

Data-informed care can help offset climate change-related health risks

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As more people suffer from heat domes, wildfires, floods and other extreme climate events, a team of Oregon Health & Science University physicians are urging their colleagues to use data to address climate

change's many health impacts.

"Climate change is the biggest threat to our health—now, and in the future," said Jennifer E. DeVoe, M.D., a professor of family medicine in the OHSU School of Medicine and first author of a commentary published in the *Journal of Primary Care & Community Health* that describes the new approach. "Physicians have a responsibility to help our patients manage and prevent climate-related health issues."

DeVoe and colleagues are advocating for primary care teams to use a data-driven approach to help prevent and mitigate the adverse health impacts of [climate change](#), which they've dubbed "precision ecologic medicine."

"Precision medicine is becoming increasingly common as [genomic data](#) is used by medical specialists to treat cancer and other diseases," explained the commentary's senior author, Leah Werner, M.D., an assistant professor of family medicine in the OHSU School of Medicine. "Such individualized health care should also extend to primary care, and be applied to something that threatens everyone's health—climate change."

This new commentary builds on their [2016 proposal](#) to inform care with "community vital signs," or localized data that's related to nonmedical factors that affect health, which are also known as social determinants of health. They are now applying that concept to climate-related health issues by adding actionable data about climate risks.

For example, geographic information system data, known as GIS data, currently exist to identify which neighborhoods have fewer trees and are more profoundly impacted by [heat waves](#), or which areas have lower elevations and are at greater risk for flooding. Such information can be brought into electronic health records, where patient-specific data

already resides.

Relevant patient data include residential or work location, race and ethnicity, income, health conditions and more. When patient data are combined with climate-related data, the combined information can predict who is most likely to experience worsening health due to [extreme weather](#) and help direct support for patients with substantial climate health risks.

"We have a particular responsibility to help patients who have historically been disadvantaged and medically underserved, because they have the greatest health risks associated with climate change," DeVoe said.

Primary care teams could use these data to check on patients during a short-term climate event—for example, a wave of extreme heat—as well as to proactively prepare their more vulnerable patients beforehand. Proactive support might include prescribing air conditioners or heat pumps to those with health issues that make them more sensitive to temperature extremes, or connecting patients with [community organizations](#) that provide non-medical services such as housing assistance.

Public health leaders have traditionally used nonmedical data as part of their efforts to understand how climate change endangers health from a community-wide perspective. Now DeVoe, Werner and colleagues say data should inform individual patient care and be used by [primary care](#) teams, whom patients often trust because they have built relationships with them over time.

To put precision ecologic medicine into actual medical practice, OHSU's Department of Family Medicine has established a program focused on climate change and health. Many OHSU faculty are collaborating with

earth scientists, state health leaders and other academic institutions to explore how to make their concept actionable for clinicians.

More information: Jennifer E. DeVoe et al, Precision Ecologic Medicine: Tailoring Care to Mitigate Impacts of Climate Change, *Journal of Primary Care & Community Health* (2023). [DOI: 10.1177/21501319231170585](https://doi.org/10.1177/21501319231170585)

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