



POSITION STATEMENT

Climate Change and Maternal, Fetal, and Infant Health

Climate change is causing a global public health crisis that affects the health of women and has implications for the health of future generations. Women who are pregnant are more vulnerable to the effects of global warming and climate change than the general population; women who live in low income or urban communities are most at risk.¹ Certified nurse-midwives (CNMs) and certified midwives (CMs) care for women who are exposed to rising temperatures and extreme weather events that put them and their offspring at risk for adverse health effects.

American College of Nurse-Midwives (ACNM) affirms the following:

- Overwhelming evidence indicates that natural climate variations are being altered by human activity; that these climate changes are increasing in scope and severity; and that climate change poses significant consequences for the planet, including the health of humans.²
- Climate change is a global threat that poses significant risks to women across the lifespan and to the developing fetus and newborn.
- Support is needed for local, national, and international legislation that promotes the reduction of greenhouse gas emissions, the adaptation of resilience planning for communities, and the global commitment to responding to the climate crisis.
- Health care providers, including CNMs/CMs, can reduce their carbon footprints by reducing waste and incorporating renewable energy sources when possible.
- CNMs/CMs should educate themselves and their patients about how to act on alerts for air quality to prevent respiratory issues and avoid exposure during extreme heat and how to avoid exposure to vector-borne diseases.
- CNMs/CMs should be involved in developing national and state climate action plans that incorporate the health and safety needs of women and their families. Minority and other underserved communities that are often disproportionately affected by climate change disruptions warrant special consideration in planning.³

Background

Largely as a result of human activities, unprecedented levels of atmospheric greenhouse gases are contributing to a rise in global temperature and changing climate patterns. From 2000 to 2010, total greenhouse gas emissions were the highest in human history.³ The resulting changes to climate patterns have significant public health implications, including exacerbation of current cases of asthma and increased rates of new cases of asthma, premature death related to air pollution, heat-related illness, and vector-borne disease.⁴

Women who are pregnant are particularly vulnerable to the direct and indirect effects of climate change and are more sensitive to heat stress and dehydration. Researchers linked extreme heat and increased humidity to low birth weight,⁵ preeclampsia, and eclampsia.⁶ The deterioration in air quality caused by burning fossil fuels poses significant risks. Pregnant women exposed to nitrogen dioxide and benzene had an increased risk of preterm birth,⁷ and low birth weight, preterm birth, and small for gestational age were linked to exposure to particulate air pollution.⁸ Exposure to ground level ozone and particulate matter was associated with increased vulnerability to respiratory and cardiovascular diseases in adults.⁹ Negative effects are worsened for women in developing countries by lack of access to health care and public health services, poverty, poor sanitation, food and water insecurity, armed conflict, and mass population migration.¹

Increased temperatures and changes in precipitation have contributed to an increase in the transmission of vector-borne diseases such as the Zika virus, which can cause serious harm to the developing fetus.¹⁰ Extreme weather events such as flooding and droughts that threaten water and food security affect the health of women before and during pregnancy and birth outcomes. Using a range of scales and across all major regions of the world, investigators recently linked climatic events to human conflict, including violence and domestic abuse, child abuse, and lack of reproductive control.¹¹

Incontrovertible evidence demonstrates that climate change presents a threat to the health of individuals and the environment and that pregnant women, their fetuses, and newborns are particularly vulnerable to the effects of climate change. As health professionals who care for these at-risk populations, CNMs/CMs should advocate for evidence-based public health initiatives that address climate change, strive to mitigate emissions locally and within their organizations, and communicate accurate information about the health costs of fossil fuel policies to their clients and policy makers.¹²

REFERENCES

1. Rylander C, Øyvind Odland J, Manning Sandanger T. Climate change and the potential effects on maternal and pregnancy outcomes: an assessment of the most vulnerable – the mother, fetus, and newborn child. *Glob Health Action*. 2013;6(1):19538. doi: 10.3402/gha.v6i0.19538.
2. Gleick P. Joint statements on climate change from national academies of science around the world. <http://scienceblogs.com/significantfigures/index.php/2017/01/17/joint-statements-on-climate-change-from-national-academies-of-science-around-the-world/> . Published January 7, 2017. Accessed April 17, 2017.
3. Intergovernmental Panel on Climate Change. Summary for policy makers. http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policymakers.pdf. Published 2014. Accessed April 17, 2017.
4. Crimmins AJ, Balbus JL, Gamble CB, et al. The impacts of climate change on human health in the United States: a scientific assessment. https://s3.amazonaws.com/climatehealth2016/low/ClimateHealth2016_01_Introduction_small.pdf. Published 2016. Accessed April 17, 2017.

5. Deschenes O, Greenstone M, Guryan J. Climate change and birth weight. *Am Econ Rev*. 2009;99(2): 211-217.
6. Subramaniam V. Seasonal variation in the incidence of preeclampsia and eclampsia in tropical climatic conditions. *BMC Womens Health*. 2007;7:18. doi:10.1186/1472-6874-7-18.
7. Llip S, Ballester F, Estarlich M, Esplugues A, Rebagliato M, Iñiguez C. Preterm birth and exposure to air pollutants during pregnancy. *Environ Res*. 2010;110(8):778-785. doi: 10.1016/j.envres.2010.09.009.
8. Shah PS, Balkhair T. Air pollution and birth outcomes: a systematic review. *Environ Int*. 2001;37(2):498-516. doi: 10.1016/j.envint.2010.10.009.
9. Pannullo F, Lee D, Neal L, et al. Quantifying the impact of current and future concentrations of air pollutants on respiratory disease risk in England. *Environ Health*. 2017;16(1):29. doi: 10.1186/s12940-017-0237-1.
10. Climate Central. More mosquito days increasing Zika risk in the U.S. <http://www.climatecentral.org/news/more-mosquito-days-increasing-zika-risk-in-us-20553>. Published July 27, 2016. Accessed April 17, 2017.
11. Hsiang, SM, Burke, M, Miguel, E. Quantifying the influence of climate on human conflict. *Science*. 2013;341(6151):1235367. doi: 10.1126/science.1235367.
12. Adlong W, Dietsch E. Nursing and climate change: an emerging connection. *Collegian*. 2015; 22(1):19-24.

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