

Study shows the health impact of climate change is not adequately recorded

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A Monash University-led study has proposed a solution for the urgent need to capture real-time data on the impact of climate change-related

events on human health, health care workforces, and health care systems at the point of care.

As the global community faces growing climate challenges, the study calls for action, collaboration, and innovation to safeguard [human health](#) and well-being in the face of environmental crises.

Published in the *Journal of the American Medical Informatics Association*, the study highlighted key climate and natural disaster-related concepts, such as heat wave and drought, that need to be integrated in standardized medical terminology.

Monash University Nursing and Midwifery Associate Professor Zerina Lokmic-Tomkins led the project with an international group of researchers.

"Climate change, a critical risk driver of natural disasters, is rapidly jeopardizing global environmental sustainability, planetary health, [population health](#), and [sustainable development goals](#)," Associate Professor Lokmic-Tomkins said.

"Our research indicates that current clinical terminologies lack the necessary depth to capture the full range of hazards associated with [climate change](#), particularly those linked to environmental and meteorological factors.

"This gap hinders our ability to genuinely understand the extent of the impact of climate-related natural disasters on human health, but also how we plan to deliver effective health care during disasters, and plan interventions to support health care systems in times of crisis."

The study highlighted the need for comprehensive clinical terminologies to capture climate-driven disaster and hazard-related events that impact

human health and the provision of sustainable health care services across preparation, response and recovery associated with these events.

It mapped the United Nations Office for Disaster Risk Reduction-International Science Council (UNDRR-ISC)'s Hazard Information Profiles (HIP) to SNOMED CT International, a widely used clinical terminology for electronic health records.

The resulting paper called for global collaboration to expand SNOMED CT International to include unique geographical and regional hazard contexts disproportionately experienced in countries most affected by climate change.

"By including diverse perspectives and contributions globally, the clinical terminology can better reflect global health needs and improve disaster preparedness and response efforts," Associate Professor Lokmic-Tomkins said.

"This means capturing hazards linked to meteorological clusters, such as [heat waves](#) and droughts, which have significant impact on human health across the lifespan.

"Enhancing globally agreed terminology would enable clinicians, public health officials, and health informaticians to manage vast volumes of clinical data, and retrieve, analyze, and contextualize it to specific climate-related situations.

"This data can be utilized to develop evidence-based interventions, predict future impacts more precisely, and support informed decision-making by policymakers and government leaders for climate change mitigation and adaptation strategies."

The work uncovered gaps in clinical terminologies available to health

care professionals during disaster-related events. Notably, hazards related to meteorological, hydrological, extraterrestrial, geohazard, environmental, technological, and societal factors were poorly mapped.

Associate Professor Lokmic-Tomkins said one of the most concerning findings was the absence of hazards such as '[heat wave](#)' and 'drought' in SNOMED CT International.

"These phenomena have intensified due to climate change and have significant impacts on human health, migration patterns, and armed conflict situations globally," she said. "Correcting this deficit in SNOMED CT is crucial to capturing these events as causative factors of health-related issues."

The study also highlights inequities in global health information systems infrastructure, particularly in areas where health systems lack the capacity to use standardized terminologies. This data gap further exacerbates challenges in providing basic care for vulnerable populations in resource-limited settings, hindering sustainable [health](#) care efforts.

"Our work is just beginning," Associate Professor Lokmic-Tomkins said. "By addressing these challenges and expanding clinical terminologies, we can help develop resilient [health care](#) and community systems that can effectively cope with the increasing frequency and intensity of [climate](#) change-related disasters."

More information: Zerina Lokmic-Tomkins et al, Evaluating the representation of disaster hazards in SNOMED CT: gaps and opportunities, *Journal of the American Medical Informatics Association* (2023). [DOI: 10.1093/jamia/ocad153](https://doi.org/10.1093/jamia/ocad153)

Provided by Monash University

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