1ST INSPIRE HEALTH FORUM

Parallel Session 43

Global Heat Health Information Network: The Unseen Impacts of Chronic Heat and the Critical Role of Health Data

13:15-14:30 PM Manila time
Thursday 10 July 2025
Auditorium 1

Enhancing Urban Heat Resilience in South Asia through Evidence-Based Interventions and Policy Integration

Data-informed Action Planning and Cooling Solutions

Innovation Core

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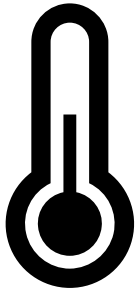
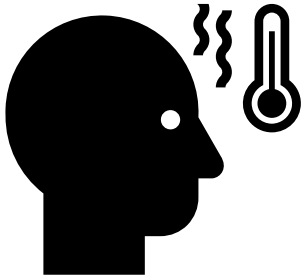
An Escalating Public Health Crisis



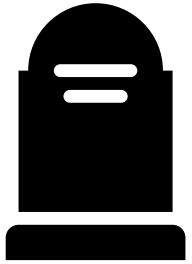
The Threat

- Heatwaves (HWs) are an escalating danger to public health in South Asia, particularly in dense urban areas



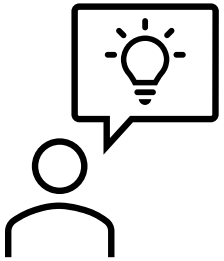
High Vulnerability

- These cities are burdened by existing **environmental and socioeconomic vulnerabilities**, intensifying the impact of extreme heat.



Devastating Consequences

- The 2015 heatwave resulted in over **1,200 deaths in Pakistan** and **2,500 in India**, prompting the creation of Heatwave Action Plans (HAPs).



Data-informed Action Planning

- The increasing frequency and intensity of heatwaves demand proactive, data-informed strategies to empower actions and protect communities.

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Knowledge Gaps

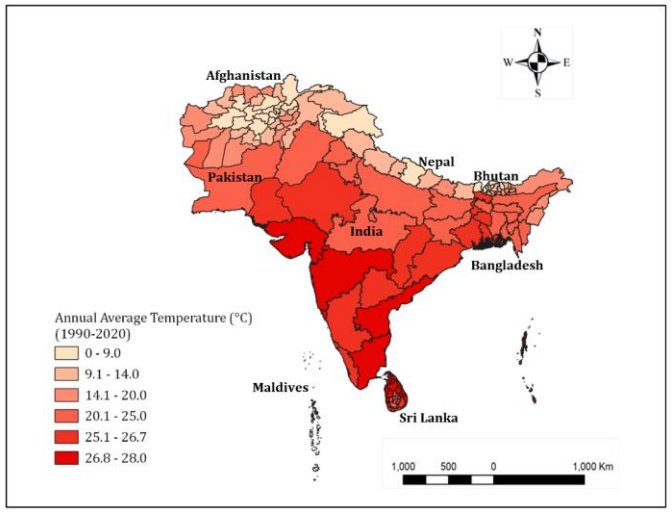

Figure 1: Map showing global South Asian countries with annual average temperature (°C) from 1900 to 2020

Why This Matters Now?

- There is an unprecedented rise in the South Asian population vulnerable to heatwaves.
- Existing Heatwaves Action Plans, developed after 2015 disaster, require strengthening with new evidence and strategies
- A critical, unmet need exists for developing pre-hospital care policies to boost heat resilience in urban settings.

Key Knowledge Gap We Will Address

- A significant lack of localized and context specific data on heatwaves.
- Absence of Heatwaves-associated health risk mapping within South Asia.
- Underused data has limited the potential for more proactive, evidence-based policymaking.

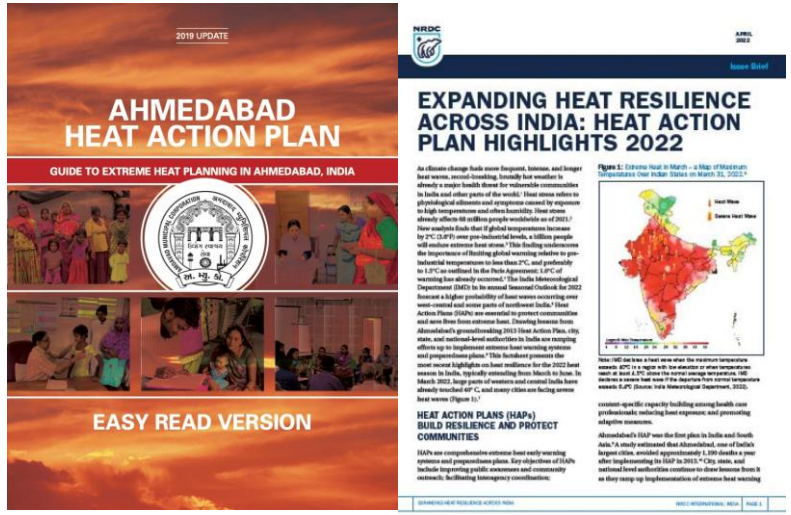

Figure 2: Ahmedabad Heat Action Plan 2018 and India Heat Action Plan Highlights 2022.

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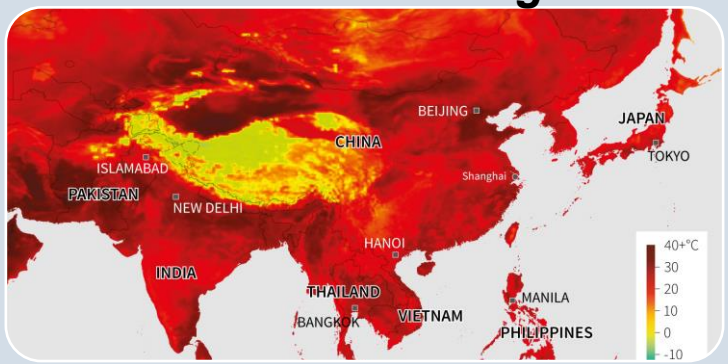
A Proposed Solution

Collecting and connecting local data to prevention and cooling solutions.



Aim 1: Map and Project Health Risks

- We will identify and map community-level Heat Wave-Risk Zones (HWZs) and project future health impacts using meteorological and epidemiological data.

Aim 2: Pilot a Novel Pre-Hospital Intervention

- We will evaluate a community-based pre-hospital care package in Karachi and Gujarat, featuring a novel rapid cooling system to reduce heat-related illness and death.

Aim 3: Inform and Strengthen Policy

- We will develop actionable, evidence-based recommendations to enhance existing HAPs and support their replication in 10 other at-risk cities.

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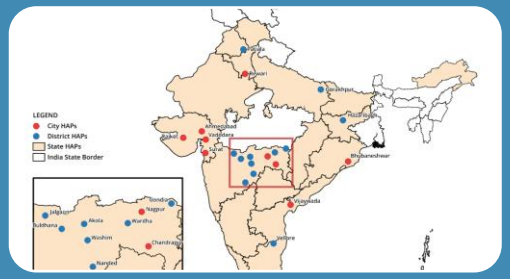
Mapping and Projecting Risk

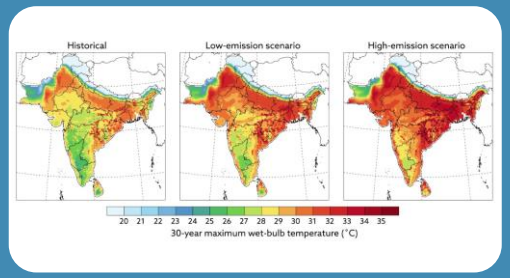


Identify Heatwave Zones

- An observational study analyzing 10 years of high-resolution meteorological data (temperature, humidity, etc.) to identify the spatial distribution of HWZs.

Estimate Heat-related Illness Burden

- A retrospective cohort study of all heat-related illness cases and mortality from public hospitals over the last ten years.



Establish Projections

- We will use correlation and time-series analysis to model the association between Heat-related Illness and Heatwave Zones, developing 15-year projections to inform future planning.

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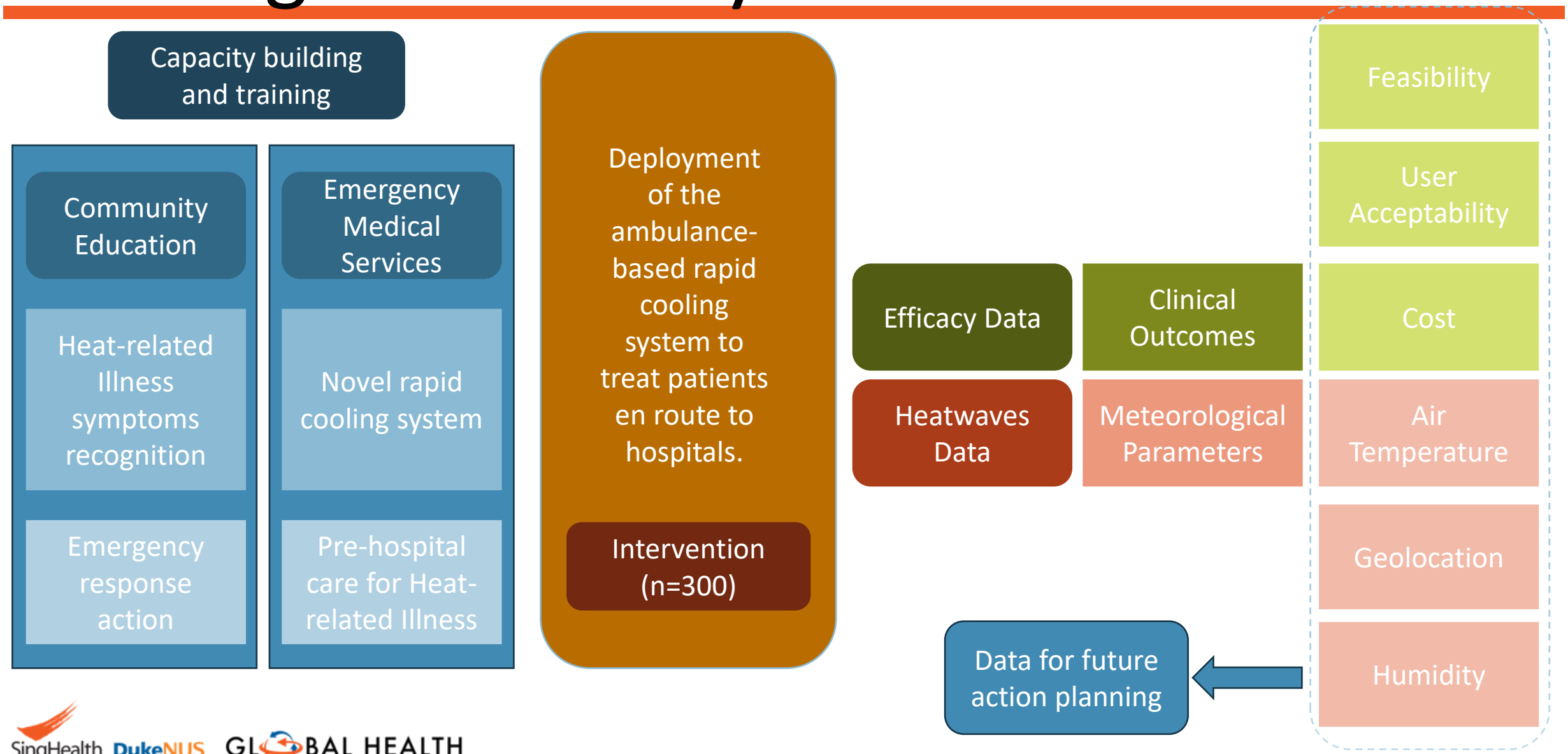
Piloting Community-Based Intervention



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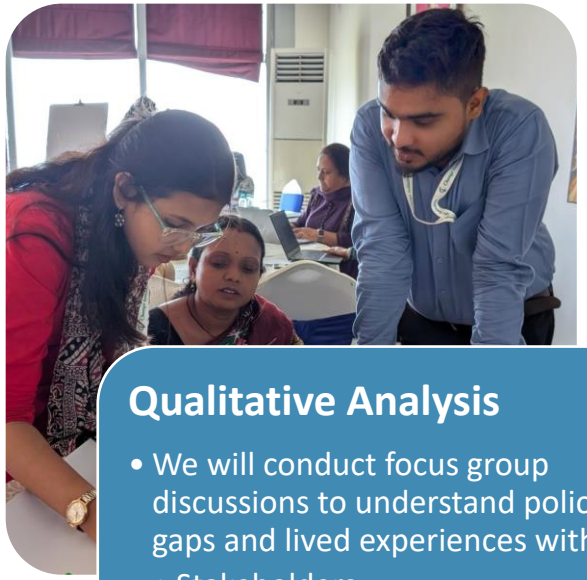
Developing Evidence-Based Policy



Qualitative Analysis

- We will conduct focus group discussions to understand policy gaps and lived experiences with:
  - Stakeholders
    - policymakers
    - healthcare providers
    - community leaders etc.
  - Key-informant interviews with HRI patients and their families.

Policy Development

- Findings will be translated into tailored policy briefs to strengthen HAPs in Karachi and Gujarat.

Capacity Building and Replication

- We will conduct workshops and training series to share findings and support policy development in 10 nearby HWZs.

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Expected Outcomes & Impact

Climate & Disaster Resilience

- High-resolution heat vulnerability maps for Karachi and Gujarat.
- Improved awareness among policymakers and communities, supported by early warning systems.

Health Equity

- A targeted 30% reduction in heat-related hospital admissions among vulnerable groups.
- Improved access to heat-health information for at least 70% of the urban poor.

Heat and Health Resilience

- Upgraded Heat Action Plans in at least 5 urban centers.
- Training for 1,000 healthcare professionals in managing heat-related illnesses.
- Integration of heat-health management into urban planning in at least 10 major cities.

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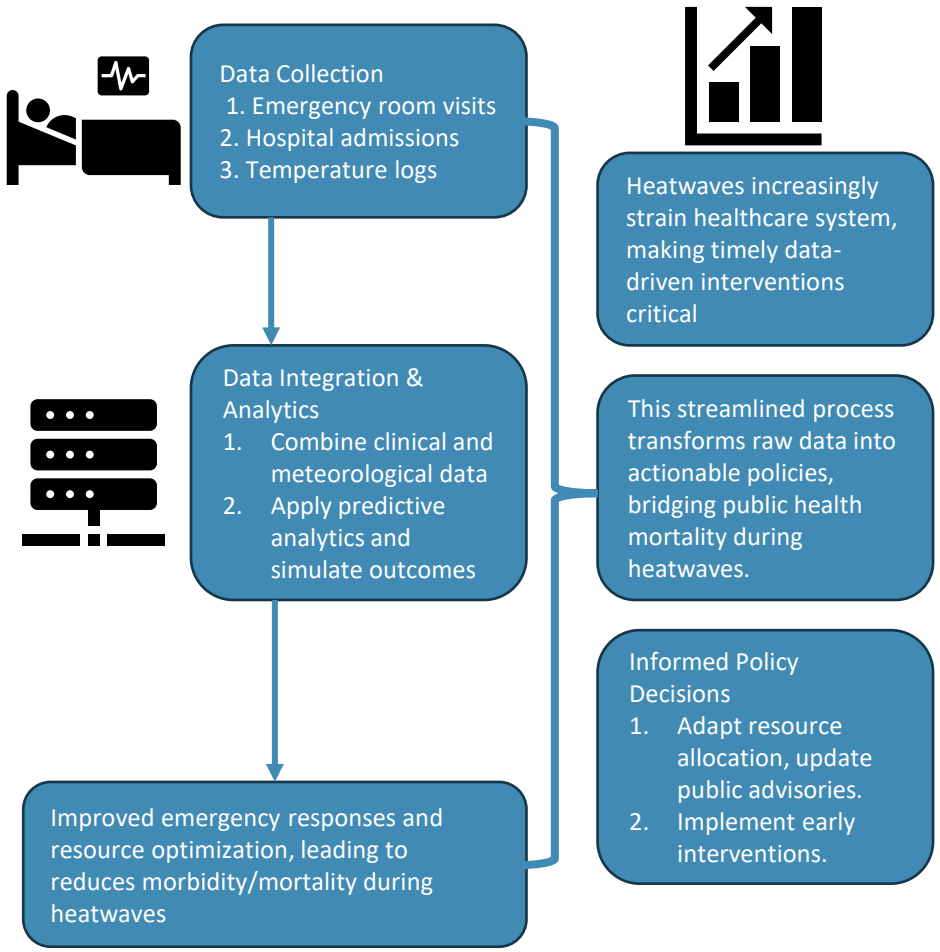
Health Data for Policy and Innovation



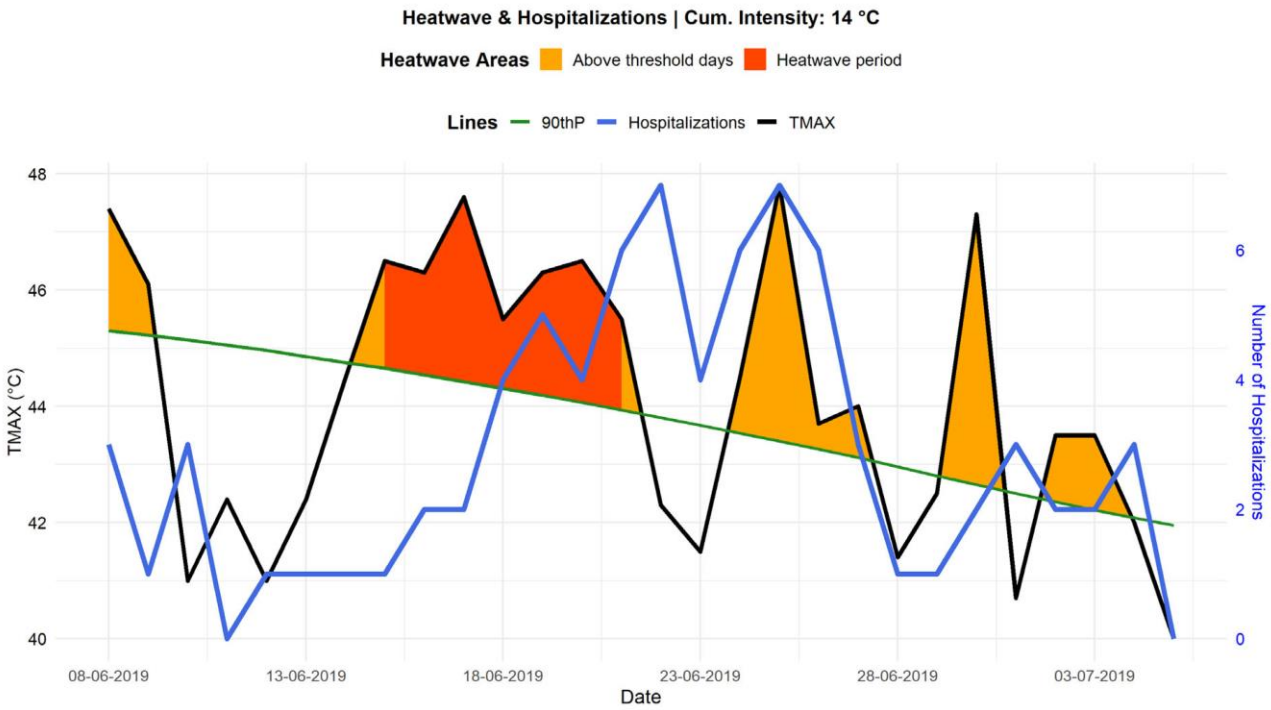


Figure 2: Use case example of machine learning on hospitalization rate prediction during heatwaves health data and maximum temperature (TMAX).

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Health Data for Policy and Innovation

Problem:
Missing or incomplete health and climate data disrupts accurate forecasting and emergency preparedness.

PREDICTIVE MODEL

Challenges:
1. **Data Gaps:** Inconsistent hospital reporting, lack of real-time climate-health integration.
2. **Bias & Inaccuracy:** Misallocated resources
3. **Delayed response:** Late response systems.

Solution Pathway:
1. Data Standardization: Improve interoperability
2. AI & Predictive Analytics
3. Cross-sector Collaboration: Link to public health and other agency integration.

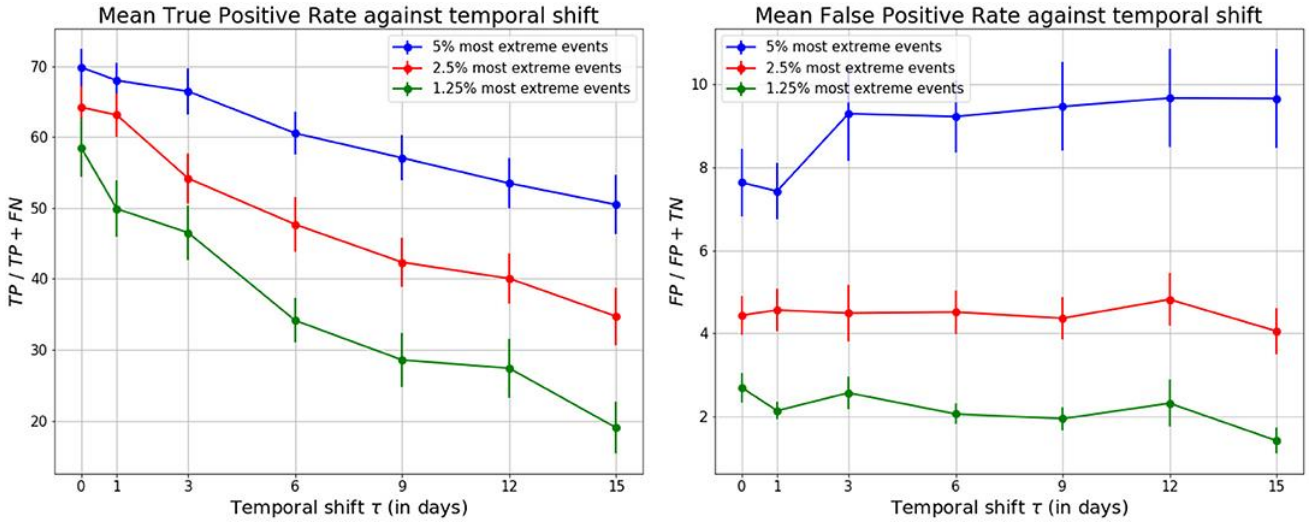

Figure 3: Incomplete data that predicted false positive values of heatwave risk.

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Alignment with ADB Strategic Priorities

- By mapping risks and building preparedness, we directly address climate change adaptation and disaster risk management.

Climate and Disaster Resilience

Inclusive Growth

- Our focus on vulnerable populations and community-based solutions promotes health equity and improves quality of life.

- By developing evidence-based policy and strengthening healthcare systems, we contribute to the long-term resilience and sustainability of South Asia's rapidly growing cities.

Sustainable Development

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Conclusion

A Pressing Need

- The threat of extreme heat in South Asia is severe and growing.

An Innovative Solution

- This project offers a comprehensive approach—from data to intervention to policy—to build urban heat resilience.

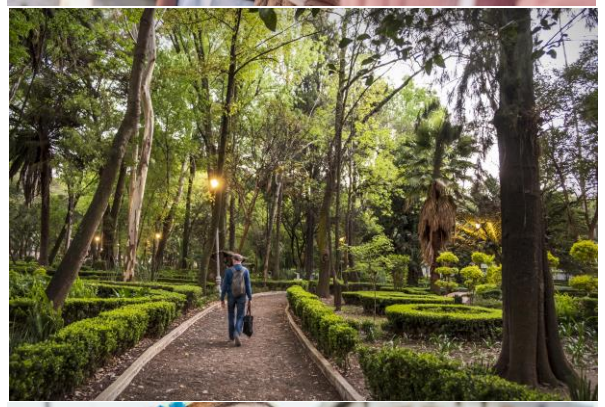
A Clear Impact

- Our work will lead to heightened awareness, systematically collected data, and scalable solutions that will save lives.

"We are ready to collaborate with partners on implementing this vital research for several large urban centres of our region. As a capable implementing research partner and with the right partners support we can collect real-world HW data to inform action planning and purposeful redesigning of cooling options to help build heat resilience and treatment alternatives in Asia Pacific."

A Call for Partnership

- We are ready to implement this vital research, and, with your support, help create a prosperous, inclusive, and resilient future for Asia and the Pacific.



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