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Editorial

# The role of physicians in post-Ditwah planetary health

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Sri Lanka is on the receiving end of the Earth system's response to climate change, ranking among the top 10 countries at risk of extreme weather events, according to the Global Climate Risk Index.[1] Recent Cyclone Ditwah was a wake-up call for us, with over 800 confirmed dead or missing, approximately 2.3 million affected, and an estimated cost of Rs 21,026.73 million for the recovery of the health sector.[2] We must contemplate the broad issues related to the profound alterations we are causing to this planet. The following sections outline the fundamental concepts for understanding our predicament as humans and encourage us to reflect on our individual actions and our broader role as a profession.

## Basic fact: Human health is inextricably linked to the health of the planet

The environmental phenomena caused by extreme weather events such as cyclones, landslides, droughts and floods are not merely isolated events but the result of global systems going astray. Like the human body, the Earth and its atmosphere function as a single, interconnected system. Within this Earth system, water masses, the atmosphere, land, animals, plants, and microbes all exist in a complex relationship with one another. For millions of years, we have lived as an integral part of this massive web of life.

This concept is well captured by the Gaia hypothesis, proposed in the 1970s, which states that Earth's living organisms, atmosphere, oceans, and land function as a self-regulating complex system.[3] It is conceptualised as operating in a manner analogous to a single organism, maintaining stable, life-sustaining conditions – such as consistent temperatures and atmospheric composition – through processes of homeostasis. This modern view resonates with indigenous concepts such as Mother Earth and the Sarva Satva concept proposed by a team in the Faculty of Medicine Colombo.[4]

## Impact of human activities on planetary health

Over the past several decades, however, a major shift has occurred: human activity has fundamentally altered the Earth and its natural processes, creating a new geological era referred to as the Anthropocene.[5] Instead of living in harmony with nature, human activities have profoundly changed the environment, and this degradation is rapidly reaching crisis levels. This is characterised by a rapid and exponential increase in human activities such as population growth, economic activities and consumption of resources, which happened after 1950 – described as the Great Acceleration.[6]

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## Planetary boundaries

Scientists have closely examined the essential components of this broader Earth system that have been most severely impacted by human activity and have quantified the environmental consequences of the surge of human activities. This led to defining the following nine "planetary boundaries" within which humanity must operate to avoid destabilising the Earth system.[7]

1. Climate change, mainly increasing global temperatures, melting polar ice caps, rise in sea levels, and weather changes. It affects the poor and vulnerable groups disproportionately
2. Environmental pollution by novel entities such as plastics, organic pollutants, and pesticides
3. Stratospheric ozone depletion increasing the intensity of UV radiation
4. Loss of biosphere integrity and biodiversity leading to extinction of species
5. Industrial acids causing loss of coral, shellfish and plankton leading to reductions in fish stocks
6. Increase in freshwater consumption with global warming causing scarcities in freshwater
7. Land system changes where land is converted to human use
8. Nitrogen and phosphorous flows to the biosphere and oceans
9. Atmospheric aerosol loading influencing the climate

Pushing past these boundaries could ultimately threaten our very existence and the survival of the human species. Ditwah was a manifestation of human activity that led to climate change and the crossing of a planetary boundary.

## Role of the health sector

The health sector is considered the fifth largest contributor to global carbon dioxide ($CO_2$) emissions. There are numerous pathways through which it contributes to $CO_2$ emissions and to other compounds and greenhouse gases (GHGs) that affect the ozone layer.[8] Hospital care (e.g. consultations, investigations, surgeries, medicine, food, equipment, etc.) accounts for 36%-44% of GHG emissions in developed countries. Other sources include electricity and gas used by healthcare services; pharmaceutical products including anaesthetic gases; transportation of patients, supplies and healthcare workers; ambulatory and nursing care; and primary and specialist care, to name a few. Any extra day in hospital, extra medication or investigation thus adds to unnecessary GHG emissions and worsens climate change.

The magnitude of the problem in Sri Lanka is highlighted in the 3rd Nationally Determined Contributions (NDC 3.0) of Sri Lanka to the United Nations Framework Convention on Climate Change. It presents a framework for climate action 2025-2036, including strategies for adaptation and mitigation in the health sector.[9] Achieving a sustainable health system requires clinical leadership, currently suboptimal due to insufficient knowledge and training. Clinicians can protect planetary health as a core part of professional practice by integrating novel concepts into quality improvement or management practices. Initial efforts to integrate sustainability into quality improvement teaching and training have been shown to transform learners' interest in quality improvement in the Sustainability in Quality Improvement approach. This describes a "sustainable value" and weighs health outcomes for patients and populations against environmental and social impacts of interventions. Environmental impacts include carbon emissions, resource use, and waste, while social impacts include effects on patients, families, staff, and communities, as well as economic costs.[10]

## A role for physicians: What else can we do as individuals?

Doctors, as highly trusted voices in the community, are in a unique position to tackle climate change and improve the health of the planet. Here are ten actions we can take as physicians, ranging from professional practice to advocacy, to tackle climate change.

**1. Clinical Practice**

Metered-dose inhalers contain hydrofluoroalkanes, which are potent greenhouse gases. Physicians could prescribe dry powder inhalers in clinically appropriate and acceptable situations.

**2. Advocacy**

Doctors could play an advocacy role in addressing climate change (e.g., when seeing patients with exacerbations of asthma or COPD, we can emphasise, *"your condition is more frequent and severe due to our changing climate and air pollution from vehicles"*).

Our personal choices can set an example for colleagues, staff, and patients. Walk, cycle, or use public transport when possible, and limit overseas travel. There is strength in numbers, and medical organisations have significant lobbying power. For example, the SLMA has an Expert Committee on Climate Change and Planetary Health.

**3. Education**

Integrate climate health into teaching and learning sessions for undergraduates or postgraduate trainees – discussing a patient with dengue could be an entry point to show how climate change affects disease patterns.

**4. Institutional change**

a. ***Improve efficiency of follow-up***: Think of simpler ways to repeat prescriptions in chronic diseases. Arrange several appointments on the same day to limit the number of visits for a patient's clinic visits. Encourage patients to use their local clinics and hospitals.
b. ***Expand telemedicine services:*** At least in the private sector where you have more control over the follow-up, encourage telephone consultations and longer intervals for routine follow-ups. Planned telemedicine is shown to reduce emissions without compromising clinical effectiveness.
c. ***Clinical waste:*** The healthcare sector is a major waste producer. Be a role model by setting an example in reducing, reusing, recycling, and segregating waste. Use reusable surgical instruments and linens where safe and feasible. Encourage labs to print reports sparingly, using multiple reports on a single sheet or issuing e-reports.
d. ***Climate and health:*** Work with the clinics and hospital to develop an emergency preparedness plan for heatwaves, floods, and landslides. Educate your most vulnerable patients (the elderly, those with chronic illnesses) on

having their own personal emergency plan. Be alerted to recognise early epidemics related to climate change: such as dengue, leptospirosis and imported malaria

e. ***Energy efficiency in workplace:*** Encourage energy audits, transitioning to LED lighting, the use of natural light, and renewable energy.

## Conclusion

Planetary health highlights the inextricable link between the health of the Earth and human well-being. Simply put, if planetary boundaries are exceeded and the planet's health deteriorates, it will inevitably compromise the health of all humans living on it.[11] Cyclone Ditwah was a turning point for us, from which we have to learn and act to prevent worsening consequences for the health of both living beings and the planet Earth. The health sector contributes significantly of GHG emissions and deterioration of planetary health. The medical profession has both an ethical responsibility and a unique opportunity to respond to this challenge. Physicians can contribute through clinical practice, advocacy, research, and leadership within healthcare systems to ensure the wellbeing of both humans and the natural environment. Thus, it is important that physicians become aware of planetary health, develop the desire and commitment, and take action to protect both the planet and people.

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