Source: *The Straits Times,* pA14
Date: 8 January 2025

Associate Professor Jason Lee, director of the NUS Yong Loo Lin School of Medicine's Heat Resilience and Performance Centre, speaking at the First Global Heat Health Information Network South-east Asia Heat Health Forum on Jan 7. ST PHOTO: JASON QUAH

NUS-based hub to build network that can respond to S-E Asia's heat challenges

Action by more than just the healthcare sector needed to tackle the crisis, expert says

Shabana Begum

A multidisciplinary regional hub based in Singapore aims to help communities across South-east Asia build resilience against rising temperatures.

It plans to grow a network that will involve a wide range of people such as academics and policymakers, as extreme heat in the region is a crisis that the healthcare sector cannot tackle alone.

Instead of relying solely on medical professionals to treat people after they come down with heat illnesses, more can be done upstream to prevent such illnesses in the first place, said Associate Professor Jason Lee, director of the NUS Yong Loo Lin School of Medicine's Heat Resilience and Performance Centre, on Jan 7.

Every heat death is preventable, and therefore solutions need to be tailored to specific groups, he said.

Unlike other climate impacts, such as tropical cyclones that leave a trail of destruction, heat is a silent killer, Prof Lee noted.

"Heat and humidity are not new to this part of the world. And this is also a key reason why for the longest time we haven't taken serious actions to counter it," he said, comparing local communities' inaction with a frog being slowly boiled alive in a pot of water.

Prof Lee was speaking at the First Global Heat Health Information Network (GHHIN) South-east Asia Heat Health Forum, being held in the Parkroyal on Beach Road from Jan 7 to 10.

The global network is an initiative of three bodies – the World Health Organisation, World Meteorological Organisation (WMO) and the US National Oceanic and Atmospheric Administration – to tackle the heat crisis.

It comprises researchers, humanitarian organisations, policymakers and weather experts.

In December 2023, Prof Lee's centre was designated its South-east Asia hub, the first of three planned regional hubs under the network. There are plans to form similar hubs in Latin America and South Asia.

The January conference marks the first time experts across the heat response chain – from humanitarian organisations to weather scientists and medical professionals – are convening under the network to discuss South-east Asia's heat challenges and potential solutions.

One of the hub's main aims is to coordinate the regional response to rising heat.

Scientists have declared 2024 the hottest year on record. According to the WMO, the first nine months of 2024 saw global average temperatures rise 1.54 deg C above pre-industrial levels.

Climate projections by the UN's climate science body, the Intergovernmental Panel on Climate Change, have indicated that it could get hotter if emissions continue to rise.

Communities in South-east Asia could bear the brunt of rising temperatures, owing to factors that worsen the heat experience, such as the region's high humidity and rapid urbanisation.

So it is vital that many parties do more to prevent people from succumbing to heat illnesses, noted Prof Lee.

For example, community members can be roped in to keep an eye on those among them who are more at risk of heat stroke, such as seniors, young children and those who are immobile.

Building and city designs that incorporate cooling features can also play a part in improving the heat resilience of a community. One possible way is laying out buildings to promote wind flow and maximise ventilation.

At the same time, policymakers in the region must understand the heat risks borne by different workers – from rural farm workers to blue-collar workers in the city – in order to protect worker safety.

Prof Lee's research has indicated that high temperatures can take a toll on worker productivity and increase the risk of accidents.

Overall, the regional hub's focus areas for heat research include heat at work and indoors and urban heat, as well as rising temperatures' impacts on fertility and children's health.

The network also wants to look into solutions that can protect people from heat illnesses, such as the roll-out of cooling centres or the development of early warning systems.

"Addressing heat health challenges is not the responsibility of any one individual or one sector alone. It is a collective duty that falls on each and every one of us," said Senior Minister of State for Sustainability and the Environment Koh Poh Koon at the opening of the forum.

The interdisciplinary collaboration that the hub hopes to achieve can help to create effective policies, Dr Koh added.

While climate change is causing global temperatures to rise, how each region experiences the heat differs.

In South-east Asia, high humidity prevents the body from optimally cooling down because sweat cannot evaporate well. This can cause people to feel chronically uncomfortable, especially those in lower-income groups who cannot afford air-conditioning.

"This exacerbates the physiological strain, leading to greater incidences of heat exhaustion and heatstroke compared with regions with lower humidity, posing a significant risk to outdoor workers and vulnerable groups," said NUS Medicine on Jan 7.

Global warming is also compounded by the region's rapid urbanisation, leading to the urban heat island effect, where cities are far hotter than rural areas. Many cities, especially informal housing zones, often lack the infrastructure to mitigate urban heat effectively.

In 2023 and 2024, many South-east Asian regions were affected by severe heatwaves during the hotter months between March and May.

Temperatures exceeded 40 deg C in places such as Thailand and Vietnam, and the Philippines grappled with a 15-day heatwave.

Singapore is not exempt.

A recent report found that the Republic experienced 122 extra days of dangerous heat in 2024, up from 93 in 2023, due to climate change. Malaysia had 111 such additional days.

South-east Asia's population is also increasingly ageing, and seniors are more vulnerable to heat-related illnesses due to their lower heat tolerance and pre-existing conditions such as heart disease.

The elderly need targeted interventions such as making cooling centres more accessible, enhancing public health messaging and developing community support networks. Community cooling centres are indoor spaces with facilities that help people cool down, such as air-con, water misting and cool water for drinking.

Prof Lee said: "Heat is a critical problem that can affect other problems. (Places in the region) have other issues like stunting due to malnutrition. Actually, heat suppresses eating. And this could be one of the things the hub could work on, not just to improve heat resilience, but potentially solve old problems."

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• The Straits Times is the media partner for the First GHHIN South-east Asia Heat Health Forum, held in Singapore from Jan 7 to 10, 2025.