Climate Change Will Give Rise to More Cancers

A study by the University of California San Francisco focuses on the global impact of climate change for major cancers.

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Climate change will bring an acute toll worldwide, with rising temperatures, wildfires and poor air quality, accompanied by higher rates of cancer, especially lung, skin and gastrointestinal cancers, according to a new report from UC San Francisco.

In an analysis of nearly five dozen published scientific papers, the researchers provided a synopsis of future effects from global warming on major cancers, from environmental toxins to ultraviolet radiation, air pollution, infectious agents and disruptions in the food and water supply.

Ultimately, the most profound challenge to the global cancer picture could come from the disruption of the complex health care systems required for cancer diagnosis, treatment, and care, the authors wrote. The review appears in The Lancet Oncology.

“In the worldwide battle to mitigate climate change, the international community is not on track to slow emissions of greenhouses gases,” said lead author Robert A. Hiatt, MD, PhD, UCSF professor of Epidemiology and Biostatistics, and associate director for population science at the UCSF Helen Diller Family Comprehensive Cancer Center. “2015-2019 were the five warmest years on record, and 2020 has seen tremendous climate impacts, from wildfires to hurricanes.”

The impacts of climate change on health are large and are expected to continue growing without rapid action. High temperatures, poor air quality and wildfires cause higher rates of respiratory and cardiovascular diseases. Warmer temperatures and changing rainfall patterns raise the risk and spread of vector-borne disease, such as malaria and dengue. “Extreme weather events cause death, injury, displacement, and disrupt health-care delivery,” the authors wrote.

Cancer is widely predicted to be the leading cause of death in the 21st century. Worldwide, there were 24.5 million new cases of cancer and 9.6 million deaths in 2017, a striking increase from 2008 with 12.7 million cases and 7.6 million deaths.

The authors said the biggest cancer threats are likely to be from air pollution, exposure to ultraviolent radiation and industrial toxins, and disruptions in food and water supply. Lung cancer,

already the primary cause of cancer deaths worldwide, is expected to increase as a result of escalating exposure to particulate matter in air pollution, estimated to be responsible for as much as 15 percent of new cases.

While the overall effects of climate change on nutrition-related cancers are difficult to determine, the authors said, one comprehensive modeling study predicted more than half a million climate-related deaths worldwide, including cancer deaths, as a result of changes in food supply by 2050, such as reduced consumption of fruits and vegetables.

Climate change is already exacerbating social and economic inequities, leading to higher rates of migration and poverty. The authors note that poor people and communities of color are disproportionately affected by cancer and have a higher cancer mortality. World Bank estimates that climate change will push 100 million people globally back into poverty by 2030.

Major disruptions are also expected to take place in the infrastructure of health care systems for cancer control, which could affect all cancers. The COVID-19 pandemic has provided a clear example of this disruption, shifting medical resources away from cancer and causing thousands of patients to delay cancer screenings out of fear of contracting the virus.

“Extreme weather events such as storms and flooding can destroy or damage health-care infrastructure, reducing health care quality and availability,” said the authors. These events also interrupt service delivery by causing power shortages, disrupting supply chains, transportation, and communication, and resulting in staff shortages. Ironically, COVID-19 also revealed a ray of hope in reversing the damage.

“The early pandemic response resulted in a striking reduction in air pollution,” Hiatt said, “showing the potential of extreme measures to result in rapid environmental change.”

It could take decades to fully understand the impact of climate change on cancer, given a sometimes lengthy delay from exposure to clinical diagnosis. But the authors said that shouldn’t prevent acting now, as the harmful impacts from air pollution and other climate risks will continue to grow during that time.

“There is a lot we can be doing to mitigate climate change and to mitigate the impact on cancer,” said co-author Naomi Beyeler, MPH, co-director of the Evidence to Policy Initiative and Lead for Climate and Health at the UCSF Institute for Global Health Sciences. “We should be doing both, and we should be doing both with urgency.”

By reducing pollution, deaths from lung cancer could decline, the authors said, and there are numerous clinical, behavioral, and policy solutions to slow climate change, and prevent cancer cases and deaths.

“The COVID-19 pandemic has shown us the importance of science and public health,” said Beyeler, “and we have seen over the past months that as a global health community, we are able to mobilize the investments, research, and collective action needed to solve health problems on a

global scale. Now is the time to apply this ambition to tackling the climate crisis.”

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