

The problem is bigger than we thought: summary of the 2024 report of the Lancet Countdown

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Dear Editor,

We present a summary of the recently published 2024 report of the *Lancet* Countdown on health and climate change, which is of great interest to everyone involved in the health sector. The statements are alarming, and urgent action is needed to prevent a catastrophe.

Despite the initial hope inspired by the 2015 Paris Agreement, the world is now dangerously close to surpassing the 1.5 °C multi-year mean global warming limit. In 2023, annual average surface temperatures reached a record 1.45 °C above the pre-industrial baseline, with new highs being recorded throughout 2024.

The resulting climate extremes are claiming more and more lives and are destroying livelihoods around the world. The *Lancet* Countdown: tracking progress on health and climate change was established the same year the Paris Agreement came into force in an effort to monitor the health impact and opportunities created by the global response to this historic agreement. The Countdown has brought more than 300 multidisciplinary researchers and health professionals from around the world together to take stock of the evolving relationships between health and climate change at global, regional, and national levels.

The 2024 *Lancet* Countdown report, drawing on the expertise of 122 leading researchers from United Nations agencies and academic institutions around the world, revealed the most worrying findings yet in its 8 years of monitoring.¹

The record human costs of climate change

According to this year's report, people around the world are facing record threats to their well-being, health, and survival due to rapid climate change. Of the 15 indicators that monitor the risks, exposure, and health impact of climate change, 10 reached new highs.

Three new indicators offer an increasingly comprehensive picture, measuring exposure to extreme

precipitation, desert dust, and the effect of rising nighttime temperatures on sleep loss.

Heat-related mortality among people over 65 years of age increased by a record 167% compared with the 1990s, 102 points above the 65% that would have been expected without the temperature increase (indicator 1.1.5). Heat exposure is increasingly affecting physical activity and sleep quality, which affect both physical and mental health. In 2023, heat exposure put people involved in outdoor activity at risk of heat stress (moderate or high) for a record 27.7% more hours than the average during the 1990s (indicator 1.1.2), and it also led to a record 6% more hours of sleep lost in 2023 than the 1986-2005 average (indicator 1.1.4).

People around the world are also increasingly at risk from life-threatening extreme weather events. In comparison to the 1961–1990 period, between 2014 and 2023 the number of days of extreme precipitation increased in 61% of the global land area (indicator 1.2.3), which increased the risk of flooding, the spread of infectious diseases, and water contamination. In parallel, 48% of the global land area was affected by at least 1 month of extreme drought in 2023, the second largest area affected since 1951 (indicator 1.2.2). The increase in drought events and heatwaves since the 1981-2010 period was associated moderate or severe food insecurity for 151 million more people from 124 assessed countries in 2022, the highest figure on record (indicator 1.4.2).

Warmer and drier weather conditions increasingly favor the occurrence of sand and dust storms. This climate-environmental phenomenon contributed to a 31% increase in the number of people exposed to dangerously high concentrations of particulate matter between the 2003-2007 and 2018-2022 periods (indicator 1.2.4).

Meanwhile, changing precipitation patterns and rising temperatures favor the transmission of deadly infectious diseases, such as dengue, malaria, West Nile virus and vibriosis, which put people at risk of transmission in previously unaffected areas (indicators 1.3.1-1.3.4).

Compounding these impacts, climate change is disrupting the social and economic conditions on which health and well-being depend. The average annual losses from extreme climate events increased by 23% between 2010–2014 and 2019–2023, reaching USD 227 billion – a figure that exceeds the gross domestic product of about 60% of the world's economies (indicator 4.1.1).

Although 60.5% of losses in countries with a very high human development index (HDI) were covered by insurance, in most countries with lower HDI levels the

burden of physical and economic losses were imposed on local communities due to lack of insurance (indicator 4.1.1).

Extreme weather and climate change-related health impacts are also affecting labor productivity, with heat exposure responsible for a record loss of 512 billion potential working hours in 2023, at a potential cost of USD 835 billion in lost income (indicators 1.1.3 and 4.1.3). Countries with low and medium HDI were most affected by these losses, which amounted to 7.6% and 4.4% of the gross domestic product, respectively (indicator 4.1.3). With poor communities being hit hardest, these economic impacts further reduce their ability to cope with and recover from the increasing effects of climate change, thereby amplifying global inequality.

Worryingly, the multiple hazards revealed by individual indicators are likely to have simultaneous, compounding, and cascading impacts on the complex, interconnected human systems that underpin good health, disproportionately threatening health and survival with every fraction of a degree increase in mean global temperature.

Despite years of monitoring the looming threats of climate inaction, the health risks people face have been exacerbated by years of adaptation delay, which have left people poorly protected from the growing threats of climate change. Only 61% of countries in the Alliance for Transformative Action on Climate and Health have conducted a vulnerability and adaptation assessment (indicator 2.1.1). Only 52% have National Health Adaptation Plans (indicator 2.1.2), and cities in countries with low and medium HDI are lagging behind in assessing their climate change and health risks (indicator 2.1.3).

Only 68% of countries reported high or very high implementation of legally mandated health emergency management capacities in 2023, of which only 11% were low HDI countries (indicator 2.2.5). Furthermore, only 35% of countries reported having early health warning systems for heat-related illnesses, while only 10% did so for mental and psychosocial conditions (indicator 2.2.1).

A lack of financial resources was identified as a key barrier to adaptation, with 50% of cities reporting that they do not plan to conduct climate change and health risk assessments (indicator 2.1.3).

These delays limit the ability to implement effective, evidence-based health adaptation policies. Some effective adaptation measures are underutilized, including nature-based solutions (panel 4), such as urban green spaces (indicator 2.2.3).

The lack of intersectoral collaboration, especially between meteorological and health institutions (indicator 2.2.1), further hampers adaptation efforts.

The unequal distribution of financial resources and technical capacity and the lack of universal health coverage in most countries, combined with a lack of financial support for health systems so that they can protect people from the growing climate-related health risks, leaving the most vulnerable populations even more unprotected.

The world is on track to reach 2.7 °C of warming by 2100, with 11 adaptation thresholds being increasingly close (panel 5). Sustained mitigation efforts would not only avoid the most catastrophic impacts of climate change but also prevent multiple health hazards from fossil fuel use (panel 6). The transition to clean energy sources could prevent at least 2.3 million deaths annually through reduced indoor air pollution, as well as prevent 3.3 million deaths through reduced outdoor fossil fuel-derived air pollution (indicators 3.2.1 and 3.2.2).

Mitigation efforts in the agricultural sector could save an additional EUR 11.2 million annually through healthier, plant-based diets (indicator 3.3.2) and a people-centered transformation could lead to healthier cities and lifestyles.

However, despite some progress in the renewable energy sector, many key indicators show that the world is moving farther from meeting the goals of the Paris Agreement, with many countries showing regression in the most recent data. The carbon-intense energy system has remained broadly unchanged, and energy-related emissions were set to reach an all-time high in 2023 (indicator 3.1.1), with agricultural emissions growing by 2.8% since 2016.

Health sector emissions increased by 10% between 2020 and 2021 (indicator 3.5). The delay in action shows that most countries are woefully unprepared for a healthy, net-zero greenhouse gas emissions future, with people in low- and middle-income countries most at risk (indicator 4.2.4).

Fossil fuel dependence increasingly threatens national economies, with projected losses from coal-based power of USD 164.5 billion between 2025 and 2034 (indicator 4.2.3). Meanwhile, most disadvantaged countries lag behind in clean and renewable energy and remain exposed to the ravages of energy poverty (indicators 3.1.1 and 3.1.2).

Governments and companies around the world are compounding these risks. Fueled by record profits, oil and gas giants have expanded their production plans and, as of March 2024, were on track to exceed their

1.5 °C emissions target by 189% in 2040, up 16% from the previous year (indicator 4.2.2).

Furthermore, despite soaring energy prices and continued dependence on fossil fuel, governments allocated a record USD 1.4 trillion to fossil fuel subsidies in 2022 (indicator 4.3.3), dwarfing any commitment to climate action made at the 2023 Dubai Climate Summit.

There is growing engagement among individuals, businesses, scientists, and international organizations in climate change and health (indicators 5.2, 5.3.1, 5.3.2, 5.4.2), which raises hope that a healthy and prosperous future may still be within reach. However, avoiding a catastrophic increase in mortality, disease, and destruction will require urgent, decisive, health-focused initiatives that demonstrate the potential to provide a prosperous and healthy future for all.

For more detailed information about the 2024 Lancet Countdown report, we recommend reading the full article.¹

References

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