DIRECT FROM CDC ENVIRONMENTAL HEALTH SERVICES

Shine a Light on Environmental Justice Issues With the Environmental Justice Dashboard

Jena Losch, MPH

Editor's Note: The National Environmental Health Association strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature this column on environmental health services from the Centers for Disease Control and Prevention (CDC) in every issue of the *Journal*.

In these columns, authors from CDC's Water, Food, and Environmental Health Services Branch, as well as guest authors, will share tools, resources, and guidance for environmental health practitioners. The conclusions in these columns are those of the author(s) and do not necessarily represent the official position of CDC.

Jena Losch is a public health advisor at the CDC Environmental Public Health Tracking Program, part of National Center for Environmental Health. She has more than 10 years of experience working in environmental health and has special interest in health communication, improving access to health and environmental data, and improving data literacy.

Working Toward Environmental Justice Through Improved Access to Data

Some communities are facing environmental injustice—disproportionate burdens from environmental exposures, damaging land uses, psychosocial stressors, and historical and structural racism—that can be linked to short- and long-term health disparities. These communities are often composed of people from racial and ethnic minority groups and from communities with lower access to resources.

Environmental justice can be achieved when everyone has the same degree of protection from environmental and health hazards and equal representation in the decision-making process to have a healthy environment. An important step toward achieving environmental justice is improving access to data and information that can be understood and used by communities facing environmental injustice and used by decision makers, environmental health practitioners, and health officials to identify and address environmental injustices.

A major part of achieving environmental justice is valuing, elevating, and amplifying the stories and lived experiences of people living in communities that face environmental injustices—the *qualitative* side to environmental justice. The Environmental Justice (EJ) Dashboard from the Centers for Disease Control and Prevention (CDC) is an important tool that looks at the *quantitative* side to environmental justice—using data to shine a light on injustices, make decisions, and be a foundation for community narratives and environmental justice initiatives and actions.

Environmental Justice Dashboard Delivers Data for Your Community

The EJ Dashboard allows users to enter their ZIP Code or county and obtain personalized data on environmental exposures, community characteristics, and health burden information (Figure 1). All of these topics are important factors in understanding and addressing environmental justice issues in a community.

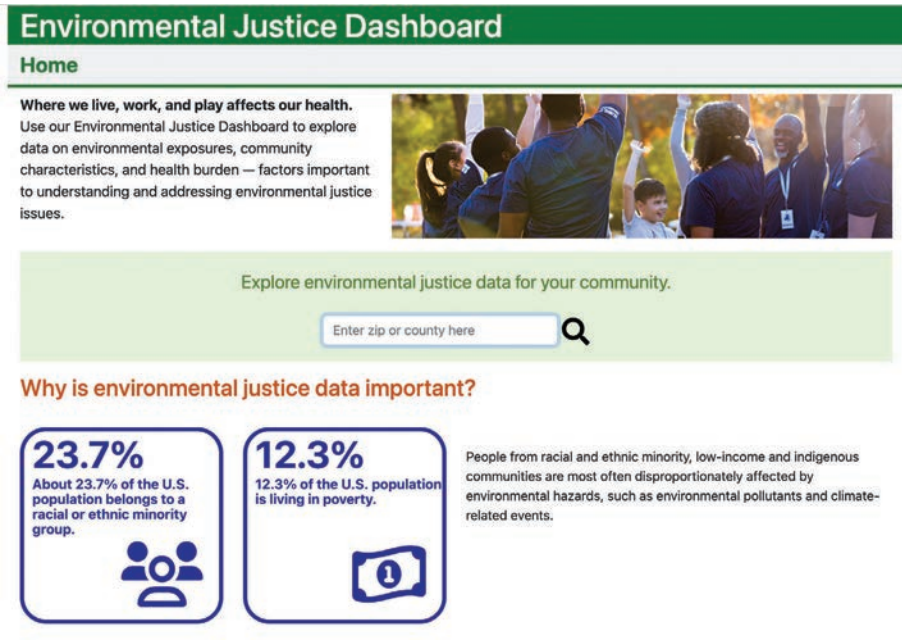
The EJ Dashboard is unique from other data tools because it considers health literacy and incorporates climate change and health outcome data. The bite, snack, meal approach to health communication was used to design the EJ Dashboard. It has easy to digest infographics (bites), alongside maps and contextual information (snacks), that can lead to further research or use of more advanced tools (meals), such as the CDC Data Explorer (Figure 2). This method helps prevent information overload and it gets the right portion of information to the people who need it.

Using the Environmental Justice Dashboard to Shine a Light on Environmental Justice

The EJ Dashboard is a useful tool to identify community vulnerabilities, such as higher risk for adverse effects of climate change. The information can help inform city and state planning and better allocate resources and efforts to address those vulnerabilities. This information is important when preparing for potential natural disasters such as droughts, hurricanes, and floods. You can view data on

FIGURE **1**

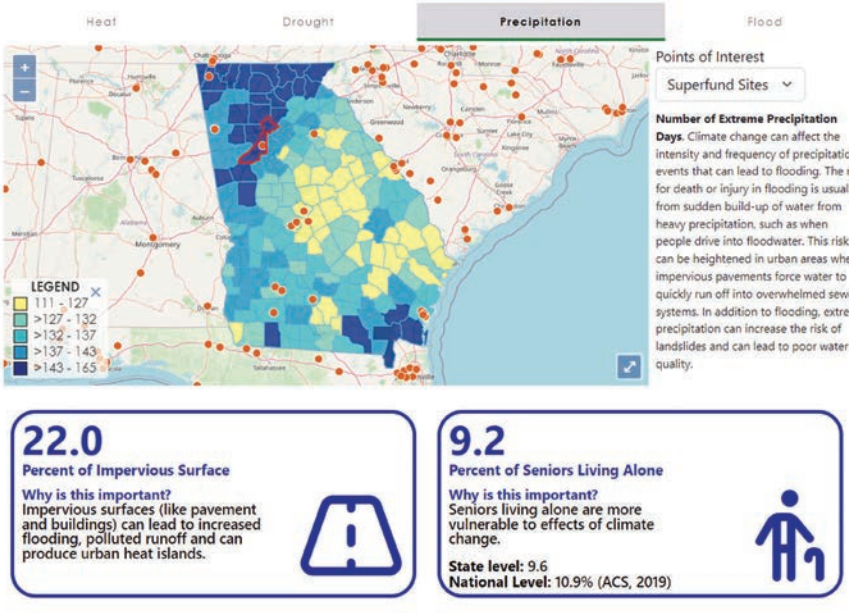
Screenshot of the Environmental Justice Dashboard Home Page



Note: Users can enter their ZIP Code or county into the dashboard to get personalized data related to environmental justice issues in their communities.

FIGURE **2**

Example of Maps and Infographics Found on the Environmental Justice Dashboard



Note: Users can view mapped data alongside infographics and contextual information important to environmental justice.

Resources From the Centers for Disease Control and Prevention

- Environmental Justice Dashboard: https://ephtracking.cdc.gov/Applications/ejdashboard
- Data Explorer: https://ephtracking.cdc.gov/DataExplorer
- National Environmental Public Health Tracking Network: https://ephtracking.cdc.gov

the EJ Dashboard around areas of increased precipitation and flooding, alongside data about impervious (paved) surfaces. Precipitation in areas with highly impervious surfaces can overwhelm sewer systems, which can lead to flooding and potential pollution in drinking water. These data also can be used to better plan city roads and drainage systems in the future.

You can also use the EJ Dashboard to inform health policy change. Community stories are compelling and important to share for others to understand the lived experiences of people who live in communities that face environmental injustices. Many organizations, however, also need to supplement their stories with quantitative data. You can use data on the EJ Dashboard to apply for a state or community grant, such as funding for a new park. Data on access to parks, adults reporting "not good" mental health days, and impervious surfaces, for example, can be helpful in writing your grant narrative.

You might also discover information on the EJ Dashboard that you would like to further research. For example, by exploring the EJ Dashboard, you might discover interesting trends in $PM_{2.5}$ (outdoor particles associated with air pollution) and asthma in your area. You might ask, "Are there clusters of high $PM_{2.5}$ concentration in the same areas where there is a high percent of adults with asthma?" You can also look at other data, such as proximity to parks and other social determinants of health, in your research. All data on the EJ Dashboard are available on the CDC Data Explorer for download and further exploration.

continued on page 32

and trust in the risk communicator and the risk assessment process. Someone who has already had cancer may have less tolerance for an increased lifetime cancer risk than someone who has never experienced cancer. Someone who has had food poisoning may be more outraged by the sanitation failures in a school or hospital kitchen than someone who has not.

It is critical for a risk communicator to be aware of these types of issues when preparing risk communication messages to avoid creating or fueling outrage. The COVID-19 pandemic has certainly taught us lessons about the effects of risk perception on compliance with risk mitigations measures, such as masking or getting vaccinated, even when the risk communication is effective.

Risk Management

Risk management is the process of weighing policy alternatives and selecting the most appropriate action by integrating the results of risk assessment with engineering data in addition to social, economic, and political concerns to reach a decision. In some cases, and in some situations, environmental health professionals might also be risk managers. Risk management involves evaluating data from the risk assessment and determining the best approach to address a hazard or exposure issue, taking into account the physical and societal environment in which the hazard exists.

Summary

Our job in dealing with any risk to human life, health, or safety comes down to these basic steps:

- Recognize and understand the risk
- Understand who is at risk
- Characterize the risk
- Consider the alternatives
- Consider protective measures
- Communicate the risk
- ACT!

Contact: toolkit@sanitarian.com.

▸ **INTERNATIONAL PERSPECTIVES / SPECIAL REPORT** *continued from page 23*

References

Barrett, E., Barnes, S., & Pogreba-Brown, K. (2018). An experiential learning exercise in food-borne illness outbreak investigations: Bridging education and experience. *Pedagogy in Health Promotion, 4*(1), 43–51. https://doi.org/10.1177/2373379917700440

Burckhardt, F., & Kissling, E. (2020). Training for foodborne outbreak investigations by using structured learning experience. *Emerging Infectious Diseases, 26*(1), 162–164. https://doi.org/10.3201/eid2601.190755

Centers for Disease Control and Prevention. (2019). *Epidemiologic case studies*. https://www.cdc.gov/training/epicasestudies/index.html

Cremin, I., Watson, O., Heffernan, A., Imai, N., Ahmed, N., Bivegete, S., Kimani, T., Kyriacou, D., Mahadevan, P., Mustafa, R., Pagoni, P., Sophiea, M., Whittaker, C., Beacroft, L., Riley, S., & Fisher, M.C. (2018). An infectious way to teach students about outbreaks. *Epidemics, 23*, 42–48. https://doi.org/10.1016/j.epidem.2017.12.002

Dicker, R.C. (2017). Case studies in applied epidemiology. *The Pan African Medical Journal, 27*(Suppl. 1), 1–2. https://doi.org/10.11604/pamj.supp.2017.27.1.12886

Nelson, A.L., Bradley, L., & MacDonald, P.D.M. (2018). Designing an interactive field epidemiology case study training for public health practitioners. *Frontiers in Public Health, 6*, Article 275. https://doi.org/10.3389/fpubh.2018.00275

University of Otago. (2020). *Responding to a mystery epidemic in the Pacific: Public health summer school 2020 symposium session*. https://www.otago.ac.nz/wellington/otago730073.pdf

White, A.E., Sabourin, K.R., & Scallan, E. (2018). The foodborne outbreak challenge—Using experiential learning to foster interdisciplinary training among students on foodborne disease outbreak investigations. *Journal of Food Science Education, 17*(2), 60–65. https://doi.org/10.1111/1541-4329.12132

▸ **DIRECT FROM CDC** ENVIRONMENTAL HEALTH SERVICES *continued from page 29*

Get Involved

The EJ Dashboard from CDC can be used in various ways to inform decision making, help with education, support studies, and even help change policy. How will you use the EJ Dashboard to help supplement environmental justice stories in your environmental health work?

Do you work with national-level data sets that would be good to include on the EJ Dashboard? Let the EJ Dashboard team know at trackingsupport@cdc.gov.

Corresponding Author: Jena Losch, Public Health Advisor, National Center for Environmental Health, Centers for Disease Control and Prevention. Email: jlosch@cdc.gov.