Module 1: Lecture 3

SCRIPT

Slide 1: Welcome to lecture three about the Minnesota Statewide health assessment! This lecture will discuss sections of the Nature portion of the assessment.

Slide 2: In this lecture we will discuss: the state strengths for nature, climate, and outdoor air quality, indoor air quality, and water.

Slide 3: As part of the Minnesota statewide health assessment, the healthy Minnesota Partnership surveyed Minnesotans about state strengths that support health. People who responded reviewed strengths noted in the 2017 Minnesota statewide health assessment, shared their agreement or disagreement about whether those strengths supported health, and identified missing strengths. Although the survey does not necessarily include a representative sample of all Minnesotans, 583 people completed it.This table shows four of the most prominent strengths MN Nature offers and whether they agree they help support our health. To be transparent, not all populations could access this survey, so respondents are not a representative sample of the state.

The first strength asked about in the survey was MN's accessibility to parks and trails. It was found that 92.2% of respondents agreed that there was high coordination between our health and accessibility to parks and trails. 86.1% of respondents agreed that there is access to lakes and rivers, 80.1% agreed there's an availability of farmers markets, and the lowest ranking strength was 67.5% of respondents had an availability of a home garden or community garden. Overall, a majority of people surveyed agreed that these four things helped to support our health and suggested that other things related to nature help as well, such as the lack of catastrophic weather events. Respondents additionally noted that not everyone has the same access, resources, or support to use these natural resources and shared that climate-related events impact some communities more than others, such as the air quality issues from the 2023 Canadian wildfire smoke.

Slide 4: After monitoring climate change for decades, we continue to see many changes across our environments. Increased extreme rainstorms and increasing temperatures during the winter, with the average daily low rising more than 15 times the average daily summer high. As shown in the graphic, Minnesota has been warmed 3 degrees from 1985 to 2020, and precipitation increased by 3.4 inches. These climate changes have significant impacts on health, such as heat-related illness which 75 people died from in MN from 2000 to 2022, and 613 were in the emergency department from heat-related illness, showing the significant impact these changes have on health. It's affecting vulnerable populations more than others, such as people in poverty or unhoused, older adults, young children, and people with chronic health conditions such as asthma.

Slide 5: Climate change disrupts weather patterns and increases severe weather events that lead to flooding and drought, negatively impacting human health, social networks, land, plants, and wild and domestic animals. One-time and recurring natural disasters also create widespread stress and challenge the mental well-being of entire communities. Rising greenhouse gas emissions lead to increased temperatures that have lead to extreme precipitation, impacting air, heat, floods, droughts, and ecosystems. In 2020, three sectors were responsible for 74% of greenhouse gas emissions: transportation, electrical utility, and agriculture. Minnesota is working to address the causes of climate change through the climate action framework, a plan for our state to address and prepare for climate change. In it's climate action framework, it uses six goals to identify immediate and long-term actions for a better environment. Those goals include clean transportation, climate-smart natural and working lands, resilient communities, clean energy and efficient buildings, healthy lives and communities, and a

clean economy. Minnesota's greenhouse gas emissions have fallen 23% since 2005. Changes in economic sectors related to the COVID-19 pandemic also caused greenhouse gas emissions in the state to drop significantly in 2020.

Slide 6: Air quality changes can lead to negative health outcomes such as asthma attacks, pneumonia, bronchitis, and even contribute to heart attacks, making it challenging to spend time outdoors for vulnerable populations with poor air quality. These impacts are not distributed equally due to institutional systems such as city planning, transportation infrastructure, and policies that have led to disparities in pollution. In addition, air pollution is more often going to affect populations with higher rates of heart and lung disease, which are often BIPOC and American Indians, older adults, children with asthma, and people in poverty. When this report was released, 19 air alerts were issued in 2023, breaking the previous record of 13 air alerts in 2021. Those air alert days can severely impact people living with asthma and are more impacted the closer they live to busy roads as shown in this map, most visits to the emergency department for Asthma are in the metropolitan area in the dark blue areas. In Minnesota, one in 24 children (4.2%), 269 in 2020 and one in 11 adults (8.8%) in 2021 had active asthma. Overall, the rate of asthma in Minnesota is low. However, people who identify as American Indian, Black, and as multiracial non-Hispanic are consistently more likely to have asthma than white people in Minnesota.

Slide 7: Many indoor air pollutants impact our health, such as asbestos, carbon monoxide, dust mites, formaldehyde, lead, dust, mold, fine particles, radon, commercial tobacco smoke, and volatile organic compounds. Radon and dust mites are pollutants or allergens that occur indoors naturally. At the same time, other fumes from gas stoves, smoking, incense, or air fresheners are a product of human activities in the indoor environment that pollute our air. We benefit from homes, schools, and workplaces built with radon mitigation, adequate ventilation, and plenty of natural lighting.

Slide 8: Having access to clean water is important to the quality of life for humans and wildlife. MN has thousands of lakes, rivers, streams, etc. Water is important for systems to stay healthy and for us to have access to drinking water and recreation without concern for contamination, which is a large threat. As seen in the image, 1.1 million people rely on private wells. They are responsible for testing and maintaining them, meaning that a portion of MN's population took their water quality into their own hands. Threats to water quality such as nitrogen, lead, per-and polufluoalkyl substances, and arsenic have negative health outcomes for humans and wildlife.

Slide 9: Minnesota has many natural strengths that can help to improve help with access to recreation. Our climate and air quality have impacts on many aspects of our health. When the COVID-19 pandemic happened, the environment had positive and negative impacts. Since many people were forced to stay home from school and work if possible, there were immediate positive impacts on air quality, noise levels, and water pollution worldwide; even birds were affected when noise levels decreased—for those with higher incomes, many of them increased outdoor recreation during the pandemic, whereas lower-income populations had decreased outdoor recreation. The pandemic caused increased medical waste, including haphazard use and disposal of disinfectants, masks, and gloves. Unfortunately, most of these positive changes disappeared once people returned to work and school, and events started happening again. How did the pandemic impact the amount of time you spent outside? Was it more or less than usual?

For any additional questions ask:

Dr. Susi Keefe (MPH Director) email: slkeefe162@stkate.edu
Audrey Hanson, MPH (SHA Project Manager) email: Audrey.Hanson@state.mn.us
Kaitlin Corey (MPH student) email: kncorey484@stkate.edu