

## Wisconsin Nurses Association

### Background Information 2008 Reference #3 – Global Climate Change

There is widespread scientific consensus that the world's climate is changing, and that these changes are largely a result of human activities. Over the last 15 years, the Intergovernmental Panel on Climate Change (IPCC), a team of scientists from 100 countries, have been reviewing the science on global warming and the potential for environmental and health threats from climate change. The IPCC recently released a report concluding that climate change due to human activity is "very likely" (IPCC, 2007). Some of the effects of climate change are likely to include "more variable weather, stronger and longer heat waves, more frequent heavy precipitation events, more frequent and severe droughts, extreme weather events such as flooding and tropical cyclones, rises in sea level, and increased air pollution" (CDC, 2008).

Climate change is the result of the build-up of greenhouse gases that act to hold in the sun's radiation and warm the earth's atmosphere. Greenhouse gases include carbon dioxide, methane, and nitrous oxide, among others. Some of these occur naturally, but additional human contributions to greenhouse gas emissions (mostly through the burning of fossil fuels) have caused the warming of the planet to be accelerated, resulting in global climate change. This is almost universally agreed on by scientists.

Scientists estimate that climate change will markedly increase temperatures, sea levels, and precipitation by the year 2100 (IPCC, 2001). As global warming increases, the Earth can expect to see worsening air pollution; heat-related illnesses; accidents and injuries from increased flooding, storm surges, and extreme weather; threatened quantity and quality of water and food supplies; increases in diseases such as cholera due to sewer/garbage pickup disruption; increased psychological stress, depression and isolation (Australian Academy of Science, 2004); and a rise in vector-transmitted diseases such as malaria, West Nile, and Dengue Fever. Indirect effects from climate change include social upheaval; environmental refugees fleeing the rising sea level; increased homelessness due to floods; extreme natural disaster; increased forest fires; disruption of global food production; and economic factors such as decreased crop productivity, decrease in forestry and decreased tourism (ski areas, low-lying coastal towns per IPCC). The combination of both direct and indirect impacts of climate change will likely surpass the surge capacity and capability of an already overburdened health care infrastructure in both developed and under-developed countries (Schwartz, Parker, Glass & Hu, 2006).

Several populations are particularly vulnerable to the effects of climate change. Children do not have fully developed immune or heat-regulatory systems and are more vulnerable to air pollution because of their physiology. Children breathe more air per pound than adults breathe and are more likely to spend time outside while playing. The elderly are more vulnerable to heat-related illness and are at risk from extreme weather events that may lead to falls, injuries and difficulty in evacuating their homes. Previously ill people, such as persons with pre-existing heart or lung conditions are at risk of illness or death from heat and air pollution. Individuals with immunological disorders are at higher risk of infectious diseases spread by contaminated food or water. The urban poor are also vulnerable because urban environments trap heat, and many individuals in this category may not have air conditioning or access to cooled public spaces. In addition, many may not be able to seek early or preventative health care (Longstreth, 2002).

Climate change does and will impact nurses, patients and nursing practices in many ways. It is important to the profession that global climate change and its effects are fully understood. Extreme weather events such as Hurricane Katrina (the IPCC includes intensified tropical storms as one effect of global warming) demonstrated that registered nurses and the nursing profession care greatly about the impact and the victims of such events, and want to help.

Several state and national judicial and legislative efforts have been pursued to curb global warming. The U.S. Supreme Court ruled that the Environmental Protection Agency (EPA) violated the Clean Air Act by declining to regulate new-vehicle emissions standards to control carbon emissions and other pollutants that scientists say contribute to global warming. In 2004 the State of California set its own carbon emission standards that required automakers begin to reduce emissions, starting in 2009. Ten states within the U.S. have lined up to follow California's carbon emission standard. The Clean Energy Act of 2007 is intended to reduce US dependency on foreign oil by investing in clean, renewable, and alternative energy resources, promoting new emerging energy technologies, developing greater energy efficiency. This act has passed in the House and in the Senate with some amendments. It is now waiting for the amendments to be approved in the House-Senate Conference and then to be passed by the U.S. President.

The IPCC Fourth Assessment Report suggests some policy adaptation and mitigation options. These include national water and land use policies, infrastructure standards/regulations that integrate climate change considerations, public health and transportation policies that recognize climate risk; and national energy policies and regulations that encourage use of renewable energy sources.

Several health care professional associations and specialty organizations have been sending out a call to action to the health care community to get involved, urging policy decisions that will stop global warming. One way nurses are entering into the dialogue about fighting climate change is through their writing in professional journals. Examples include articles in *Online Journal of Issues in Nursing* (Afzal, 2007) and in *American Nurse Today* (Condon & Welker-Hood, 2007) in which climate change, its public health impacts, the registered nurse's role and the climate legislative movement are discussed. Another way nurses have become proactive is through lobbying for pollution and toxic chemical reduction bills through their professional organizations. Another way is through the application and the implementation of EPA grants related to the environment and health.

Disaster preparedness has received much attention in the health care community over the last several years. Part of preparing the nation for disasters is to identify hazards and assess the capacity of the health care infrastructure to respond appropriately after a catastrophic event. The IPCC has identified that global climate change presents an urgent hazard, one that has already resulted in numerous natural disasters. As global warming continues the frequency and severity of these events will increase and cause failures in the health care infrastructure. Hurricane Katrina and its after-effects gave the public and the public health community a dramatic look at the far-reaching effects of the type of extreme weather events that are likely to occur and be exacerbated by global warming. Katrina's aftermath uncovered the weaknesses in our public health infrastructure. The most vulnerable and disenfranchised segments of the population were those most affected.

Fortunately, Provision 8 of the Code of Ethics for Nurses speaks to the entire issue: "The nurse collaborates with other health professionals and the public in promoting community, national, and international efforts to meet health needs." See below:

**3.4.** Nurses should also be active participants in the development of policies and review mechanisms designed to promote patient safety, reduce the likelihood of errors, and address both environmental system factors and human factors that present increased risk to patients.

**8.1** Health needs and concerns. The nursing profession is committed to promoting the health, welfare, and safety of all people. The nurse has a responsibility to be aware not only of specific health needs of individual patients but also of broader health concerns "such as world hunger and environmental pollution.. . ."

**8.2** Responsibilities to the public. Nurses, individually and collectively, have a responsibility to be knowledgeable about the health status of the community and existing threats to health and safety. Through support of and participation in community organizations and groups, the nurse assists in efforts to educate the public, facilitates informed choice, identifies conditions and circumstances that contribute to illness, injury and disease, fosters healthy life styles, and participates in institutional and legislative efforts to promote health and meet national health objectives. In addition, the nurse supports initiatives to address barriers to health, such as poverty, homelessness, unsafe living conditions, abuse and violence, and lack of access to health services (ANA, 2001). Also, the IPCC's Fourth Assessment Report reminds all of us that "responding to climate change involves an iterative risk management process that includes both adaptation and mitigation and take into account climate change damages, co-benefits, sustainability, equity, and attitudes to risk" (IPCC, 2007).

Global warming is happening now. It is crucial that the WNA along with the ANA, which has a history of leading and supporting sound environmental initiatives and is a leader in the formation of public policy that affects human health and patient advocacy, take action. Global climate change must be publicly acknowledged as a threat to health, and action taken to inform our members about this issue. Such steps would include educating patients and communities about the connection between the health of our environmental and human health and recommending lifestyle changes that contribute to a more sustainable environment. Nurses, individually and collectively, can actively work to promote such changes in their places of work as well. As one of the most trusted professions of the public, nurses can and should speak out to influence public policy that endorses sustainable energy sources, reduces greenhouse gas emissions and actively work to slow, stop and even reverse global climate change.

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