights issues that occur as a result of climate change. The issues of justice—particularly social justice, environmental justice, and advocacy—are integrally linked to the movement to address climate change. Inherent in the concept of climate justice is the recognition that those least responsible for climate change experience the greatest negative impacts to their well-being. Lindley et al. (2011) noted that the impact of extreme climate events is not limited to loss of life, loss of income and property, and deleterious health consequences. They identify “important losses in central dimensions of well-being in themselves” (p.7), such as disruption of children’s education, loss of control of daily routines, and irreplaceable loss of memorabilia, that when not taken into consideration results in a serious underestimation of the loss of well-being in the broader sense.

As Preston et al. (2014) contend, vulnerability to negative impacts of climate change is unequally distributed and is influenced by a combination of personal (e.g., age, health status), social (gender, income, strength of social networks), and environmental factors. Moreover, they point out that those who are most vulnerable tend to have limited or no voice in policy decisions and pay more proportionally to implement policies that outline adaptive and mitigation strategies (Preston et al., 2014). This notion applies to people and places globally. While it is clear that the well-being of those living in resource-challenged countries is negatively affected by climate change, it is equally important to note that people and communities in resource-rich countries, for example, tribal communities and communities of color, are also vulnerable (Cleetus, 2015). Assessing for and understanding the nature of the vulnerabilities to climate change and extreme weather events as they relate to specific populations is essential to create socially just policies, which acknowledge and give voice to the most vulnerable (Preston et al., 2014) and strengthen climate resilience in vulnerable communities (Cleetus, 2015).

Mary Robinson Foundation—Climate Justice

Mary Robinson, former President of the Republic of Ireland from 1990 to 1997 and former UN High Commissioner for Human Rights from 1997 to 2002, launched global efforts to address the warming of the planet and the impact of climate change on health, development, and global communities. The vision of the Mary Roberson Foundation—Climate Justice (MRFCJ) is to engage in a people-centered, developmental approach, the bases for which are global justice and equity, to advance climate justice and effectively address the impact of climate change (MRFCJ, n.d.). The MRFCJ focuses on three key areas: human rights and climate change, women’s leadership on gender and climate change, and future generations. These areas are uniquely addressed by the foundation through the following activities.

Human rights and climate change. The MRFCJ suggests that energy is fundamental to achieving development goals related to poverty, health outcomes, and increased productivity and economic growth. This goal aims to achieve stabilization in climate change by addressing the impacts of climate change and the outcomes related to poverty, deleterious effects on health, and reduction in economic growth. These challenges are already occurring in many global areas due to warming of the planet, lack of access to water, and other negative outcomes. Global policies that are aimed at climate stabilization and increased access to sustainable energy are urgently needed so that the burden and benefits of our climate are shared equitably. The nursing profession should engage in efforts to advocate for sustainable energy and energy conservation. Increased emphasis on nursing’s role in becoming involved in and supporting conservation and energy sustainability is urgently needed.

Equity and climate justice. Equity and climate justice are inherently linked in considering how resource-rich countries profoundly impact climate change, while resource-poor countries disproportionately bear the burden and health consequences. Poverty, disenfranchisement, and gender are issues that we must confront and that the nursing profession is committed to on behalf of the world’s people and in seeking justice regarding climate change. Given the inter-relationship between health, equity, and the impacts of climate change, achieving global health equity requires that the nursing profession engage in seeking climate justice.

A major area of equity that the MRFCJ addresses is the basic human right to sufficient food for the world’s people. The foundation notes that current food production systems are not sustainable for the 21st century and

beyond. Food and nutrition security are addressed as critical in mitigation and adaptation to climate change and at the heart of equity and climate justice. The Foundation believes addressing climate change and achieving sustainability in the global food system must be recognized as dual imperatives (MRFCJ, n.d.).

Women’s leadership on gender and climate change. Women and young girls are disproportionately burdened by climate change, in large part because their basic human rights continue to be denied. Therefore, gender issues and gender equality are inextricably linking to climate justice. A recent WHO (2014a) document, “Gender, Climate Change, and Health,” discusses the evidence that many of the negative health consequences related to climate change show these gender differentials. In many societies, women and girls are responsible for providing food and obtaining water for the family. As such, a greater proportion of women and girls die as a result of extreme weather events and suffer from nutritional deficiencies and health burdens associated with traveling to fetch water than do men. Additionally, an increasing lack of access to water as a result of drought conditions necessitate lead girls to travel further distances to obtain potable water, which prevents them from going to school and obtaining an education.

The MRFCJ recognizes that women must be better represented in policy decision making related to climate change to insure that these policies are gender sensitive. Therefore, the Foundation’s work is focused on strengthening women’s leadership roles in climate justice discussions. The nursing profession has served as a vocal advocate of the issues of women throughout its history as well as in our contemporary society and should continue to advance the health and well-being of women and girls globally.

Future generations. The final focus of the work of the MRFCJ is the recognition and promotion of the principle of intergenerational equity, the idea that the action or inaction of the current generation can jeopardize the rights and well-being of future generations. Specific strategies were proposed: to create a UN institutional body whose main role would be to speak for future generations to ensure that welfare of those yet to be born is taken into consideration in future policy decisions and to avoid “myopic policy making” (MRFCJ, n.d.); to strengthen youth participation and ensure that youth from both resource-rich and resource-challenged countries are included; and that the concept of intergenerational equity is considered in all efforts since it is consistent with a climate justice approach linking human

Table 2. Mary Robinson Foundation—Climate Justice (n.d.)

Respect and protect human rights
Support the right to development
Share benefits and burdens equitably
Ensure that decisions on climate change are participatory, transparent and accountable
Highlight gender equality and equity
Harness the transformative power of education for climate stewardship
Use effective partnerships to secure climate justice

rights and development to safeguard the rights of the most vulnerable and sharing the burdens and benefits of climate change (MRFCJ, 2013). It is essential that efforts include the effective participation of young people—including our millennial generation of nurses—and engage their contributions to climate policy decision making and analyses of the health issues that are occurring due to climate change.

MRFCJ Principles of Climate Justice

The MRFCJ identified seven key principles of climate justice that have relevance for our global society and the nursing profession (MRFCJ, n.d.; **Table 2**). The principles of the MRFCJ provide a framework for the discussion of potential strategies to address climate injustice and advance the rights of global populations who are disproportionately affected by climate change. These principles can inform and advance the profession’s efforts to advocate for those affected by climate change. Specifically, their implications for health policy and for nursing’s response to the injustices associated with climate change are explored.

Principle One: Respect and protect human rights. The first principle focuses on advancing respect and protection of human rights. This principle is also embedded in the American Nurses Association (ANA, 2015) “Code of Ethics for Nurses with Interpretive Statements,” CNA (2008a) “Code of Ethics for Registered Nurses,” and the International Council of Nurses (2012) “Codes of Ethics for Nurses,” among others. Thus, the principle on advancing respect and human rights related to climate justice promulgated by the MRFCJ is an extension of a principle addressed globally by the nursing profession. The challenges that have emerged due to climate change pose new opportunities to address the environmental health issues that are occurring and which may limit human rights of the disenfranchised. Case in point: an increase in vector-borne illnesses due to climate change already poses health challenges that disproportionately affect the most poor. The increase

in chikungunya, which has now emerged in areas of the world where this mosquito-borne illness was never prevalent, is one example. An increase in malaria prevalence globally also is a growing challenge due to increases in mosquito-borne illness due to climate change. Most recently, the emergence of the Zika virus which is spread to people primarily through the bite of an infected *Aedes aegypti* species mosquito, has become a major public health challenge. Zika virus has evolved into a major health concern for women and neonates related to negative pregnancy outcomes, including neonatal microcephaly and other brain abnormalities. Recently both the Pan American Health Organization (PAHO, 2016) and the Centers for Disease Control and Prevention (CDC, 2016) have issued alerts regarding women and pregnancy due to dramatic increases in these negative birth outcomes—with the spread of the mosquito as a vector that may also be linked with climate change.

A second challenge that poses an enormous threat to human rights is the loss of arable land due to droughts and warming of the planet and the resultant lack of access to food and nutrition. A National Public Radio (2013) broadcast addressed the challenges of drought and food insecurity as a critical factor in the emergence of conflict and war in Syria's disenfranchised farming populations. Subsequently, farmers relocated to cities in Syria where lack of opportunity fueled both the Syrian conflict and the current migrant crisis across Europe. From a social justice perspective again, those least responsible for climate change were disproportionately affected and subsequently dislocated from homes and their livelihood and continue to suffer immeasurably.

Principle 2: Support the right to development.

The second principle urges support for the right to development and the intersection with climate justice. As the MRFCJ (n.d.) suggests:

The vast gulf in resources between rich and poor, evident in the gap between countries in the North and South and also within many countries (both North and South) is the deepest injustice of our age. This failure of resource-fairness makes it impossible for billions of humans to lead decent lives, the sort of life-opportunities that a commitment to true equality should make an absolute essential.

There are numerous nursing organizations that engage in the critical dialogue regarding global and public health issues, including the Honor Society of Nursing, Sigma Theta Tau International; the ANA; the CNA; and the International Council of Nurses, as well as the broader

efforts of the American Public Health Association, Physicians for Social Responsibility, the UN, and the WHO. More recently, religious leaders such as Pope Francis of the Roman Catholic Church have entered into the dialogue related to climate change. In his 2015 encyclical on the environment, *Laudato Si*, Pope Francis urges that humanity address the destruction to the environment and the world's people and the broad implications related to the burgeoning demands due to environmental degradation.

Third Principle: Share benefits and burdens equitably.

The third principle aims to share burdens and benefits of climate change and climate justice. For example, the populations of Africa are disproportionately affected by climate shifts and lack of access to water. As previously mentioned, this problem also affects the ability of women and girls to access educational opportunities, further burdening their societies and the health of families and communities. The impact of hurricanes, typhoons, floods, and droughts poses looming threats to the health of the world's populations. Flooding poses both emergency health consequences and long-term health threats as evidenced by Hurricane Katrina in New Orleans and recent flooding and typhoons in the Philippines, as examples. Island nations are well known to be at great risk due to salt water intrusion, which affects agriculture and other aspects of daily life. These environmental health disasters and challenges disproportionately affect the poor, vulnerable, and disenfranchised.

Fourth Principle: Ensure that decisions on climate change are participatory, transparent, and accountable.

The fourth principle of the MRFCJ aims to ensure that decisions on climate change are participatory, transparent, and accountable. The nursing profession can engage in this important effort by promulgating white papers and position statements about nursing's health policy work related to climate change. Nursing has a vital role in advancing the health of the world's people. When considering the future needs and health challenges of our global community and future generations, the profession must explicitly recognize climate change and identify and articulate its deleterious effects on human health and well-being. There are many areas of the world, for example, where environmental pollution from greenhouse gases is the leading cause of respiratory ailments and cardiovascular health issues. Nurses, who represent the largest group of healthcare workers worldwide, see these effects firsthand, often among those most vulnerable, such as the poor, young, elderly, or female, whose circumstances are often not considered in policy decisions. Nurses are in a key position to contribute to

just policy making by lending voice to those who suffer these inequities. In the 21st century and beyond, if climate change is not addressed in a participatory manner, then these health issues will continue to threaten the vast majority of the world's people, but particularly the most vulnerable—the poor, the young, and the elderly.

Principle Five: Highlight gender equality and equity. The fifth principle addresses the importance of gender equality and equity. Similar to the UN Millennium Development Goal 3: Promote Gender Equality and Empower Women, this principle links the lack of equality of women with the evolving challenges related to climate change and climate justice. According to the environmental website, Ecowatch (2015), since 2010, 20 million of the 26 million people worldwide who have been displaced by the effects of climate change are women and girls, who also make up the greatest percentage of the world's poor. Climate change is also leading to food insecurity and both undernutrition and obesity due to unhealthy food availability, thus contributing to increased rates of diabetes, cardiovascular disease, and other health issues. Further, Ecowatch (2015) noted that women farm 60% to 80% of household food in resource-limited countries where extreme climate conditions have led to lack of water and shortages of crops. However, although women continue to be disproportionately affected, they have the potential to be agents of change to address climate change. UN studies have demonstrated that strategies to mitigate or adapt to the effects of climate change are not successful without the support of women (Ecowatch, 2015). To that end, the MRFCJ seeks to strengthen women's leadership skills to optimize their role in achieving climate justice.

Principle Six: Harness the transformative power of education for climate stewardship. The sixth principle addresses the importance of harnessing the transformative power of education for climate stewardship. For the nursing profession, a collective response must be embraced to include climate justice, climate change, and climate stewardship as challenges for environmental and community health. These concepts, as well as health outcomes resulting from climate change, should be introduced into the curriculum at all levels of nursing education from baccalaureate through doctoral studies. Service opportunities locally, nationally, and internationally should introduce students, faculty, and practicing nurses to the challenges related to climate injustices and the various roles nurses can play in climate stewardship. Education and awareness are the essential

Table 3. United Nations Sustainable Development Goals

Goal 1: No poverty
Goal 2: Zero hunger
Goal 3: Good health and well-being
Goal 4: Quality education
Goal 5: Gender equality
Goal 6: Clean water and sanitation
Goal 7: Affordable and clean energy
Goal 8: Decent work and economic growth
Goal 9: Industry, innovation, and infrastructure
Goal 10: Reduced inequalities
Goal 11: Sustainable cities and communities
Goal 12: Responsible production and consumption
Goal 13: Climate action
Goal 14: Life below water
Goal 15: Life on land
Goal 16: Peace, justice, and strong institutions
Goal 17: Partnerships for the goals

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first steps to increase nursing's role and voice in the development of health policy related to climate change.

Principle Seven: Use effective partnerships to secure climate justice. The seventh principle addresses the urgent need for effective partnerships to secure climate justice. Nursing's global voice should be engaged in these partnerships aimed at securing climate justice. The early nursing leadership of Florence Nightingale, who embraced the environmental factors that affect health, led to the development of her framework that focused on access to clean air, water, light, and cleanliness for environmental health. Nursing organizations globally should embrace the emerging role of the nursing profession in developing effective partnerships and leadership aimed at securing climate justice.

Nursing Leadership in Climate Change, Climate Justice, and Environmental Health

The role of the nursing profession is critical in addressing climate change, climate justice, and environmental health. The public health consequences and well-established negative sequelae related to climate change are evident, and our profession must have a collective call to action. Leadership by nursing organizations has supported engagement with the UN's 17 Sustainable Development Goals (SDGs; UN, 2015), which build upon the earlier UN Millennium Development Goals (MDGs; UN, 2000). The MDGs included the following goals: (a) eradicate extreme poverty and hunger; (b) achieve universal primary education; (c) promote gender equality

Table 4. Canadian Nurses Association (CNA) Position Statement (CNA, 2009): Climate Change and Health and Canadian Nurses Association (CNA) Code of Ethics (CNA, 2008)

Excerpt from the CNA Position Statement (CNA, 2009):

The Canadian Nurses Association (CNA) believes that changes in our climate are occurring worldwide and that nurses have a role in supporting adaptation to and mitigation of climate change through nursing practice, research, administration, education, and policy. The most recent report of the Intergovernmental Panel on Climate Change (IPCC) concluded unequivocally that our climate is changing in response to human activities and that human health is being affected by these changes (IPCC, 2007a, 2007b, 2007c, 2007d).

The CNA *Code of Ethics for Registered Nurses* (CNA, 2008) supports nursing action on climate change:

There are broad aspects of social justice that are associated with health and well-being and that ethical nursing practice addresses. These aspects relate to the need for change in systems and societal structures in order to create greater equity for all. Nurses should endeavor as much as possible, individually and collectively, to advocate for and work toward eliminating social inequities by: . . . vi. Supporting environmental preservation and restoration and advocating for initiatives that reduce environmentally harmful practices in order to promote health and well-being. (p. 20)

CNA believes that Canadian nurses face a very real choice between getting involved now, by promoting climate change adaptation (that is, responding to the effects of climate change) and mitigation (that is, taking action to reduce climate changes), or waiting until the increasingly severe health effects of climate change are felt by the individuals, families and communities with whom they work.

Nurses are uniquely qualified to support adaptation to and mitigation of climate change. They have both the necessary scientific background and the communication skills to explain climate change to the public. Their expertise in health promotion and behaviour change also equips them to foster lifestyle choices, at the individual, family and community level, that support health under changing climatic conditions.

and empower women; (d) reduce childhood mortality; (e) improve maternal mortality; (f) combat HIV/AIDS, malaria, and other diseases; (g) ensure environmental sustainability; and (h) develop a global partnership for development. The aim was to achieve these goals by 2015, and although progress was made, not all goals were fully achieved.

Building on the goals of the MDGs, the SDGs aim to achieve specific targets that will improve the quality of life and well-being of the world's people by the year 2030 (**Table 3**). The SDGs include a specific goal aimed at taking urgent action to combat climate change and its impacts—particularly the impact on health. Other organizations, including the ANA, have adopted resolutions to address policy and advocacy. Patton and Seiple (2008) developed an action report that was submitted to the ANA that addressed the environmental impact on global climate change from anthropogenic causes. They noted that climate change is predicted to place additional demands on healthcare systems in resource-limited and resource-rich environments. Thus, the action report resulted in a resolution from the ANA that the organizations must recognize and acknowledge the health challenges that are unprecedented in human history and the need for nursing advocacy and policy efforts.

Further, the ANA (2007) developed “ANA’s Principles of Environmental Health for Nursing Practice With Implementation Strategies,” the purpose of which was to guide environmentally safe nursing care. These principles examined the role of nursing in environmental health and addressed global climate change and chemical burden with the associated negative health

outcomes. From this work, policy statements for safe environmental practices for nurses and recommendations for coalitions and partnerships were developed. Ten environmental health principles were promulgated based on the tenets of social justice. While critically important, these principles are aimed primarily at extending knowledge of environmental health concepts for nurses, addressing the nurse’s work environment, quality of work life, and the health environment and diversity. These principles represent efforts to address environmental health, embed these principles in nursing practice, and advocate for a healthier environment. However, the larger focus on global climate change and the policy and advocacy roles of nurses in addressing this challenge has been undertaken by other professional organizations.

The CNA has led in efforts regarding nursing’s role in policy and advocacy in addressing climate change and global warming. In the CNA’s 2009 position statement, “Climate Change and Health,” the organization notes that nurses have a role in practice, research, administration, education, and policy to address climate change (**Table 4**). Further, the “CNA Code of Ethics for Registered Nurses” (CNA, 2008a) urges that the nursing profession take action on climate change based on principles of social justice and the association with health and well-being and to address social inequities.

Among the CNA’s recommendations is that nursing must show leadership in addressing their own personal practices to reduce their own contributions to greenhouse gas emissions. Further, the CNA urges that nurses encourage their professional associations to support

policy efforts to reduce greenhouse gases and to work with governmental and nongovernmental organizations to offer support to climate change efforts globally. In 2008, the CNA promulgated a comprehensive report, "The Role of Nurses in Addressing Climate Change" (CNA, 2008a), which encompassed a framework of social justice, the global impact on health related to climate change, and the nursing role in adaptation to climate change and mitigation strategies. The CNA (2009) also endorses the importance of addressing environmental health and the climate by advancing awareness of broader global concerns, including human rights, war, world hunger, issues of women and girls, and pollution.

In summary, the nursing profession must engage in the policy debate regarding the deleterious effects on human health related to global warming and climate change. Nursing's commitment to social justice offers an opportunity to offer significant global leadership in addressing the health implications related to climate change. The nursing profession must address not only the health issues that are increasingly prevalent related to heat-related illnesses, respiratory and cardiovascular problems, malnutrition due to lack of available food, air pollution, and lack of water, but also assume a leading advocacy role regarding this urgent global health issue.

Nursing's policy and leadership roles offer a unique global opportunity for the largest group of health professionals worldwide to expand the profession's influence aimed at mitigating the health effects related to climate change and engaging in individual, community, and population-based efforts to reduce the negative health effects of climate change. Specific examples of leadership and advocacy efforts include efforts in nursing practice, education, research, administration, and policy. In nursing practice, advocating for products, technology, and practices that support a healthy environment, while focusing on recyclable materials, environmentally supportive disposal, and limiting negative sequelae for patients and healthcare providers. In nursing education, it is critical to integrate knowledge of environmental health concepts and offer content in baccalaureate and graduate education regarding global climate change and associated negative health outcomes and the policy and advocacy role of nursing worldwide. Nursing research must focus on investigating and documenting the link between climatic conditions and negative health outcomes as well as nursing efforts aimed at mitigation and adaptation to the health effects of climate change. Nursing administration should engage in local, regional, national, and global efforts to support environmentally friendly practices in healthcare organizations and proactively consider the role of nursing in the complex health

problems and prevention, education, and care of patients dealing with health challenges related to climate change. Thus, the nursing profession is positioned to lead in policy and advocacy efforts worldwide to address global climate change, human health, and the future of the world's people.

Clinical Resources

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