A Quick Guide to Climate-informed Disease Surveillance

World Health Organization
REGIONAL OFFICE FOR South-East Asia

With knowledge of where and when climate-related diseases may strike, we can take action to protect lives and prevent illness.

Lives and quality of life are at stake for millions of people across South-East Asia as climate change alters patterns of disease. Yet we have tools to respond to the rapidly changing context: climate-informed disease surveillance and early warning. This guide provides an overview of how health advocates and decision-makers can bring these systems to life.

LEADING HEALTH RISKS OF CLIMATE CHANGE ACROSS SOUTH-EAST ASIA

HIGHER TEMPERATURES AND HUMIDITY

- Mosquitoes breed more, bite more and move to new areas. **Malaria is a significant risk.**
- Warmer average temperatures: **mosquitoes that carry dengue, malaria and Chikungunya** may have longer seasons, increasing risk dramatically.

DROUGHT

- As traditional rainy seasons change, an unpredictable start of the season and extended droughts are more frequent. Resulting declines in commercial and home crop production and livestock **puts people at greater risk of malnutrition, especially children.**

TEMPERATURE AND RAINFALL VARIABILITY

- These affect the vectors that **spread neglected tropical diseases** such as visceral leishmaniasis (kala-azar), lymphatic filariasis, Japanese encephalitis, worm-related enteric diseases and leptospirosis. These diseases may increase and/or re-appear in places where they were thought to be eliminated.

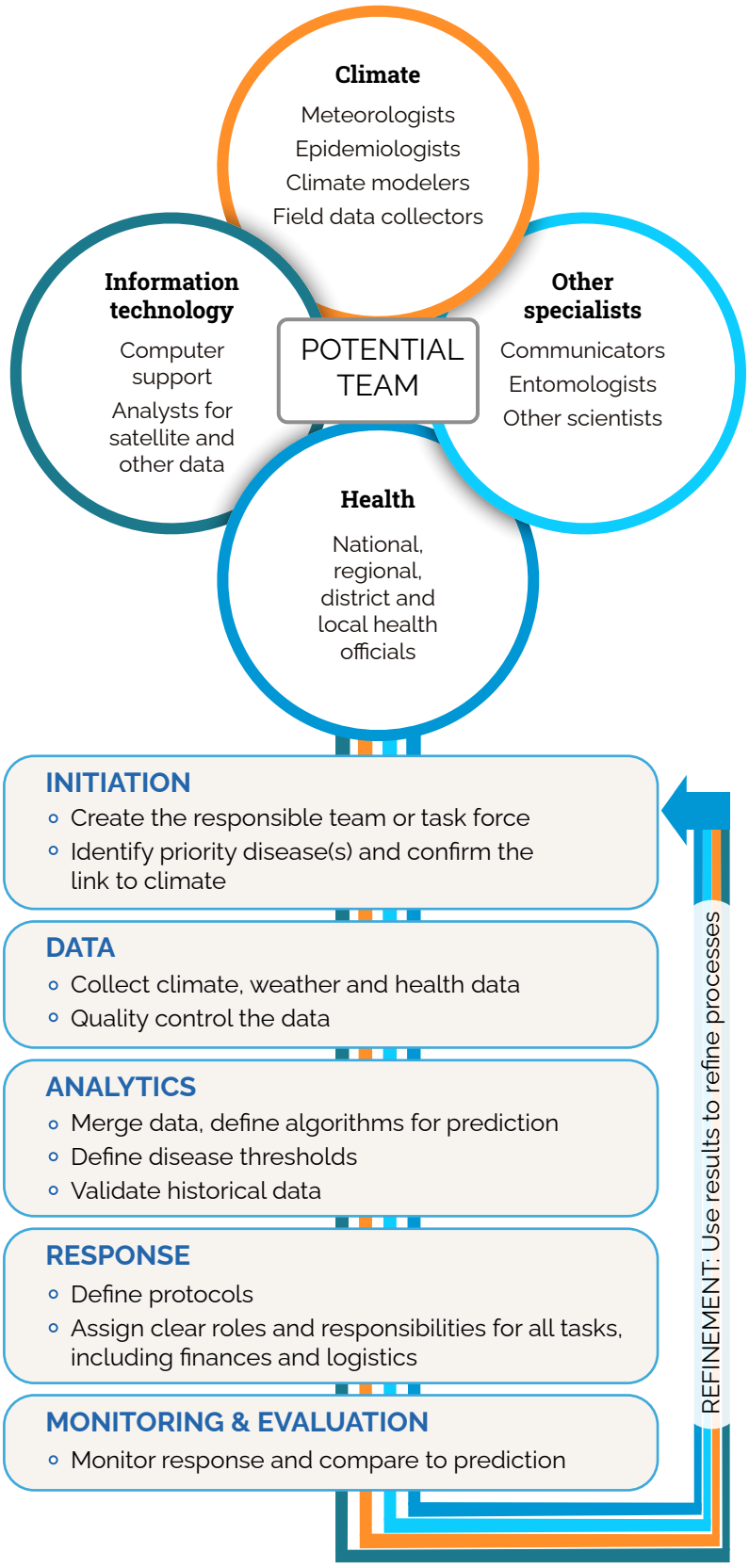
HEAVY RAINFALL, STORM SURGE AND FLOODING

- Bacteria and viruses that cause cholera, rotavirus and diarrhoeal diseases may reproduce more. People are more likely to be exposed to the pathogens and become ill.

SEA-LEVEL RISE

- Salt water is pushing inland, contaminating drinking water. More people in coastal areas are **developing hypertension due to increased sodium intake**.

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What it takes to establish a climate-informed disease surveillance and early warning system

Who is on the team

Health and meteorological experts are the foundation. But other stakeholders are needed to collect, analyse and share information. A centrally located team is likely to manage and drive the system, but local officials are typically the first responders during outbreaks. If coordination is lacking, the response can be disconnected and ineffective..

Getting started

The new systems should build on the region's existing national health information management systems. Investments in data collection, capacity building of all actors and results monitoring are essential. So is secure financing. The graphic on the left shows a potential team and milestones in the process.

Success factors

Centralise data: Store disease and climate/ weather data together, ideally through an established government group with an existing database.

Leverage technology: With local station data, consolidate routine climate and health surveillance data in a single system capable of detecting early outbreaks.

Automate: With satellite data, use applications that download data from online sources automatically.

Collaborate: Strengthen analysis by coordinating with experts in universities and civil society.

Communicate: Engage specialists to translate the complexity and uncertainty of models into language and formats accessible to all audiences.

Why does surveillance of climate-sensitive disease matter?

Integrated climate and disease analysis gives decision-makers information to take action. Early warning systems can alert people to potential outbreaks. And providing information to hospitals and clinics can help them prepare for emergencies and the slower, evolving shifts of disease patterns.

Data-driven, computer-based approaches are game-changers: they offer the promise of higher quality, real-time information. That will help target the response to people facing the highest risk.

WHO resources to inform action

- Guide: Early warning and response system for dengue
- WHO SEARO Health-Climate Advocacy Toolkit