

Smarter Surge for Health Emergencies: Strengthening NPHIs Through the AID Operational Model

Webinar 16 July 2026

DISCLAIMER: The views and opinions expressed in this webinar are those of the authors and do not necessarily reflect the official policy or position of IANPHI.



Welcome and Opening Remarks

AGENDA

Welcome & Opening remarks: *Sadaf Lynes, Director of Collaborative Surveillance, Workforce and Health Emergencies, IANPHI*

1. Introduction: WHO Global Health Emergency Corps (GHEC) and IANPHI's work on strengthening the role of NPHIs in health emergencies

- *Speaker: Sadaf Lynes, Director of Collaborative Surveillance, Workforce and Health Emergencies, IANPHI*

2. The AID Operational Model: co-development process, content and usage of the model

- *Speaker: Dr Andrew Lee, Professor of Global Health, University of Sheffield & Technical Lead, IANPHI*

3. Simulation Exercise applying the AID Operational Model to mobilise a surge response

- *Speaker: Dr Andrew Lee, Professor of Global Health, University of Sheffield & Technical Lead, IANPHI*

4. Lessons from Kenya's National Tabletop Exercise

Speaker: Dr Elizabeth Nzioka, Emergency Preparedness and Response Coordinator, Kenya National Public Health Institute

5. Experiences with the AI-assisted GHEC Planning Tool for workforce surge rostering

- *Speakers: Dr Alex Riolexus Ario, Director, Uganda National Institute of Public Health*

Q&A: *Sadaf Lynes, Director of Collaborative Surveillance, Workforce and Health Emergencies, IANPHI*

Next steps and concluding remarks: *Sadaf Lynes, Director of Collaborative Surveillance, Workforce and Health Emergencies, IANPHI*

MODERATOR



Sadaf Lynes

Director of Collaborative
Surveillance, Workforce
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SPEAKERS



Dr. Andrew Lee

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Dr. Elizabeth Nzioka

Emergency Preparedness
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Dr. Alex Riolexus Ario

Director, Uganda National
Institute of Public Health



Sadaf Lynes, Director of
Collaborative Surveillance,
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Introduction: WHO Global Health Emergency Corps (GHEC) and IANPHI's Work to Strengthening the Role of NPHIs in Health Emergencies

Global Health Emergency Corps

GHEC is a framework for enhancing health emergency workforce capacity within health emergency prevention, preparedness, response and resilience (HEPR) work, and a collaboration platform for countries and health emergency networks.

The vision of Global Health Emergency Corps (GHEC) is a health emergency workforce centred in countries and coordinated regionally and globally, composed of:

- ❖ *Connected health emergency leaders*
- ❖ *Health emergency surge capacities*
- ❖ *Health emergency workforce*

A health emergency workforce centered in countries



Connected leaders

- Connect senior national health emergency leaders in a trusted network.



Surge capacities

- Standardize quality and enhance interoperability between national, regional and global rapid response capacities.



Emergency workforce

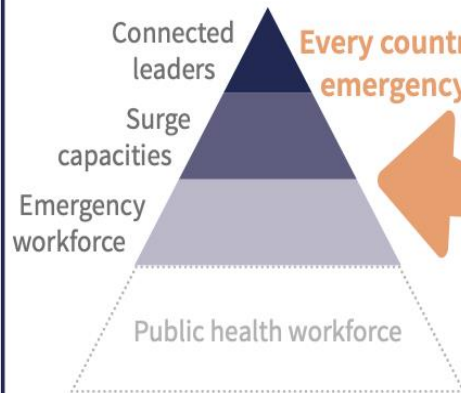
- Strengthen local and national health emergency preparedness and response workforce.

There is no global health security without local and national health security.

Dr Tedros Adhanom Ghebreyesus
WHO Director-General

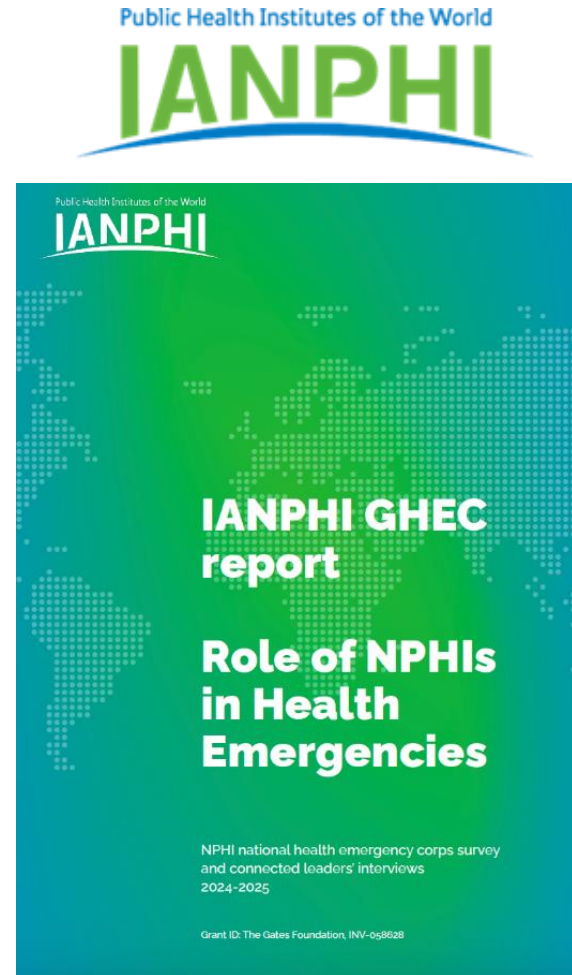


Every country has an emergency corps.



Strengthening the Role of NPHIs in Health Emergencies

- IANPHI supports:
 - Strengthening national health emergency corps
 - Building connected leaders' structures before emergencies happen
- Funded by Gates Foundation
- Contribution to GHEC strategy
- Survey of NPHIs
- Co-design and co-development of approaches for NPHIs and surge/deployment and co-ordination of public health workforce
- In-country implementation initiatives
- Connected leaders approach
- AI pathfinder model





Dr Andrew Lee, Professor of
Global Health, University of
Sheffield & Technical Lead,
IANPHI

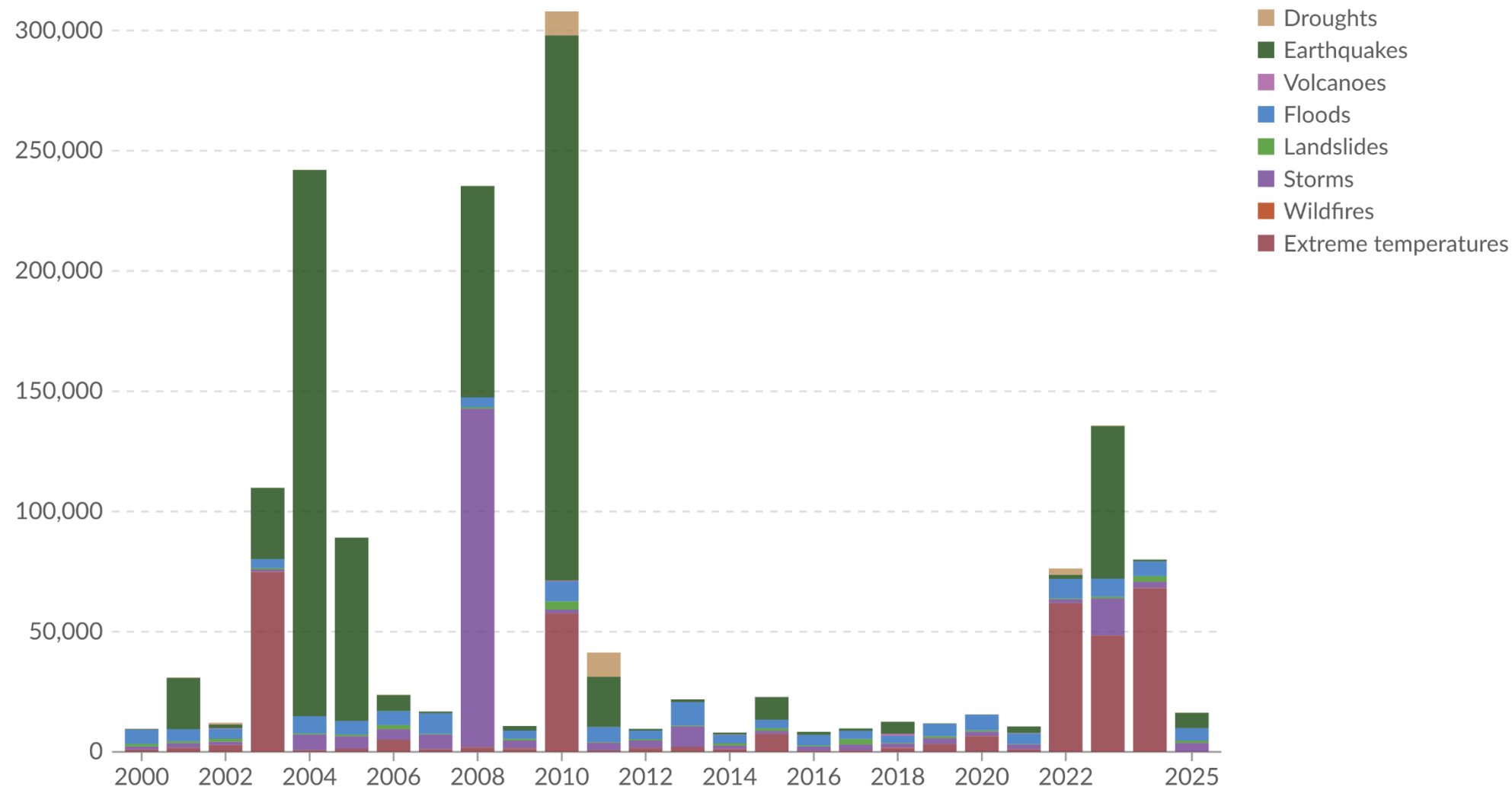
The AID Operational Model: Co-development Process, Content and Usage of the Model

Public health emergencies

- These are extraordinary events or threats that pose a substantial risk of significant morbidity, mortality, and wider societal consequences to a population.
- They may or have overwhelmed the routine response capabilities of the existing health system and public health infrastructure.
- Require multi-agency and multi-sectoral responses across different jurisdictions (local – national – international)
- Unique challenges: SCALE, BREADTH, COMPLEXITY, & DURATION.

Annual deaths from all natural disasters, World, 2000 to 2025

Disasters include events such as earthquakes, volcanoes, droughts, wildfires, storms, and floods.



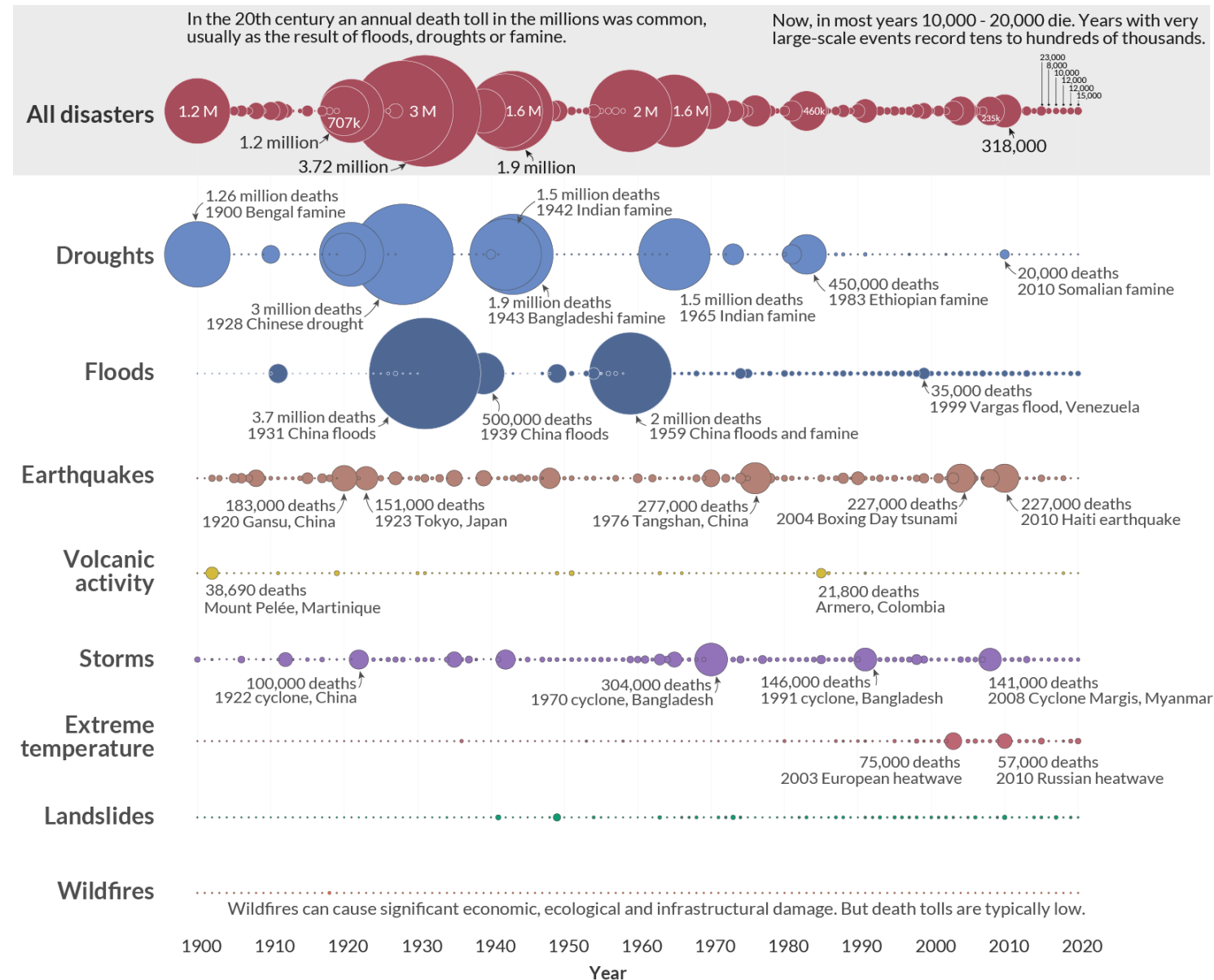
Data source: EM-DAT, CRED / UCLouvain (2026)

OurWorldinData.org/natural-disasters | CC BY

Note: Based on recorded events; coverage is more limited before the year 2000. Longer historical trends may partly reflect reporting improvements.

Global deaths from disasters over more than a century

The size of the bubble represents the estimated annual death toll. The largest years are labeled with this total figure, alongside large-scale events that contributed to the majority – although usually not all – of these deaths.

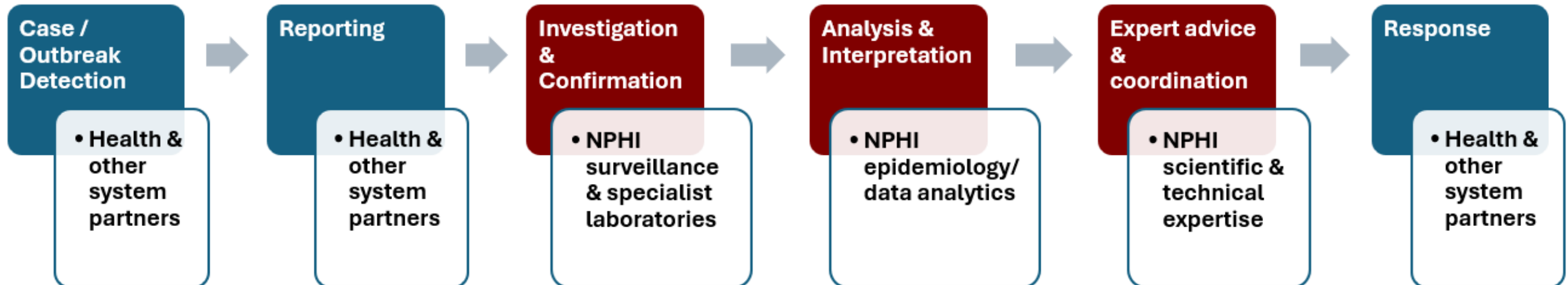


The challenge of mounting a surge response

Experience from outbreaks, epidemic and pandemics:

Effective pandemic control requires

- ✓ Early detection,
- ✓ Rapid confirmation of the pathogen, and
- ✓ Timely public health intervention.



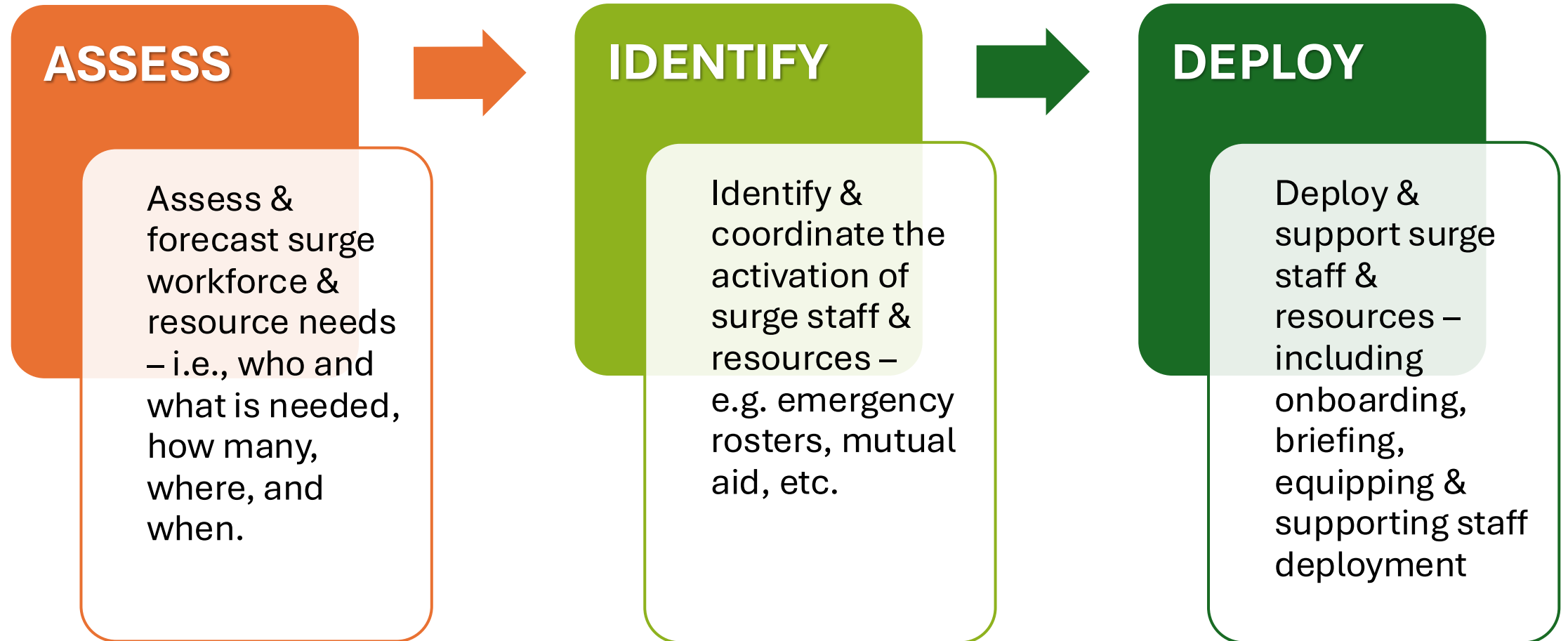
The challenge of mounting a surge response

- But one problem is the **scalability** of the response (surge capacity)
 - *How large a response can be deployed?*
 - *How quickly can we scale it up and deploy it?*
 - *How long can it be deployed for?*
 - *Where are the resources drawn from?*
- Another issue is **matching** the response to the needs, and **anticipating** future needs.

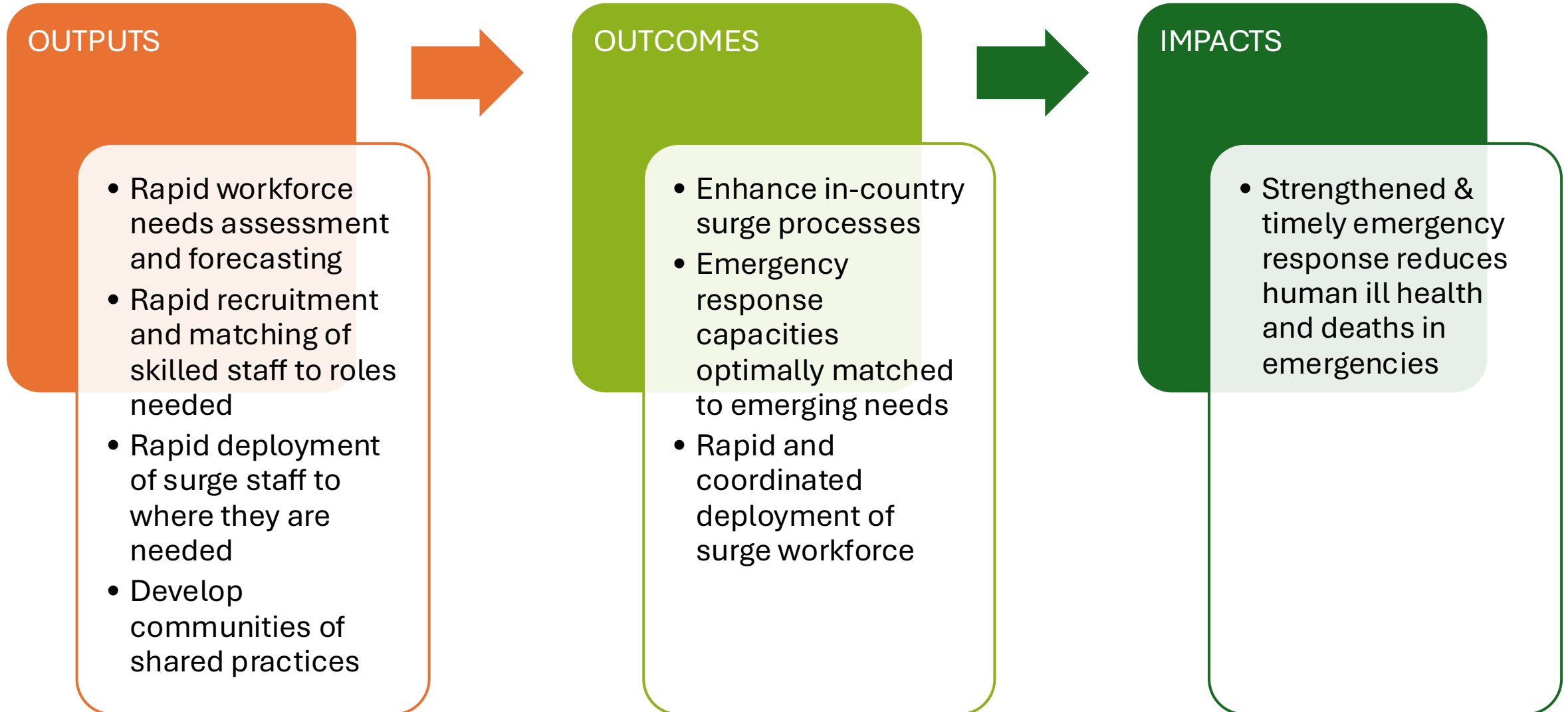


Developing the AID Operational Model Concept

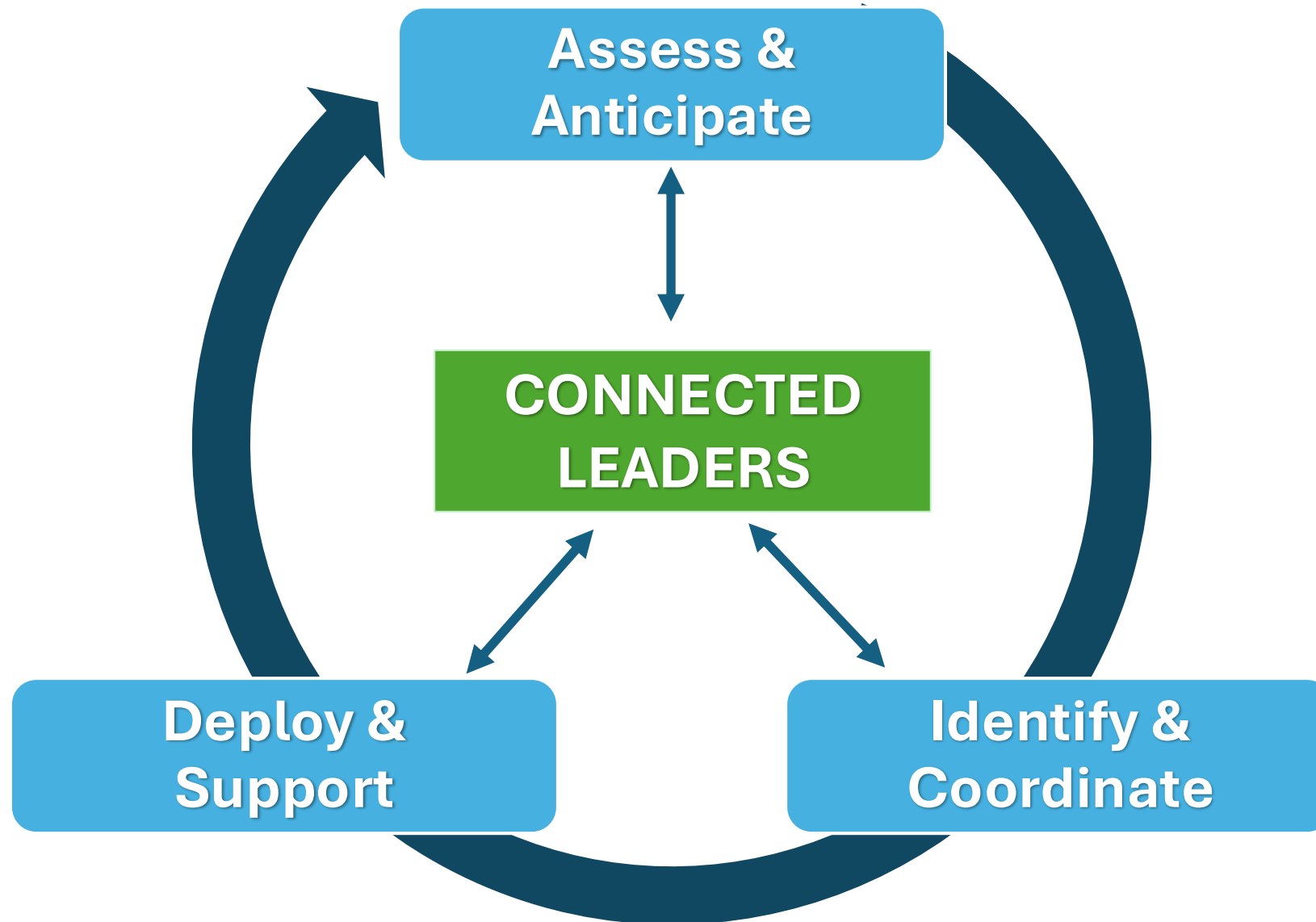




Pathway to impact



Revised AID Operational Model (2026)



Purpose of the AID Operational Model

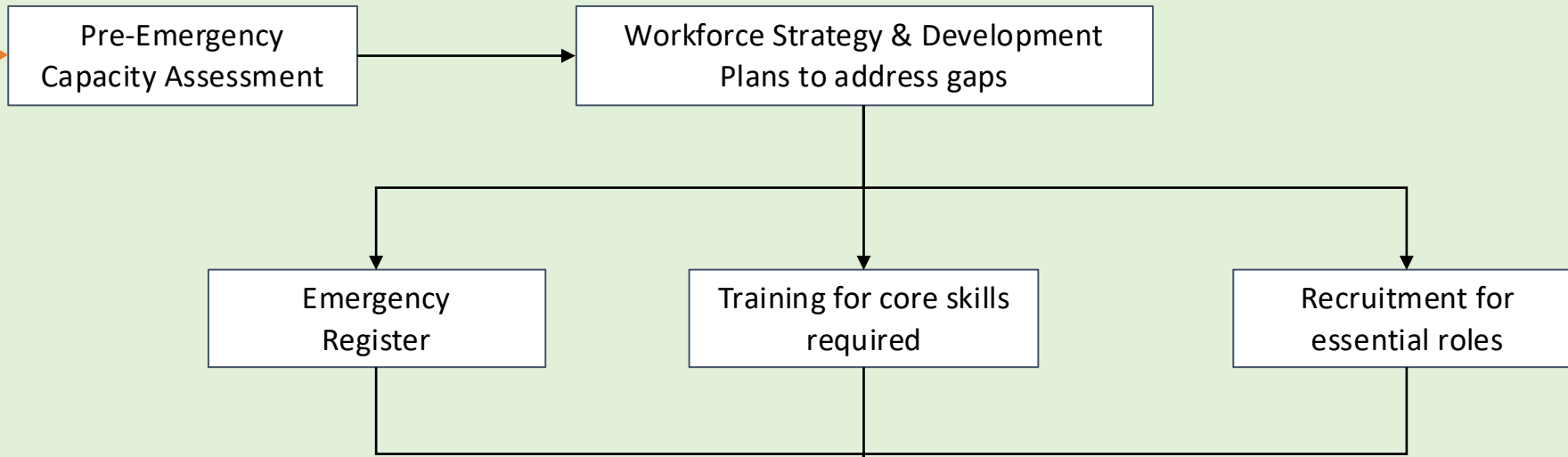
- ❖ Tool to help surge response planning
- ❖ Quality improvement
- ❖ Assurance tool



Focus

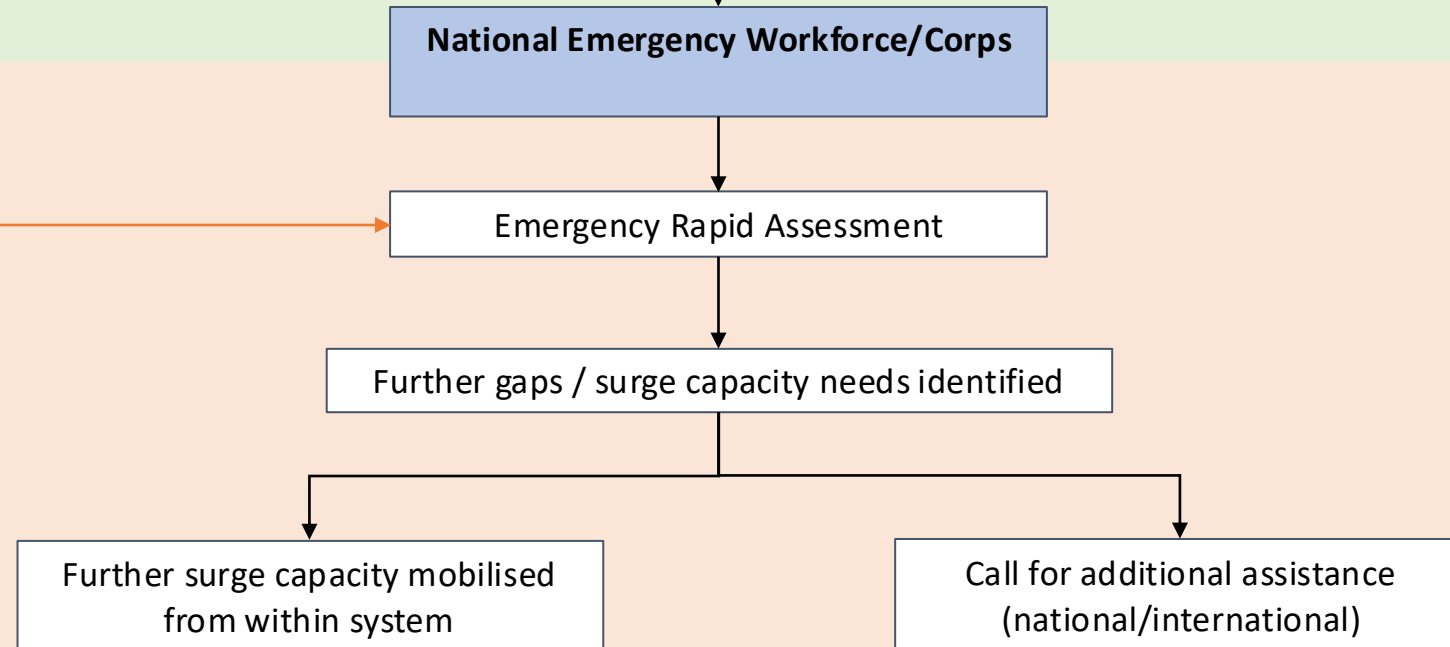
- LIC/LMIC context
- Public health emergencies (all hazards)
- NPHI +/- MoH
- National-subnational axis
- For use in emergency preparedness and response phases

PRE-EMERGENCY PHASE



**AID
Operational
Model**

EMERGENCY PHASE



Our Plan of Action (September 2025 – September 2026)

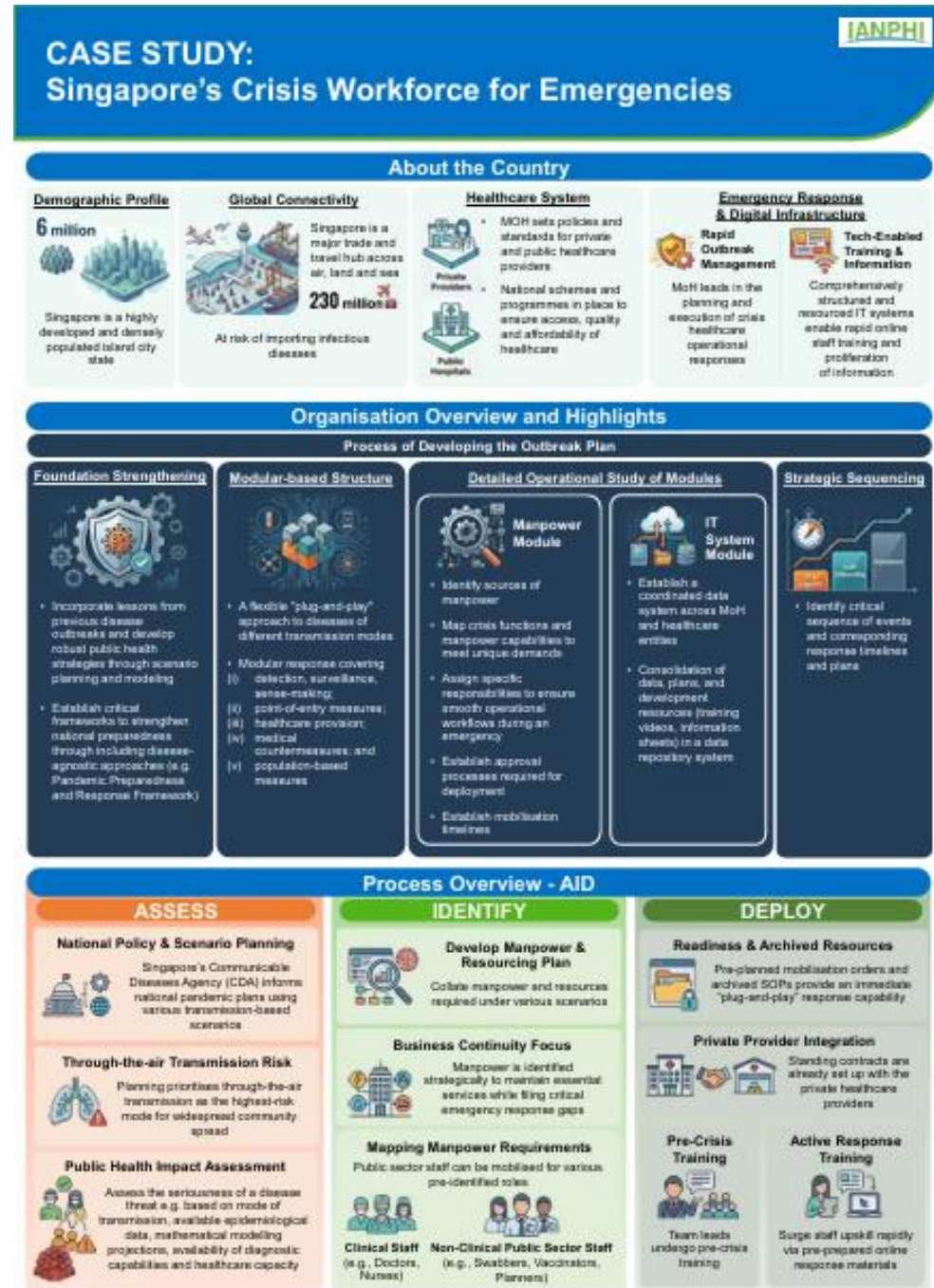
1. Rapid desk review of existing tools and resources used to assess workforce needs in emergencies
2. Co-create and refine the AID Operational Model with the involvement of 12 selected participating NPHIs, and also develop supporting tools and resources (e.g. checklists, case studies)
3. Pilot the use of the model through a SIMEX (*May 2026, Kenya*)
4. Consult with IANPHI members and other organizations
5. Revise and finalize the AID Operational Model and resources
6. Disseminate and promote the use of the operational model and resources

AID OPERATIONAL MODEL CO-CREATION WORKSHOPS:

Nairobi, Dec 2025
Kuala Lumpur, February 2026



- Exploration of use of AI to support surge
- Case studies – Good practice examples
- Country implementation projects ongoing
- Mini projects – e.g. workforce/emergency functions guide, deployment checklists
- SIMEX





Dr Andrew Lee, Professor of
Global Health, University of
Sheffield & Technical Lead,
IANPHI

Simulation Exercise Applying the AID Operational Model to Mobilise a Surge Response

SIMEX

- Use AID Operational Model to aid decision-making and document decisions as they occur
- Use AID Operational Model to identify tools and resources needed to respond to the scenario
- Document coordination across sectors where applicable



Participants act in real-world roles

Sub-national level/County level – Kajiado, Nairobi

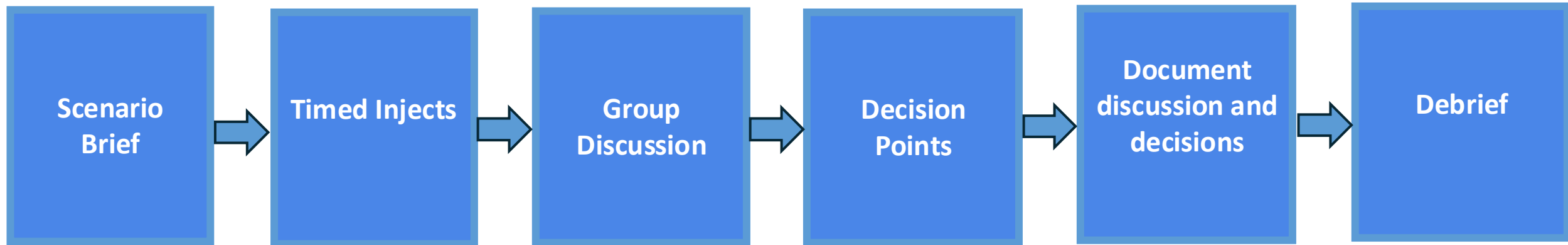
National Level – KNPHI, Defence, Veterinary Services, Environment, Red Cross

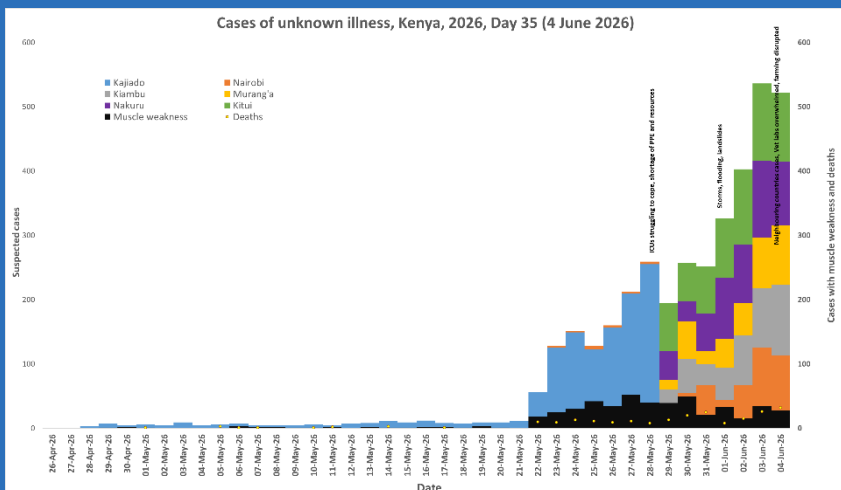
External – WHO Co, AMREF,

Uganda MoH / UNIPH



Conduct of SIMEX





PHASE 1: DAYS 1 TO 21 – OUTBREAK TO SYSTEM STRAIN



DAY 1-7: LOCALIZED ZOOTONIC SURGE

Suspected "Mbusi Virus" emerges in Kajiado East children (11% CFR); national surge teams deploy for safe burials of livestock.



DAY 21: URBAN SPREAD & SYSTEM STRAIN

Virus confirmed as a novel enterovirus spreading to major towns; health systems become overwhelmed, prompting ADF military support.



KEY FINDING: CROSS-BORDER ALERT

Uganda initiates border surveillance and establishes laboratory isolation points as the risk moves beyond Kenya's borders.

PHASE 2: DAYS 28 TO 32 – COMPOUND DISASTERS



84 DEATHS ACROSS FOUR COUNTIES

ICU capacities are fully stretched, requiring a national mapping of all critical care staff to manage the rising mortality.

PROCESS STEP: SPLITTING GOVERNANCE STRUCTURES

VIRUS IMS

FLOOD/INFRASTRUCTURE
RECOVERY IMS

Severe flooding forces the National Group to create two separate Incident Management Systems.



KEY FINDING: DISPLACEMENT & SANITATION

Infrastructure destruction leads to the deployment of mobile hospitals and Livestock Emergency Oidielice Standards (LEBS) for animal evacuation.

PHASE 3: DAYS 35 TO 48 – NATIONAL & INTERNATIONAL DEVASTATION



4,000 HEALTHCARE WORKERS NEEDED

Labs are completely overwhelmed, requiring the mobilization of medical students and the National Youth Service for low-risk tasks.



DAY 48: THE SECOND WAVE

Confirmation of airborne human-to-human transmission forces a pivot to Home-Based Care to decompress failing facilities.



KEY FINDING: INTERNATIONAL LOCKDOWN DEBATES

External partners debate total country lockdowns and halting all non-essential international travel as the virus goes global.

Reflections from the SIMEX

- Connected leaders is key
- AID Operational Model is a cycle
- Need for better quantification and anticipation
- Resources other than workforce are required, e.g. financing
- Need stronger links between different government levels and management structures
- Recovery stage considerations needed, including de-escalation & demobilisation
- Value in pairing AID based SIMEX with National Health Emergency Operations Plan training



Revised SIMEX product

“Off the shelf” tabletop SIMEX exercise product developed

Generic and can be tailored to local context

For use in country, involving national, subnational and external partners

Consists of 3 modules corresponding to 3 key phases

Module 1: Initial emergency response

Module 2: Scale up of the surge response

Module 3: Sustaining surge response over a prolonged period

Purpose to test surge response planning and decision making in an emergency situation

Ideally run over 2 days (including time for hot debrief and discussions regarding de-escalation and recovery)



Dr Elizabeth Nzioka,
Emergency Preparedness
and Response Coordinator,
Kenya National Public Health
Institute

Lessons from Kenya's National Tabletop Exercise



SIMEX DEBRIEF

Lessons from Kenya's National Tabletop Exercise

How we're strengthening emergency response through connected leadership, practical insights,
and AI-powered workforce planning

Kenya National Public Health Institute

What This Debrief Covers

Feedback on SIMEX from Kenya NPHI



01

Overall Feedback

Reflections on the SIMEX exercise, the AID operational model, and the facilitator role



02

Usage & Usefulness

How SIMEX findings are being applied and their value to emergency workforce planning



03

Insights & Recommendations

Key lessons from the AID model and proposed enhancements going forward

What We Tested

A 72-hour emergency response simulation designed to test Kenya's ability to detect, activate, and respond to a Bundibugyo EVD outbreak.

Detection Phase

Alert from community →
verification → early escalation

Activation Phase

IMS/EOC launch → incident
commander briefing → team
mobilization

Response Phase

Case investigation → contact
tracing → resource mobilization →
coordination

What Worked Well

- EOC & IMS activation happened fast- Rapid activation of the protocols for Emergency Operations Centres and Incident Management Systems
- One Health collaboration worked: human health, animal health, and environmental teams moved in sync
- The AID Model identified surge capacity —Initially the teams knew exactly where to find RRTs, volunteers, medical students, and community mobilizers
- Multisectoral partners (WHO, AMREF, WOAHA, neighboring countries) engaged immediately and effectively
- Communication of resource needs was clear and actionable across all levels

Where We Stumbled

Detection Blindspot

Early warning signals were missed at subnational level; rumor verification took too long: Lack of early case definitions and delayed identification of transmission pathways, leading to non-targeted interventions

Communication Silos

Information flowed up to the top but didn't come back down; local teams felt disconnected from decisions: Insufficient preparedness plans and limited formal agreements with key sectors at county/local level

Fuzzy Roles

Cross-border coordination structures and multi-agency roles weren't defined before the emergency

Burnout Risk

Incident commanders and surge teams were overwhelmed due to the increase in pressure as the scenarios progressed workload management and welfare arrangements were unclear:

Concurrent emergencies (outbreak, floods, and landslides) overwhelmed existing response capacities

The Power of Connected Leadership



The AID Model highlighted the importance of “Connected Leaders,” particularly during the Identify phase — mapping needs, stakeholders, and available surge capacity.

The difference between chaos and coordinated response isn't just systems or plans — it's having leaders who actively connect across sectors, levels, and geographies.

However, the debrief found that Connected Leadership was not sufficiently visible or explicitly incorporated within the current AID framework.

Strong Leadership Facilitated:



Multisectoral Collaboration

Through the One Health approach, bridging human, animal, and environmental sectors



Partner Engagement

Active involvement of WHO, AMREF, WOA, and neighboring countries



Surge Mobilization

Coordinated deployment of personnel drawn from multiple institutions

What Participants Told Us

"As the outbreak grew, it became hard to keep track of the response. We needed a dashboard to show who was involved, where they were working, and what was happening."

— County Health Officer

"This exercise showed me that leadership isn't about having all the answers — it's about connecting the right people to solve problems together."

— IMS Coordinator

"If we had clear welfare arrangements in place, our teams would have sustained better. Exhaustion was our real enemy."

— Rapid Response Team Lead

How to Use the AID Operational Model Better

Build Connected Leadership Explicitly

Train incident commanders not just on technical skills, but on stakeholder mapping, real-time coordination, and inclusive decision-making. The AID Model's "Identify" phase should emphasize relationship-building.

Enable Two-Way Communication

Decisions made at national level need to flow back to county and community levels. Establish communication cadences (daily briefings, weekly reviews) that keep everyone synchronized.

Define Roles Before the Crisis

Hold pre-emergency alignment meetings with cross-border partners, multi-agency structures, and county teams. Write clear handover protocols and decision rights.

Plan for Surge Welfare

Secure accommodation, feeding, and rotation schedules for surge teams BEFORE deployment. Burnout undermines response quality — plan for it.

From Lessons to Action: The GHEC AI Platform

SIMEX findings are being integrated into Kenya's pilot of the Global Health Emergency Consortium (GHEC) AI Platform, a tool designed to:

1 Map Surge Capacity

Real-time visibility of available workforce (RRTs, specialists, volunteers, community health workers) and their competencies

2 Support Connected Leadership

Identify key stakeholders across sectors and track decision-making chains during emergencies

3 Enable Rapid Activation

Reduce time-to-deploy for surge personnel; minimize coordination friction

4 Learn & Improve

Capture debrief insights like these and feed them into the next iteration of preparedness planning



Thank You

*Strengthening the AID Operational Model and Connected Leadership
for Kenya's emergency workforce surge readiness*

IANPHI SIMEX Debrief



Dr Alex Riolexus Ario,
Director, Uganda National
Institute of PublicHealth

Experiences with the AI-Assisted GHEC Planning Tool for Workforce Surge Rostering

Uganda's AI-Assisted GHEC Planning Tool

Transforming National Emergency Workforce Planning through Artificial Intelligence





Introduction



- WHO introduced its Global Health Emergency Corps framework at the 2025 WHA in May
- Uganda was chosen to be a pathfinder country for the roll out of the framework
- Uganda adopted AI generative modeling as an approach to roll out the GHEC framework



Implementation Process



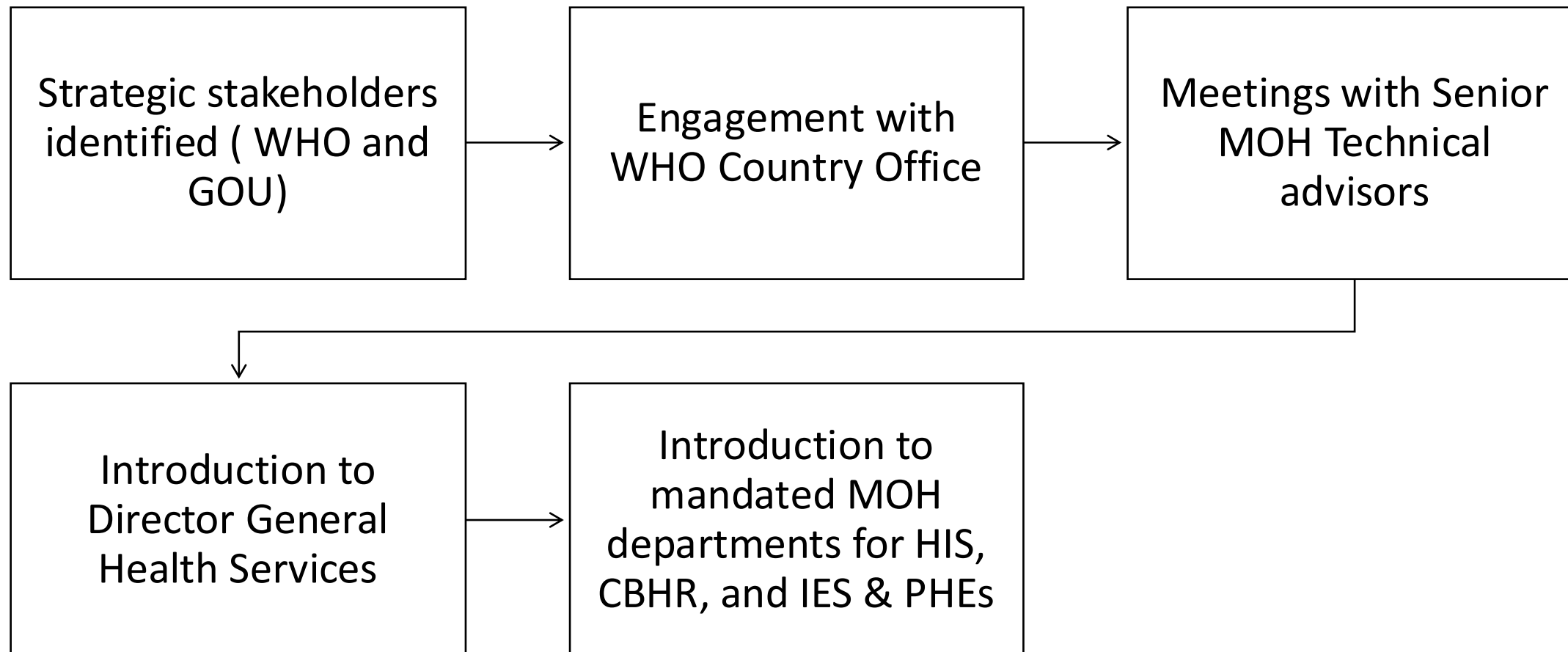
Introduction of
GHEC to a core
country team

Alignment with
national structures

Introduction of AI
generative modeling
to Ugandan team



1. Introduction to Key Stakeholders





Critical Stakeholders



Category	Stakeholders
Senior Top Management	Director General Health Services
Critical MOH Department Heads	- Commissioner for Integrated Epidemiology, Surveillance and Public Health Emergencies (IES & PHEs) - Assistant Commissioner Health Information Systems - Commissioner for Capacity Building and Human Resource for Health
Uganda National Public Health Institute	- Director UNIPH - Public health Emergency Fellowship Program
Public Health Emergency Operations Center	Epidemic Intelligence Lead
WHO	- Country Office - AFRO



2. Alignment of GHEC Framework with National Structures



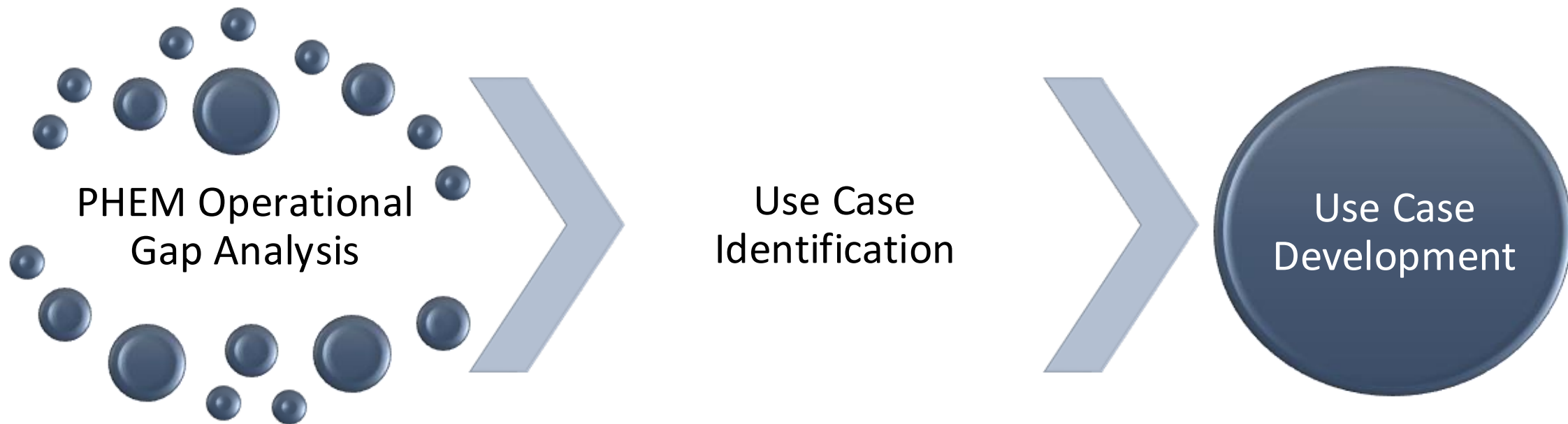
Analysis of
Uganda's
national PHEM
structures and
associated
human resource

Framing GHEC
within Uganda's
context

Refining
Uganda's GHEC
Structures



3. Introduction to AI Generative Modeling for GHEC





Use Case Description and Rationale



Use Case	Description	Health System Capacity built
1. Infectious disease modeling	Try to predict the next outbreak current scenario forecasting	Enhanced preparedness through simulation exercises
2. Response management	Alert verification and media/ news analysis	Increased agility in Event Based Surveillance (efficient signal processing)
3. National GHEC structure	HR capacity (e.g. what is my personnel capacity at national and regional level) and outbreak response roster configuration	PHE Human Resource preparedness. Rapid, rational deployment for PHEs



Core Principles for Implementation

Complete control and sovereignty

- Uganda controls its data, its policies, its AI choices and its integrations; international requests go out under Uganda's own disclosure policy

Capability transfer

- UNIPH teams configure, integrate and extend the platform themselves
- Uganda welcomes peer institutes to build on the same methodology, extending to surveillance (IDSR and event-based), community-signal verification, hospital surveillance and supply-chain workflows



Key Achievements so far

Live Uganda platform

- GHEC AI instance deployed and in use by the MOH and UNIPH team, hosted on a dedicated UNIPH server in Kampala

National workforce Directory

- ~1,200 responders in a role-structured national directory
- 458 details verified via WhatsApp true-up: a direct confirmation of each person's training, prior deployment and availability

Two of three use cases operational

- “Workforce Planning & Simulation” and “Response Team Creation & Deployment” are live

Configured to Uganda

- 24 priority diseases plus unknown-syndrome categories; national geography and health facilities loaded



What has worked well?



Weekly Coordination Meetings

- Step-wise implementation of use-case
- Solve challenges in real time
- Recalibrate approach early as needed

New MS Server

- Ample cloud space for execution.
- Speed
- Server at up at the UNIPH – great opportunity AI based research for the institution

GHEC Focal Person

- Embedded within the MOH and with the official mandate to coordinate HR deployments for PHEs
- Able to flag compliance issues early
- Able to communicate real needs early

Embedded within the UNIPH

- Research Institute = Government confidence in working the a system into government operations



Challenges



Recurrent Interruptions to Progress

1. Two Ebola outbreaks between March 2025 and June 2026
2. National elections Jan 2026
3. Change in leadership following elections

Political Sensitivity

1. Multiple stakeholder concerns around AI and information security
2. Human resource deployment for outbreak response is carries a degree of political sensitivity

Stakeholder buy-in

1. Uganda has a very mature PHEM structure with multiple intricacies in its IMS
2. Changing the way things are done is a multi-stakeholder and time consuming process



Challenges



Information security

1. Concerns around information security and data privacy with external TA



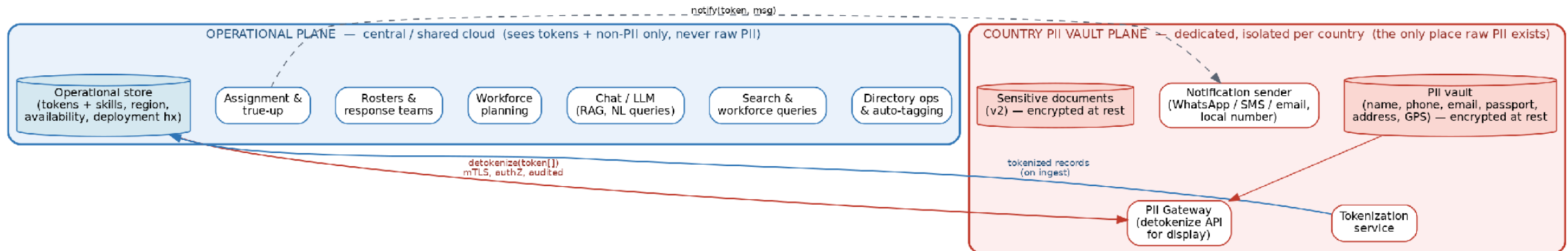
Mitigation for Information Security and Privacy

Information Security and Privacy Centric Technology Architecture

- Country's "Personal Data" is ISOLATED
- All Data is Encrypted – when Stored, and when Transmitted
- AI Models NEVER see "Personal Data" – (Names, Contact Details, etc.)

Multiple LLM Support

- No Reliance on Single AI Model





Lessons Learned



1. PHE Deployment is not just technical, but political
2. Through strategic stakeholder engagement is necessary to mitigate the risk of red-taping
3. There is need for mathematical modeling in order to have a scientific way to quantify PHER human resource by cadre for a given outbreak
4. Adoption of AI into sensitive government operations must be done with careful attention to concerns of key decision-makers
5. Need to thoroughly and practically address concerns around information security

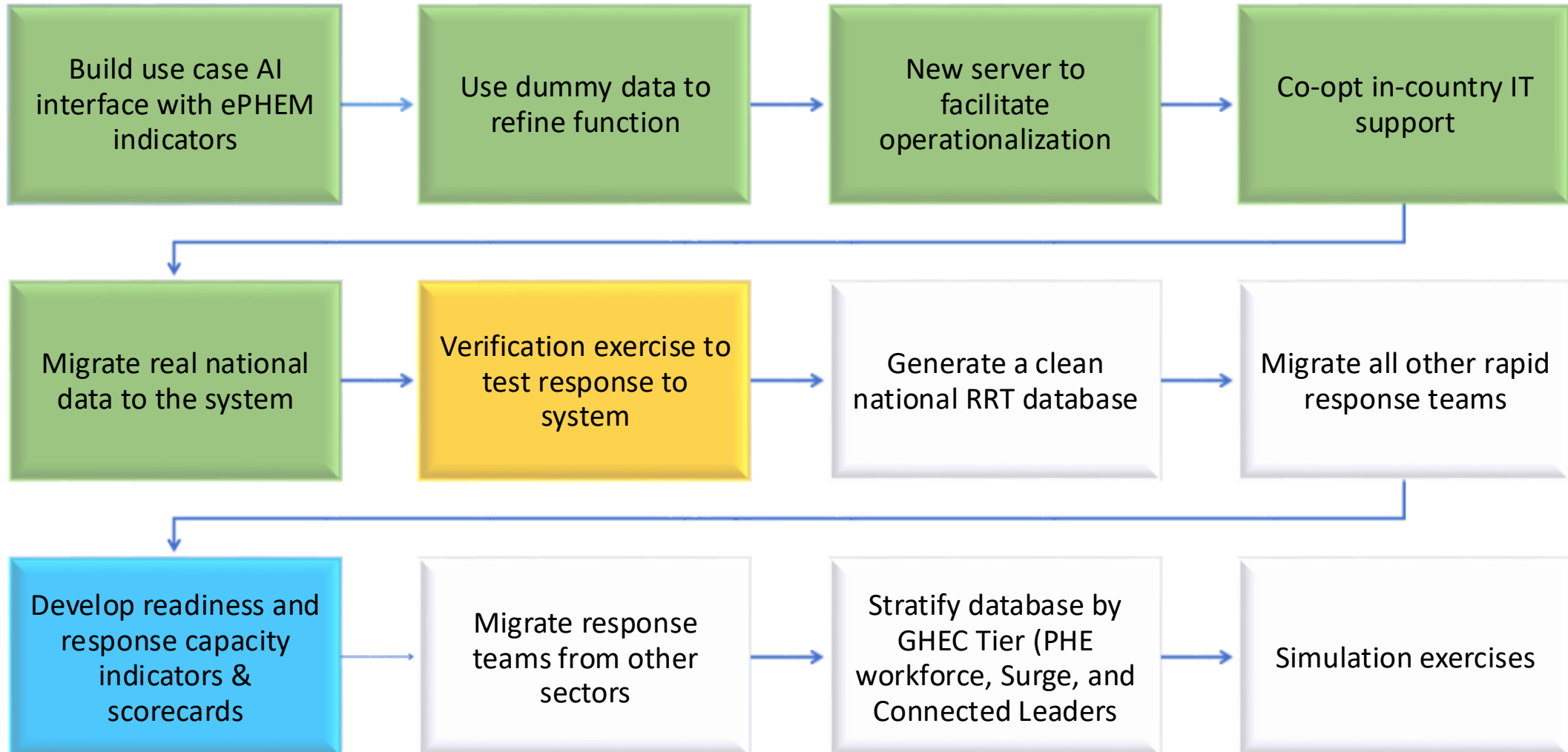
Road Map of Implementation





Use Case 3

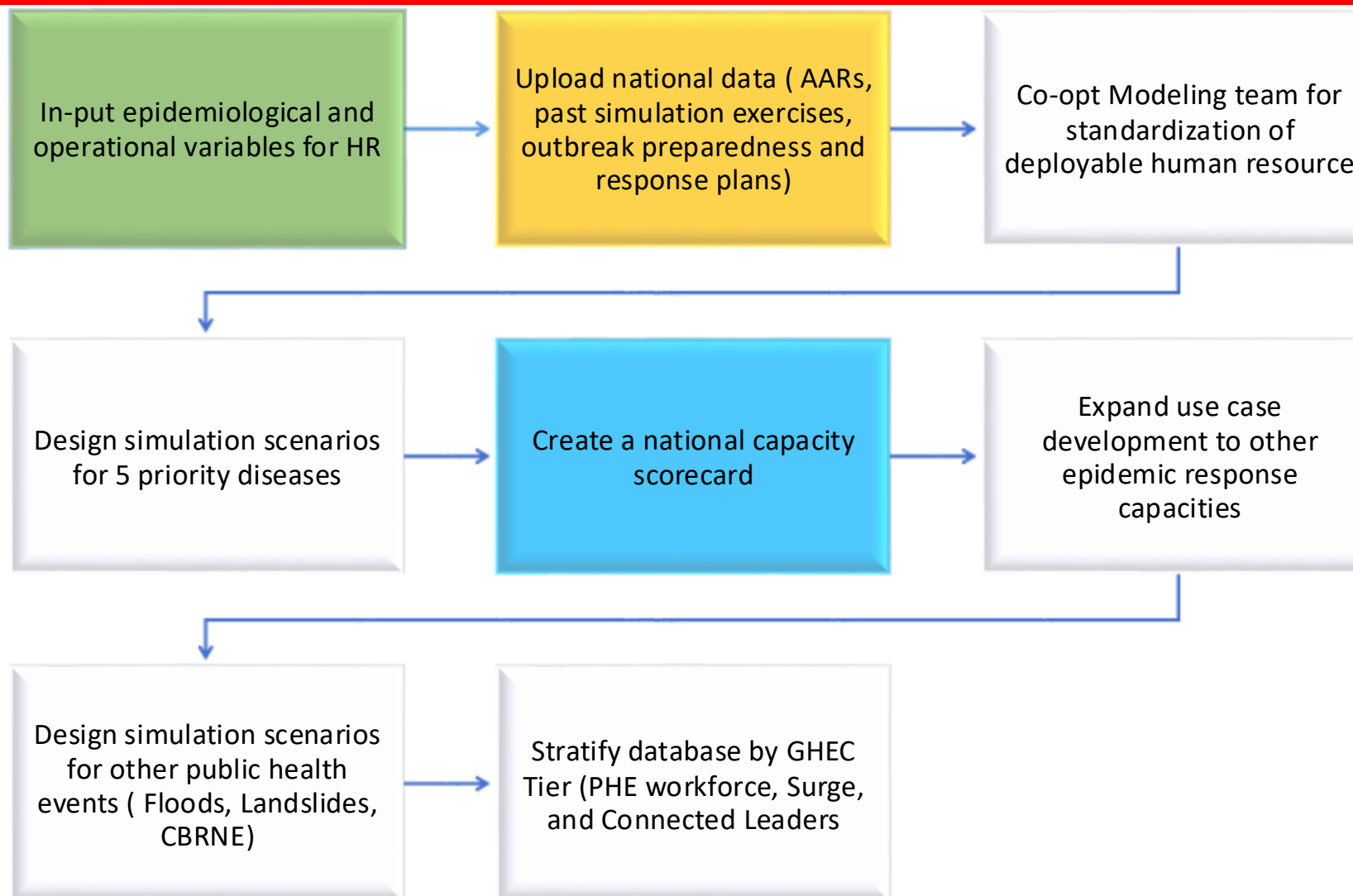
GHEC Structure (RRTs)





Use Case 1

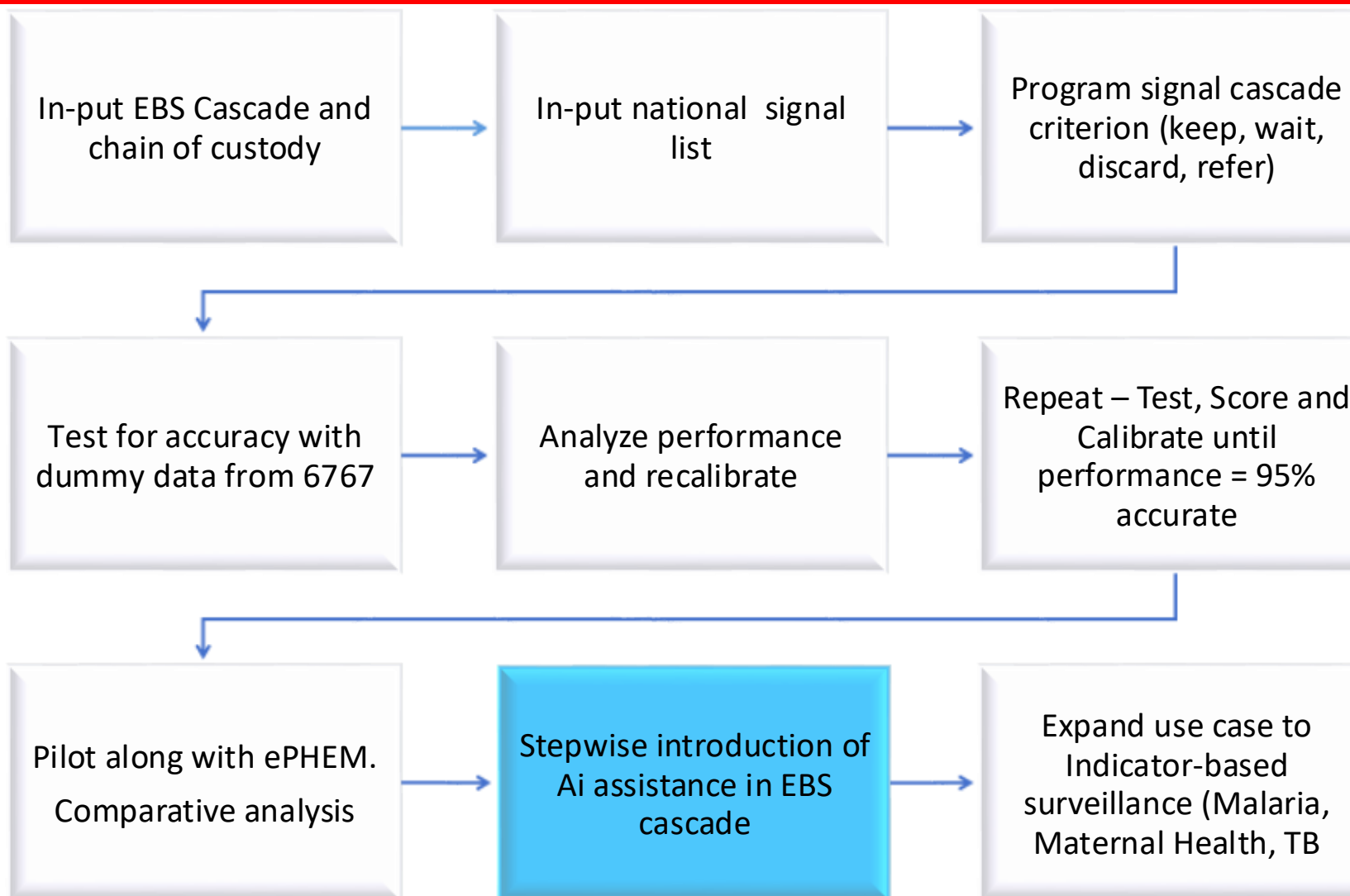
Infectious Disease Modeling (SimExs)





Use Case 2

Response Management (EBS)





Opportunities



1. Extension of AI assisted PHEM to the whole national incident management machinery
2. Real-time monitoring of incidence trends for other public health indicators e.g. maternal and child health, malaria, etc.
3. Predictive modeling for PHEs and other public health indicators
4. Extension to emergency human resource and event management in other sectors linked to public health
5. Extension to crossborder public health emergency management



Thank you for Listening





Q&A SESSION

If you wish to ask a question, please raise your hand and wait for the moderator to give you the floor. You can also write your question in the chat.



Sadaf Lynes,
Director of Collaborative
Surveillance, Workforce and
Health Emergencies, IANPHI

Next Steps and Concluding Remarks

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Agence de la santé
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Thank you!