

# Climate and Environmental Health

## COMMUNITY EDUCATION AIMED AT RURAL COMMUNITIES

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### INTRODUCTION

Rural populations lack investment in the social determinants of health (SDoH), especially in education, and lack relationships with trusted community healthcare professionals who are knowledgeable about emerging topics, such as health and climate. Lack of rural finances and investments in broadband and internet leads to a lack of connectivity for contributing to a community's awareness of issues.

Climate and environmental health issues are not readily understood by rural communities given the challenges around the lack of education, informational sharing, and technology connectivity, which negatively impacts their ability to obtain optimal health outcomes. One strategy to increase information is through population health nurses who provide community-targeted education through newspaper articles published in local papers.

### GOAL

The overall goal of this project was to provide community-focused education to a rural population to inform and raise awareness about climate and environmental health issues affecting their community.

### METHODS

Community-based education was the strategy chosen to address the rural community's knowledge and awareness gap regarding climate and health. The Courier Sentinel, a trusted local newspaper, serves several rural communities in northwestern Wisconsin. Research was conducted on various climate and environmental health topics: extreme heat events, water quality, air pollution/air quality, Lyme disease, soil health, environmental justice, and the role of the nurse in planetary health. Articles about these topics were submitted and published weekly during the 8 weeks between June and August 2020.



### TOPICS

#### EXTREME HEAT EVENTS

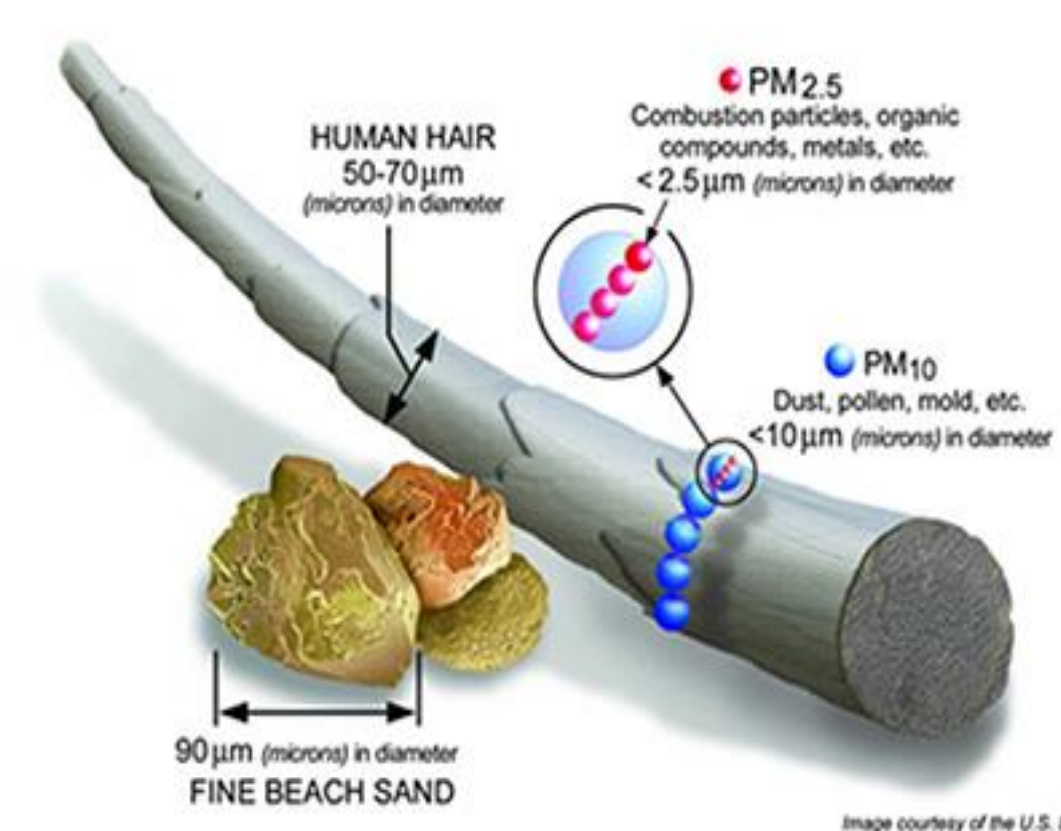
- Northern Wisconsin (WI) has increased extreme heat-related days, with data trends showing the region to become even warmer.
- Extreme heat can cause many illnesses: heat rash, heat cramps, heat exhaustion, and heat stroke.
- Prevention is key. It is important to drink plenty of fluids throughout the day, even before feeling thirsty.

#### WATER QUALITY

- Northern WI has many water sources that support recreational activities, such as fishing, and supplies drinking water for humans, animals, and agricultural needs.
- An increase in frequency and heaviness of precipitation washes more sediment and nutrients, such as phosphorous, off the landscape and into water sources, leading to algae and toxic blooms.
- Sediment runoff along with increased algae will cause low-visibility and inhibit photosynthesis for survival of aquatic vegetation, limiting food supply for fish and affects the fishing industry.

#### AIR POLLUTION/AIR QUALITY

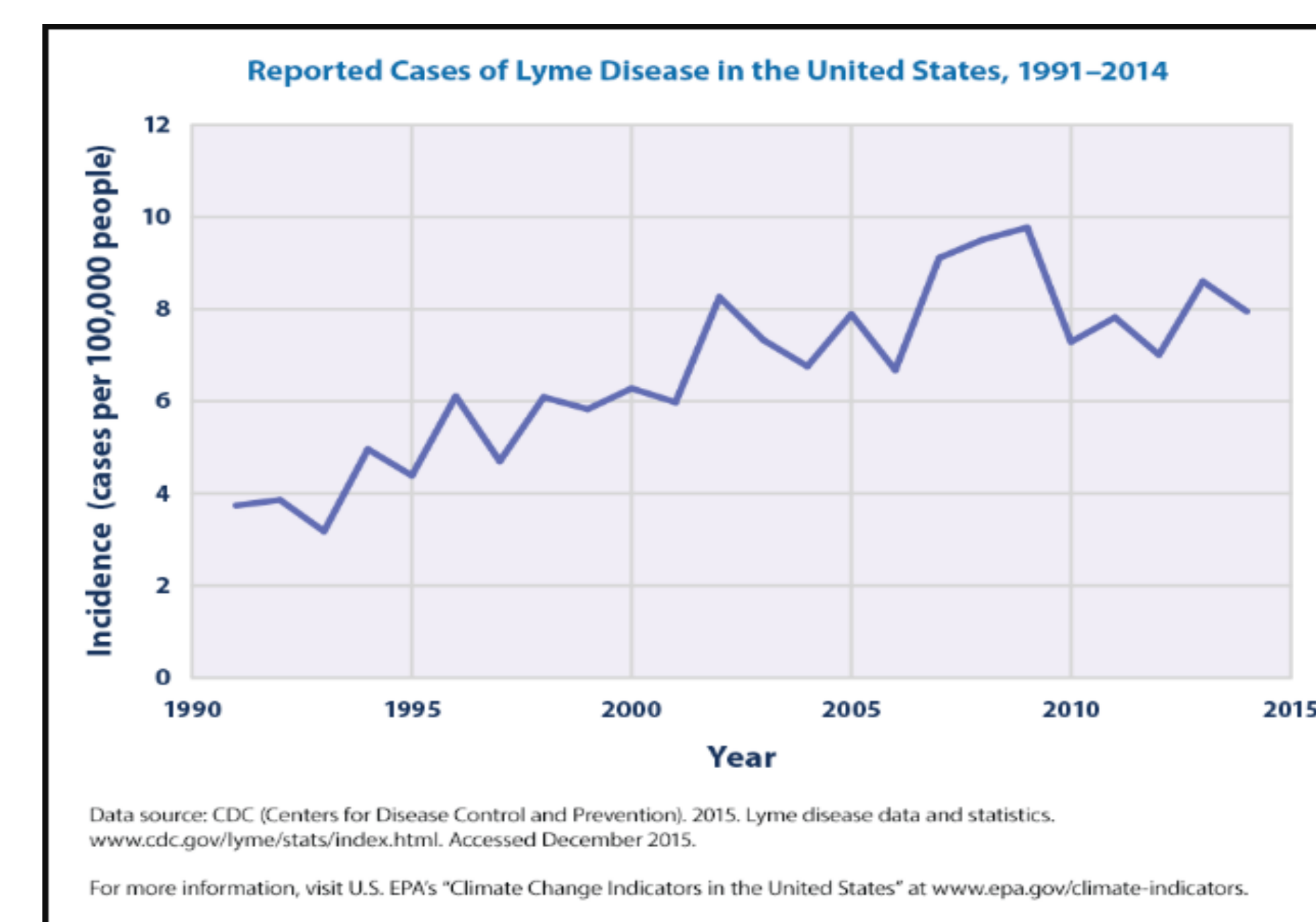
- Northern WI is surrounded by different industrial, trucking, agricultural, forestry, and mining practices that can produce poor air quality.
- Poor air quality can exacerbate already existing lung conditions, such as asthma. This is due to particulate matter, which is a substance that is a mix of tiny solids and liquids in the air like acids, chemicals, metals, soil, and dust particles.
- The air quality index forecast is a tool that provides information about outdoor air pollutants. People with existing heart or lung conditions may want to check the air quality index prior to going outside. (<https://www.airnow.gov/>)
- Climate change from rising temperatures and altering precipitation patterns contribute to increased airborne allergens, like mold and pollen, leading to asthma exacerbations and other allergic responses.



American Lung Association, 2020

#### LYME DISEASE

- Northern WI has an increase of ticks that cause vector-borne diseases due to climate change.
- Warming temperatures are more suitable for many carriers of vector-borne disease, such as ticks, and milder winters result in fewer disease-carrying ticks dying in the winter.
- Lyme disease is the most common vector-borne disease in the United States, but it often goes unnoticed because it mimics other diseases and may be misdiagnosed.
- Those at higher risk, such as outdoor workers, should have the appropriate personal protective equipment and health education trainings.



#### SOIL HEALTH

- Extreme precipitation causes runoff and erosion because the ground is not able to absorb all the water fast enough. Heavy rain causes water to move rapidly through the soil and removes key nutrients needed to sustain agriculture.
- Climate change disrupts the soil and agricultural food production, which leads to food insecurity and a decrease in productivity and profit for farmers.

#### PLANETARY HEALTH AND THE NURSE

- Nursing is the most trusted profession, which is important when considering planetary health.
- Nurses have the obligation and ethical responsibility to care for clients and advocate for optimal health outcomes.
- Nurses have an important role in preparing for climate change and its effects on human health at the individual/family, community, and population level.
- Nurses have the skills needed to inform the public about climate health based upon their scientific knowledge, critical thinking, effective communication skills, focus on health promotion, and expertise advocating for policy change.

### RESULTS AND DISCUSSION

The goal of the project was to begin education and build community awareness about climate change and environmental health issues. At this time, it is not known how much of an impact the community-focused education made directly on the rural community through the 8 weeks of published articles. Anecdotally, some community members noted they now understood better the relationship to climate change and their asthma.

### CONCLUSION AND FUTURE WORK

Future efforts should be aimed at gathering data before and after a community education intervention to assess pre and post knowledge and attitudes about climate and environmental health issues. The goal is to ready the rural community to embrace change that is more ecofriendly, including transitioning to solar and wind alternatives as the community grasps the understanding that everyone's health is at risk with climate change.



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