GIHSN ANNUAL MEETING 17-19 JUNE 2026

19 June 2026 AM

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

Coordination IMPACT Healthcare

GIHSN ANNUAL MEETING, 19 JUIN 2026

BUILDING SHARED URGENCY AND UNITY IN FIGHT AGAINST INFLUENZA AND BEYOND

Wenqing ZHANG, WHO

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

Coordination IMPACT Healthcare

World Health Organization

Building Shared Urgency and Unity in the Fight against Influenza and Beyond

Dr Wenqing Zhang
Head, Global Respiratory Threats
Epidemic and Pandemic Management Department

GIHSN Annual Meeting 2026
Paris, France • 17-19 June 2026

Habituation & the Loss of Urgency

Repeated exposure

- Habituation
- Normalcy bias
- Complacency
- Vigilance decrement

https://homakhu.home.blog/2020/01/19/noahs-ark-the-great-flood/

Major Global Health Threats 2026

- **Different global frameworks use different lenses**
  - WHO emergency appeals, WHO pathogen lists, IHME burden data, and media/global risk reports like GAVI/WEF/Lancet
  - Outbreak response, pandemic risk, mortality burden, and expert synthesis
- **Consistently converging on the same core threats:**
  - Influenza
  - Antimicrobial resistance
  - Respiratory pandemics (coronaviruses) and
  - Climate- and zoonosis-driven infectious disease emergence

https://www.rural21.com/english/publications/detail/article/global-risks-report-2026.html

1918 - 2009

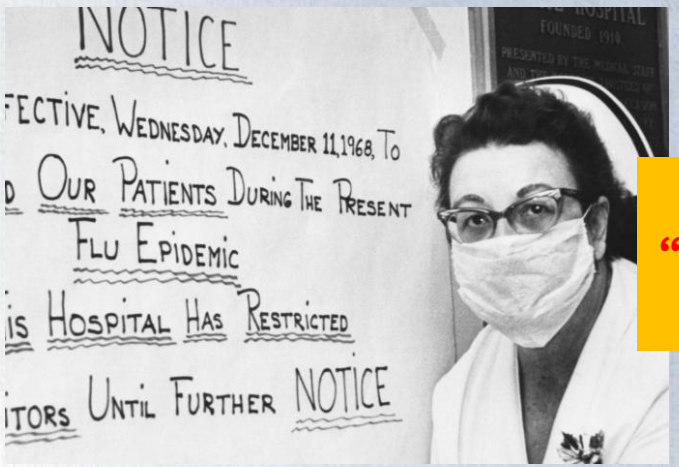
https://en.wikipedia.org/wiki/Spanish_flu

A(H1N1)
"Spanish flu"
1918

A(H2N2)
"Asian flu"
1957

https://www.theworldofchinese.com/2020/04/the-forgotten-flu/

A(HxNy)



A(H3N2)
"Hong Kong flu"
1968

A(H1N1)
"Swine flu"
2009

https://www.statnews.com/2019/06/11/h1n1-swine-flu-10-years-later/

Restrictions on visits to Cleveland's Grace Hospital and others were among the measures taken to slow the spread of the Hong Kong flu in 1968.

World Health Organization

Many Subtypes Avian Influenza Viruses

H10Nx

H1Nx variant

H3N2 variant

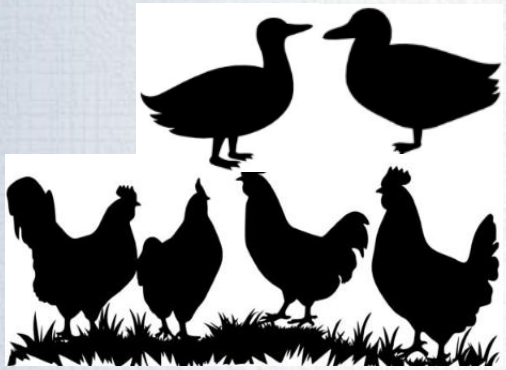
H5Nx

H9N2

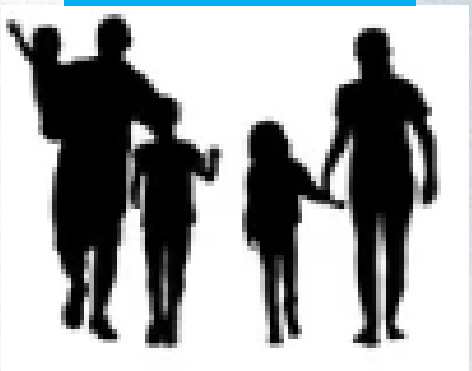
H7Nx

H3N8

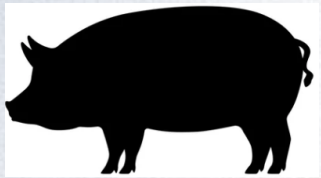
H6N1



Public Health



Swine Influenza Viruses



Multi-dimensional & Substantial Burden

Example of avian influenza A(H5)

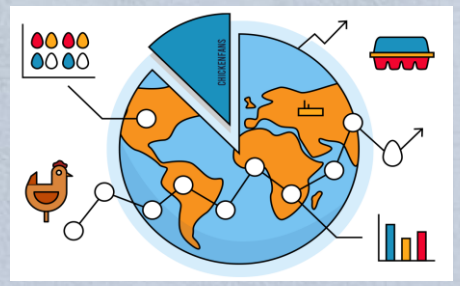
Poultry industry, livelihoods, food security

+633 million

poultry lost since 2005

(146 million in 2022)

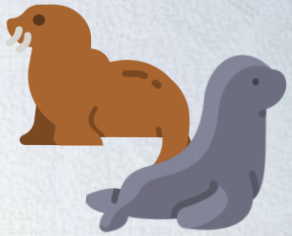
Global market and Trade



48 billion USD

global poultry market disrupted

Wildlife and biodiversity



>50,000

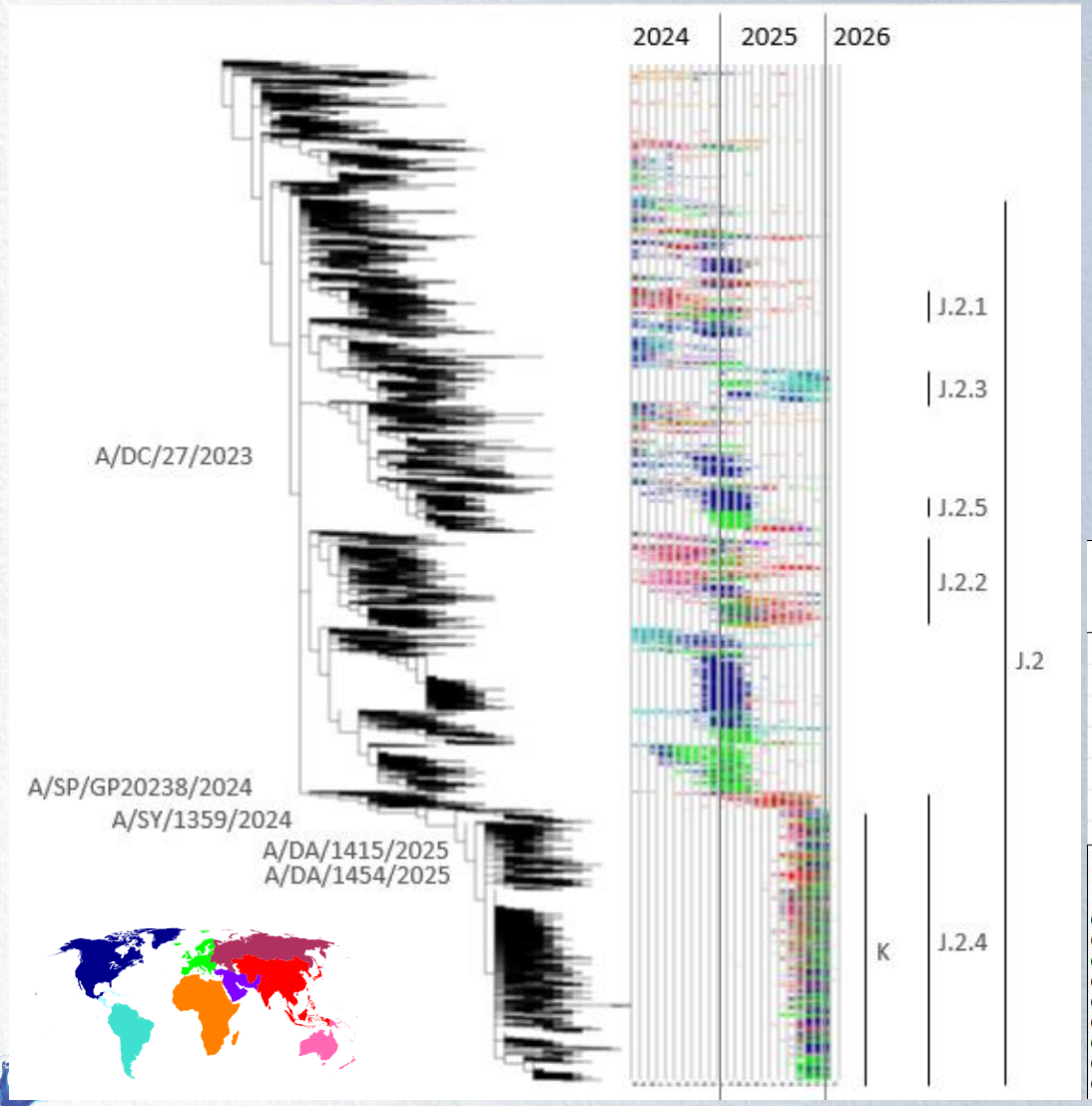
marine mammals lost during 2023

Public Health

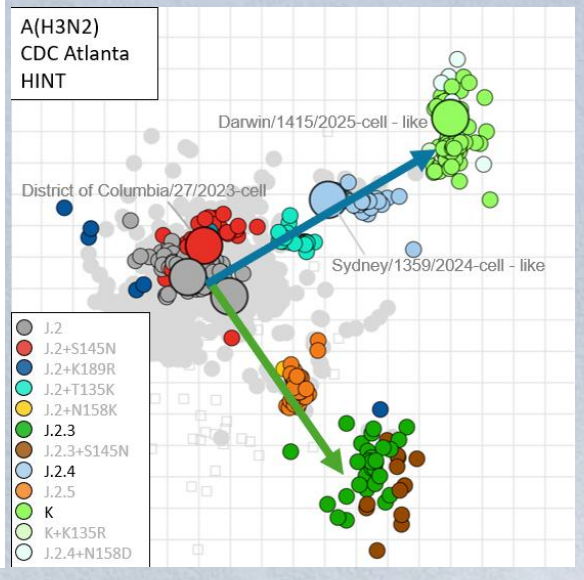
48% case-fatality

rate in humans (H5N1)

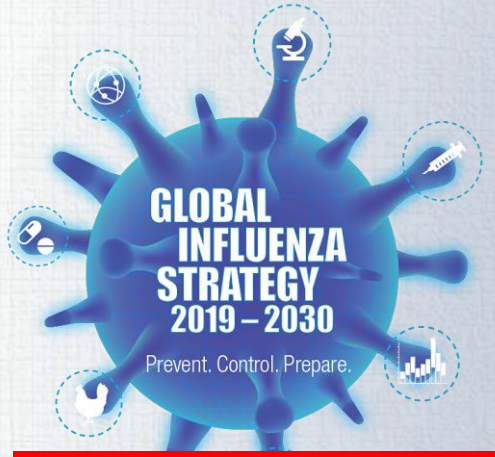
Seasonal Influenza



Seasonal influenza
causes
290,000 – 650,000
respiratory deaths alone
every year worldwide

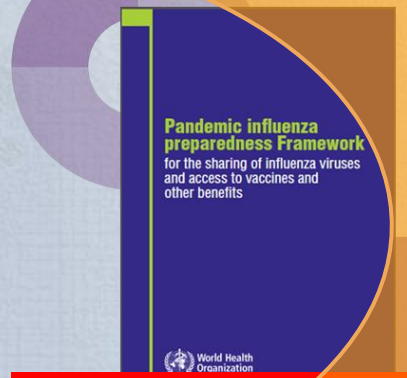


WHO Approach to Influenza



Global Strategy

Global Mechanism



Access and Benefit Sharing system

Partners

World Organisation for Animal Health
Founded as OIE

Food and Agriculture Organization of the United Nations

offlu
FAO
pertise on animal influenza

Global Influenza Hospital Surveillance Network

dcvmn
Developing Countries Vaccine Manufacturers Network

NIID
NATIONAL INSTITUTE OF INFECTIOUS DISEASES

CDC

THE FRANCIS CRICK INSTITUTE

St. Jude Children's Research Hospital

BEKTOP

GISAID

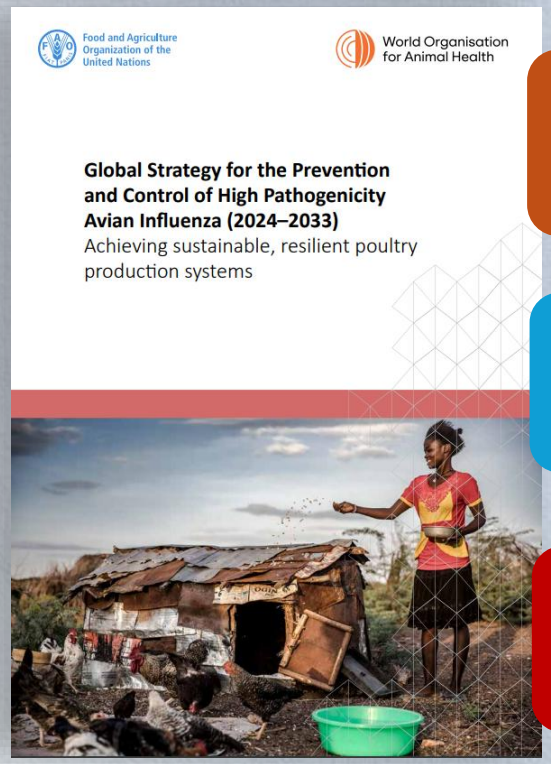
BILL & MELINDA GATES foundation

IFPMA

FAO and WOAH Approach to HPAI

World Health Organization

offlu
WOAH FAO
network of expertise on animal influenza
Since 2005



PREVENT

PROTECT

TRANSFORM

Through

One Health approach
Public-private partnerships
Long-term, transformative changes

GF-TADs
GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

Urgency and Unity

Opportunities

- **One Health in Action**
  Cross-sector collaboration is becoming operational, creating momentum for integrated surveillance and response.

Challenges

- **Divergent Objectives**
  Stakeholders across sectors often pursue different priorities, slowing alignment and coordinated implementation.

Actions

- **Accelerate Joint Actions** —
  Leverage the Quadripartite strategic framework to drive coordinated efforts on avian influenza and other shared threats.

Urgency and Unity

Opportunities

- **Strategic Global Framework**
  The Global Influenza Strategy (2019–2030) provides a coherent, long-term roadmap for systematic and coordinated global action.

Challenges

- **Geopolitical Headwinds**
  Conflicts and crises are undermining global collaboration, slowing implementation and weakening collective capacity.

Actions

- **Sustaining Global Efforts**
  Achieve 100% GISRS coverage and uphold high-quality operations to ensure the system remains robust, reliable, and globally trusted.

Urgency and Unity

Opportunities

- **Rising National Security Priority**
  Increasing investment as influenza gains strategic importance.

Challenges

- **Fragmented Global Efforts**
  Coordination remains uneven across countries and institutions.

Actions

- **Strengthen Global Coordination**
  Deepen shared science understanding to enable win-win outcome and more effective action.

Urgency and Unity

Opportunities

- **Established Global Architecture**
  Global Influenza Programme (GIP) – a long-standing, trusted mechanism coordinating GISRS since 1952.

Challenges

- **Fragile Coordination**
  WHO's financial pressures threaten GIP's global leadership; the hard-won global coordination of GISRS is not easily replicated by any other actor.

Actions

- **Sustain Political & financial support**
  Mobilize global commitment to preserve GIP's leadership and role, especially as GISRS marks its 75th anniversary.

Urgency and Unity

Opportunities

- **Pandemic Agreement Momentum**
  WHA adoption and ongoing PABS negotiations create openings for greater equity and access.

Challenges

- **System Uncertainty**
  Potential implications for the well – functioning PIP Framework and GISRS, especially re viruses and genetic sequence data sharing, remain unclear.

Actions

- **Protect established function & trust**
  Safeguard the integrity and value of GISRS built over 75 years and its associated functioning platforms e.g., GISAID - to avoid irreversible setbacks to its core functions.

Urgency and Unity

Opportunities

- **Integrated Approaches**
  Systems across sectors are becoming increasingly interconnected, enabling more holistic preparedness and response.

Challenges

- **Risk of Superficiality**
  Pathogen-agnostic models may dilute the depth and focus required for high-risk, pathogen-specific threats.

Actions

- **Balance Generalization with Specificity**
  Ensure integrated approaches remain grounded in the realities of specific pathogens that pose true global risks.

Urgency and Unity

Opportunities

- **Next-Generation Vaccine Platforms**
  mRNA and other emerging technologies open new avenues to strengthen influenza preparedness and response.

Challenges

- **Risk of Disruption**
  New platforms may unintentionally complicate or displace well-functioning systems and well-established seasonal vaccine workflows.

Actions

- **Operational Integration** — Begin now to embed next-generation platforms into existing systems, preserving workflow stability while expanding capability.

Urgency and Unity

Opportunities

- **AI-Enabled Transformation**
  Big data and AI are unlocking a new wave of analytical, predictive, and operational capabilities across the ecosystem.

Challenges

- **AI Reliability Risks**
  Gaps in foundational scientific understanding can shape or bias AI models, raising concerns as reliance on these tools expands across sectors, including policy decision-making.

Actions

- **Engage AI Technology**
  Build strong connections between AI specialists and disease/virus experts to start exploring and ensure models are scientifically grounded, reliable, and fit for real-world decision needs.

Individual limitations → Collective vigilance

- **Human nature can weaken preparedness**
  - Familiar threats can fade into the background.
  - Long periods without crisis can create a false sense of security.
  - Competing priorities can erode focus and investment over time.
- **Collective vigilance is our strongest safeguard**
  - Protect and strengthen **GISRS** - an irreplaceable global public good.
  - Sustain political commitment and **long-term financing** to preserve comprehensive and **globally coordinated** surveillance and response capabilities towards its optimal outcomes.
  - Integrate AI, big data, next-generation vaccines, and other innovations **to enhance - not replace** - the proven foundations of GIP and GISRS.

A Call for Unified Global Action

This is a decisive moment.

Only unified, decisive action now can safeguard global influenza and respiratory-pandemic protection built over the past 75 years for the decades ahead.

Acknowledgement

- GISRS
- GISRS associated national/sub-national surveillance systems
- Countries hosting GISRS institutions
- GISRS partners
- WHO Global Influenza Programme HQ, WHO Regional Offices

- FAO, WOAH, OFFLU

GIHSN ANNUAL MEETING, 19 JUIN 2026

VISION OF RESPIRATORY SURVEILLANCE IN THE POST-PANDEMIC ERA

Rick BRIGHT, Bright Global Health

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

Coordination IMPACT Healthcare

Respiratory Surveillance in the Post-Pandemic Era

From Routine Care to Global Resilience

Rick Bright, PhD
CEO, Bright Global Health

GIHSN Annual Meeting 2026
Château de Crécy-la-Chapelle
Paris, France

19 June 2026

A Remarkable Foundation

Building the Future of Respiratory Intelligence

13 YEARS
of continuous surveillance

26 COUNTRIES
across the network's history

100+ HOSPITALS
participating over the seasons

238,000+ PATIENTS
hospitalized with respiratory illness enrolled

36,000+ INFLUENZA CASES
laboratory confirmed and characterized

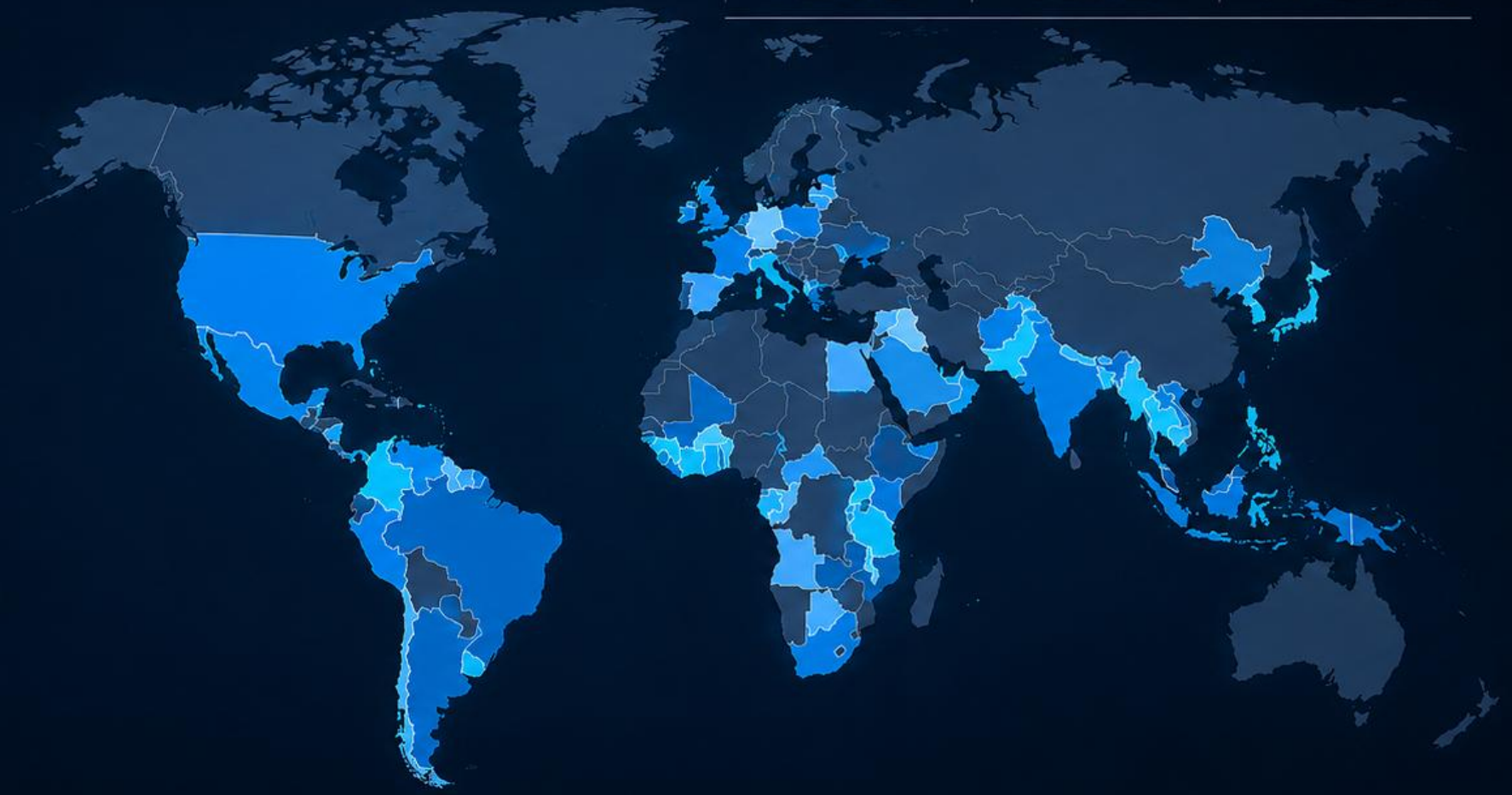
30+ PUBLICATIONS
informing policy and practice

2025 NETWORK

95 HOSPITALS

23 COUNTRIES

YEAR-ROUND SURVEILLANCE



More than a surveillance network.

A trusted platform linking clinical outcomes, virology, genomics, and public health across 26 countries.

Source: GIHSN Annual Report 2025

The Threat Landscape Has Changed

More pathogens.
More overlap.
More uncertainty.

TWINDEMICS
Two pathogens driving impact

TRIPLEDEMICS
Multiple pathogens compounding risk

CO-CIRCULATION
Multiple viruses circulating together

SPILLOVER
Animal-to-human transmission

RE-EMERGENCE
Old threats returning

Why Surveillance Matters More Than Ever

Understanding today. Protecting tomorrow.

Who is getting sick, and who is most at risk?
Surveillance reveals who needs help most.

How severe are infections, and is severity changing?
Surveillance tracks trends that save lives.

Are our interventions working, and where are the gaps?
Surveillance measures impact and guides action.

What do we need to know next, and in time to act?
Surveillance turns data into timely decisions.

From Observation to Understanding

Transforming surveillance into intelligence that improves lives.

OBSERVATION
We see what is happening.

INFORMATION
We organize the data.

INSIGHT
We identify what matters.

UNDERSTANDING
We apply context to interpret.

ACTION
We make decisions and take action.

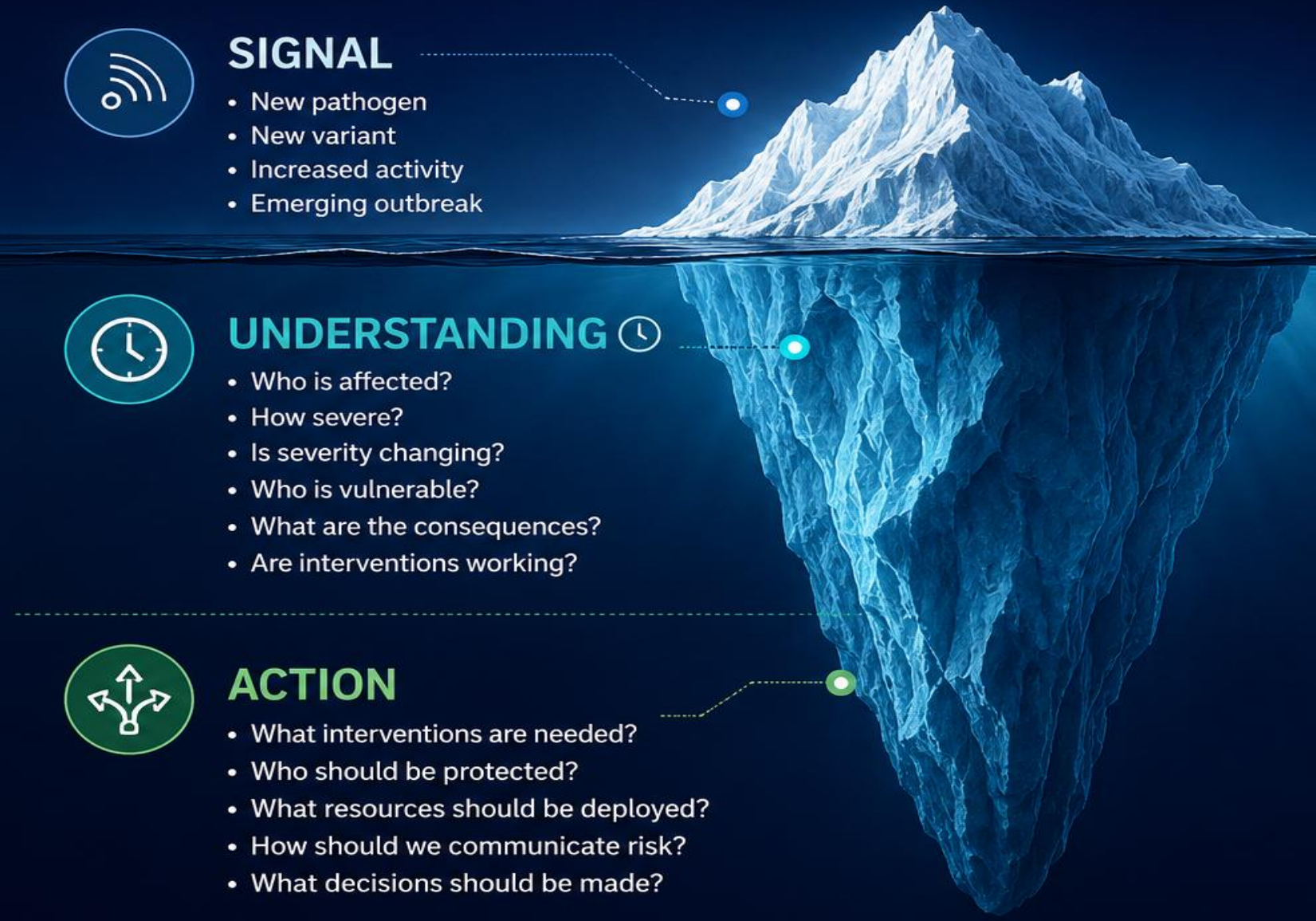
EARLY DETECTION
Seeing more, sooner

TIMELY UNDERSTANDING
Knowing what matters, in time to act

Severity. Burden. Outcomes. Intelligence for action.

Understanding Severity Matters

Not Every Signal Requires Action. Understanding Severity Guides Action.



SIGNAL

- New pathogen
- New variant
- Increased activity
- Emerging outbreak

UNDERSTANDING

- Who is affected?
- How severe?
- Is severity changing?
- Who is vulnerable?
- What are the consequences?
- Are interventions working?

ACTION

- What interventions are needed?
- Who should be protected?
- What resources should be deployed?
- How should we communicate risk?
- What decisions should be made?

The future of respiratory surveillance is not simply knowing what is circulating.

It is understanding what matters, in time to act.

Diagnostics & Surveillance

Different Perspectives. Shared Purpose.

Stronger Together. Better Answers.

DIAGNOSTICS

Focus on the individual

- Answer clinical questions
- Guide patient management
- Generate high-quality diagnostic data
- Improve outcomes for individuals

CONVERGENCE

SHARED UNDERSTANDING

Timely, reliable insights that improve care, protect communities, and save lives.

SURVEILLANCE

Focus on the population

- Detect trends and emerging threats
- Assess severity and burden
- Inform public health decision-making
- Guide policies and resource allocation

Timely data from the front line

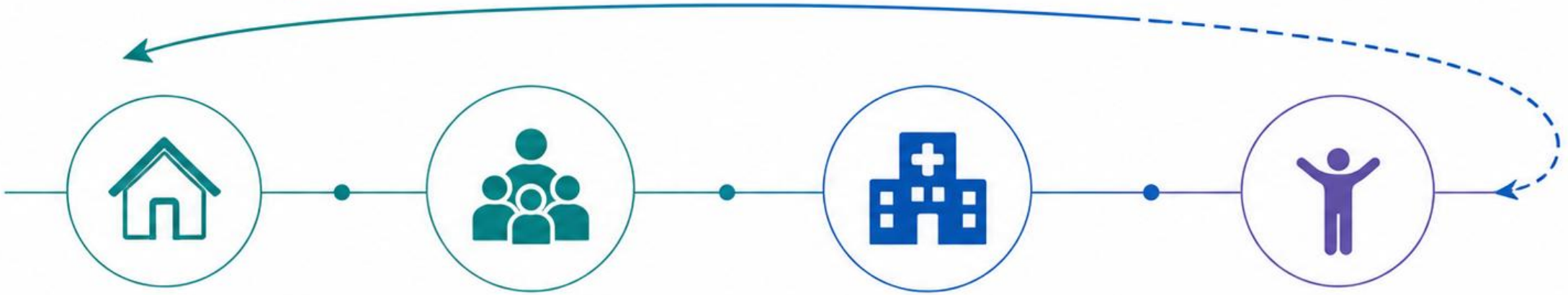
Actionable insights for better decisions

Better outcomes for all

Every diagnostic encounter can strengthen both individual care and population understanding.

Respiratory Surveillance Begins with Routine Care

Every encounter matters. Every encounter teaches.



COMMUNITY
Symptoms begin

PRIMARY CARE
Evaluation and diagnostic testing

HOSPITAL CARE
Treatment and clinical management

RECOVERY
Follow-up and return to health

CONTINUOUS LEARNING

Every encounter generates data. Every data point improves care and strengthens community and global understanding.

Every Community Connected

From Local Care to Global Understanding.

COMMUNITY

Health workers at the front line of care.

CLINICS

Routine care and timely diagnostics.

HOSPITALS

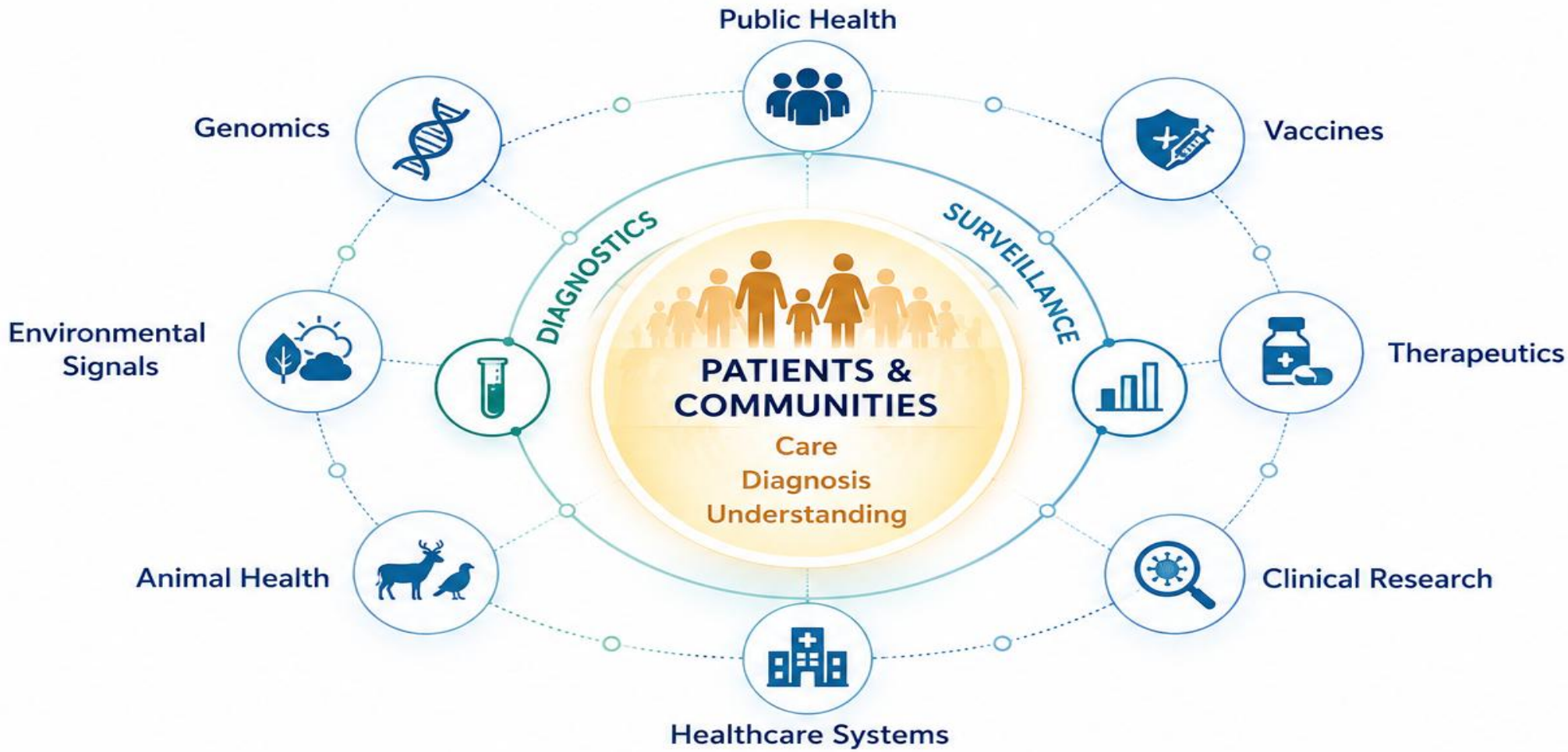
Advanced care and patient management.

GLOBAL NETWORK

Sharing data, knowledge, and solutions.

A Vision for 2035

A Continuously Learning Respiratory Health Ecosystem



The goal is not simply earlier detection.
The goal is timely understanding.

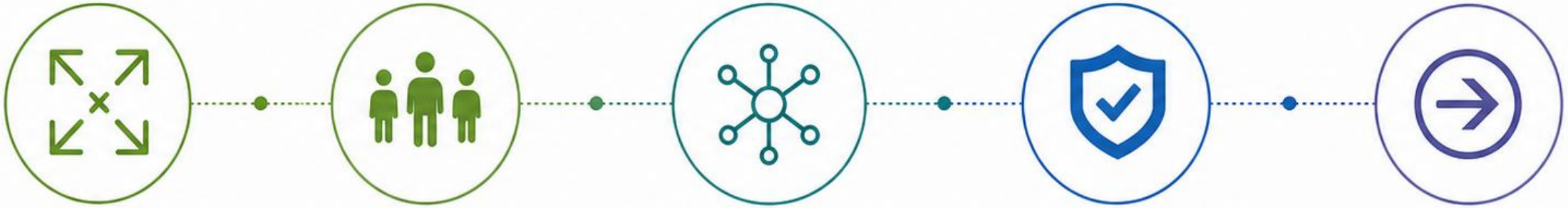
Trust Enables Learning

Trust. Respect. Responsibility. Mutual Benefit.

The goal is not uniformity. The goal is interoperability.

A Practical Path Forward

Small steps today. Big impact tomorrow.



1 EXPAND

Broaden high-quality surveillance and diagnostic reach.

2 BRING CLOSER

Integrate diagnostics, surveillance, and care systems.

3 CONNECT

Link data and systems across communities and borders.

4 BUILD TRUST

Strengthen standards, governance, and partnerships.

5 ACT

Turn timely understanding into earlier action.

Progress is a journey we take together.

Every step forward strengthens our shared resilience.

Three Questions for the Next Decade

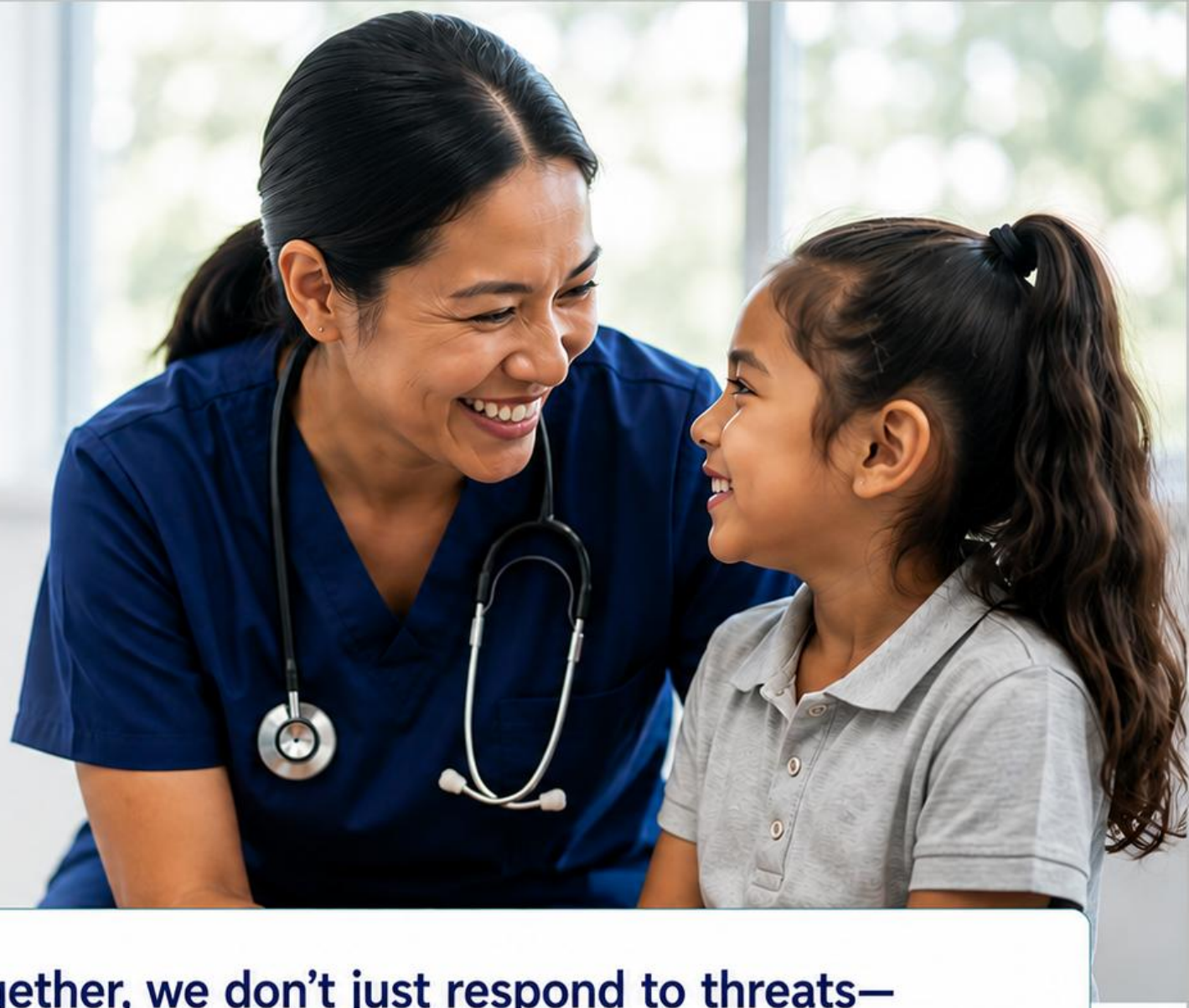
1. How do we shorten the time between signal, understanding, and action?
2. How do we ensure every community contributes to and benefits from surveillance?
3. How do we transform timely understanding into earlier action?




The answers will shape a healthier, more resilient world.

Resilience is built every day.

Patient by patient.
Community by community.
Together.



When we work together, we don’t just respond to threats—
we build a healthier, more resilient world for all.

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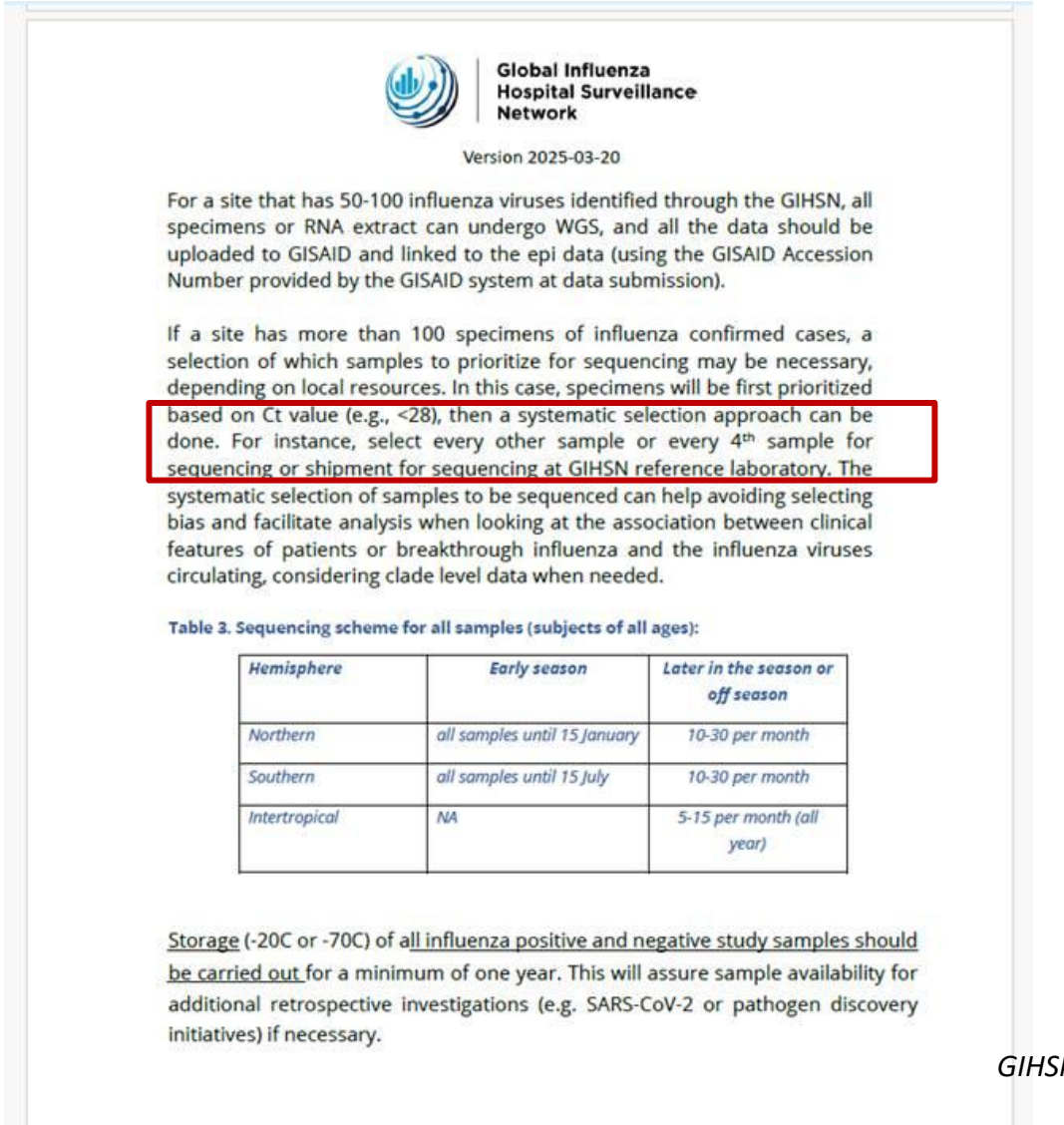
WORKSHOP 2 - GUIDING PRINCIPLES FOR SITES WGS SAMPLING/ IMPLEMENTATION & TIMELINES

Laurence Torcel-Pagnon, Foundation for Influenza Epidemiology

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

WORKSHOP 2 – CURRENT SITUATION (2025-26 SEASON)



Global Influenza Hospital Surveillance Network

Version 2025-03-20

For a site that has 50-100 influenza viruses identified through the GIHSN, all specimens or RNA extract can undergo WGS, and all the data should be uploaded to GISAID and linked to the epi data (using the GISAID Accession Number provided by the GISAID system at data submission).

If a site has more than 100 specimens of influenza confirmed cases, a selection of which samples to prioritize for sequencing may be necessary, depending on local resources. In this case, specimens will be first prioritized based on Ct value (e.g., <28), then a systematic selection approach can be done. For instance, select every other sample or every 4th sample for sequencing or shipment for sequencing at GIHSN reference laboratory. The systematic selection of samples to be sequenced can help avoiding selecting bias and facilitate analysis when looking at the association between clinical features of patients or breakthrough influenza and the influenza viruses circulating, considering clade level data when needed.

Table 3. Sequencing scheme for all samples (subjects of all ages):

Hemisphere	*Early season*	*Later in the season or off season*
Northern	*all samples until 15 January*	*10-30 per month*
Southern	*all samples until 15 July*	*10-30 per month*
Intertropical	*NA*	*5-15 per month (all year)*

Storage (-20C or -70C) of all influenza positive and negative study samples should be carried out for a minimum of one year. This will assure sample availability for additional retrospective investigations (e.g. SARS-CoV-2 or pathogen discovery initiatives) if necessary.

GIHSN protocol 2025-26 season

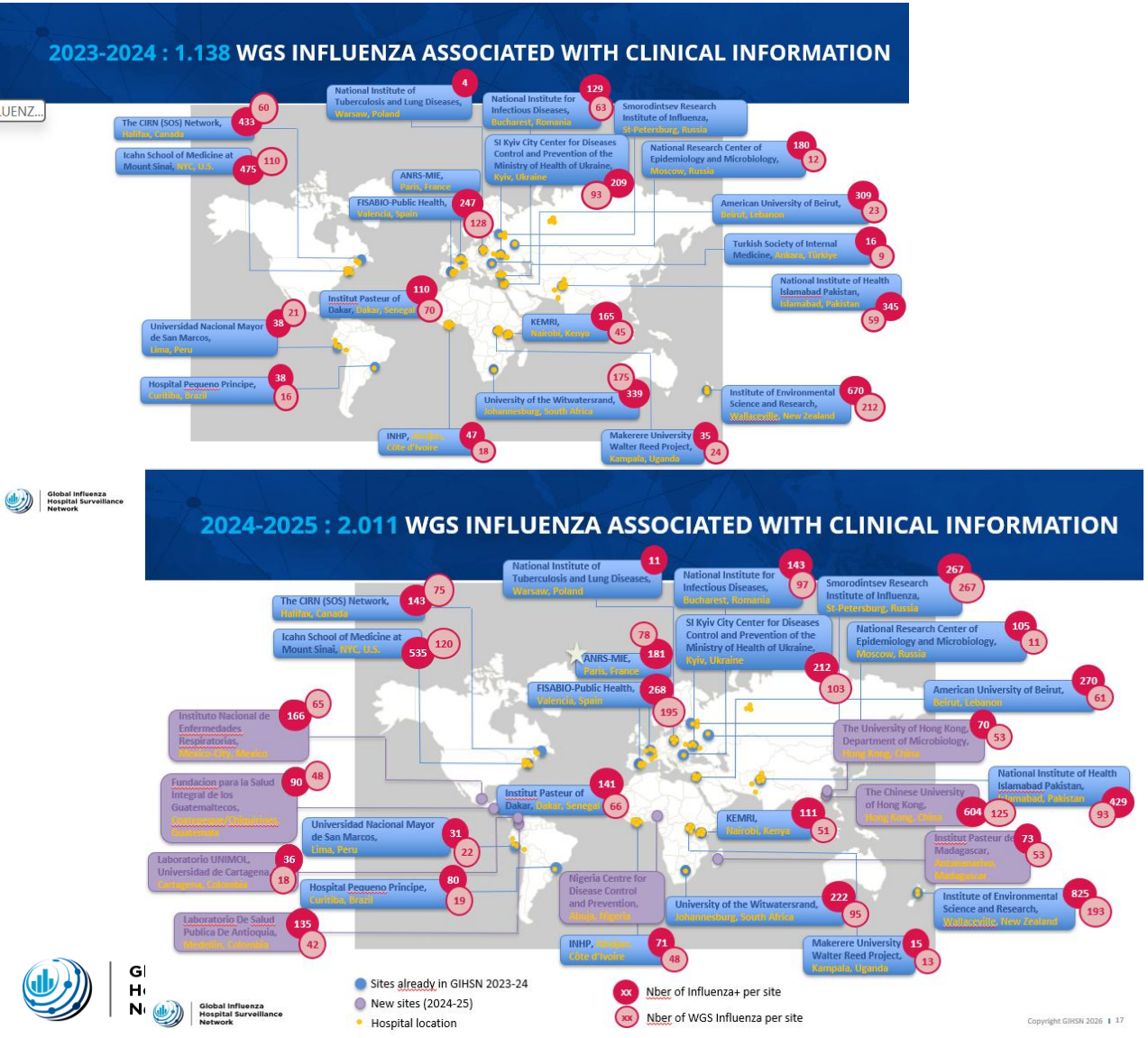
<u>As per protocol and letter of engagement:</u>

- ❑ 50 to 100 flu WGS

- ❑ If site has ≥ 100 flu+,
WGS based on Ct value & systematic selection of samples (e.g., every 4th sample or samples received on begining and end of the week…). *NOT select samples based on severity or specific characteristics of the host population that we may be interested in evaluate*

- ❑ Share WGS data regularly and in time for WHO reports preparation prior to the bi-annual Vaccine Composition Meetings (February and September)

WGS SCALE UP FROM LAST SEASONS



As of 2024-25:

Volum capacity

- ❑ **6 sites already doing > 100 Flu WGS**
- ❑ **10 sites able to do > 100 WGS (>100 Flu+)**
- ❑ **5 sites in between 70-100 Flu+**

Laboratory

- ❑ **Almost all sites perform WGS locally**

2 sites sent to NIC Lyon or WHO CC

Timelines prior VCM

GIHSN bi-annual report to WHO prior to the VCM	Feb		Sep	
	Nb of sequences	Nber of sites	Nb of sequences	Nber of sites
2024	135	8	603	12
2025	220	10	810	18
2026	1013	21		

WORKSHOP 2 - MOVING FORWARD (2026-27 SEASON)

Under the new call, the foundation requires each site to deliver a minimum of **100 influenza virus whole genome sequences (WGS)**

Discussion with some sites will be considered apart: Are there limitations related to the number of flu-positive cases available? Would incorporating additional hospitals enhance sample collection capabilities?

❑ Current sites practices:

What sampling methodologies are sites currently implementing for WGS?

How feasible is the systematic selection proposed in the GIHSN protocol?

❑ Expand flu WGS capacity within budget constraints

For WGS Obj 1*: before VCMs, consider leveraging National Influenza Centers (NICs) for additional WGS support (refer to survey "*GIHSN Sites interface with national systems*")

For WGS Obj 2*: for end-of-season supplementation, consider additional WGS batches to enhance dataset completeness? Establish sample shipment procedures to WHO Collaborating Centers (CCs)

❑ Timeliness Enhancement

How can we accelerate WGS data uploads to GISAID to ensure timely availability for NIC Lyon analysis prior to WHO Vaccine Composition Meetings

** See slide notes*

COFFEE BREAK

GIHSN ANNUAL MEETING, 19 JUNE 2026

RESEARCH PROJECTS LEVERAGING THE GIHSN PLATFORM

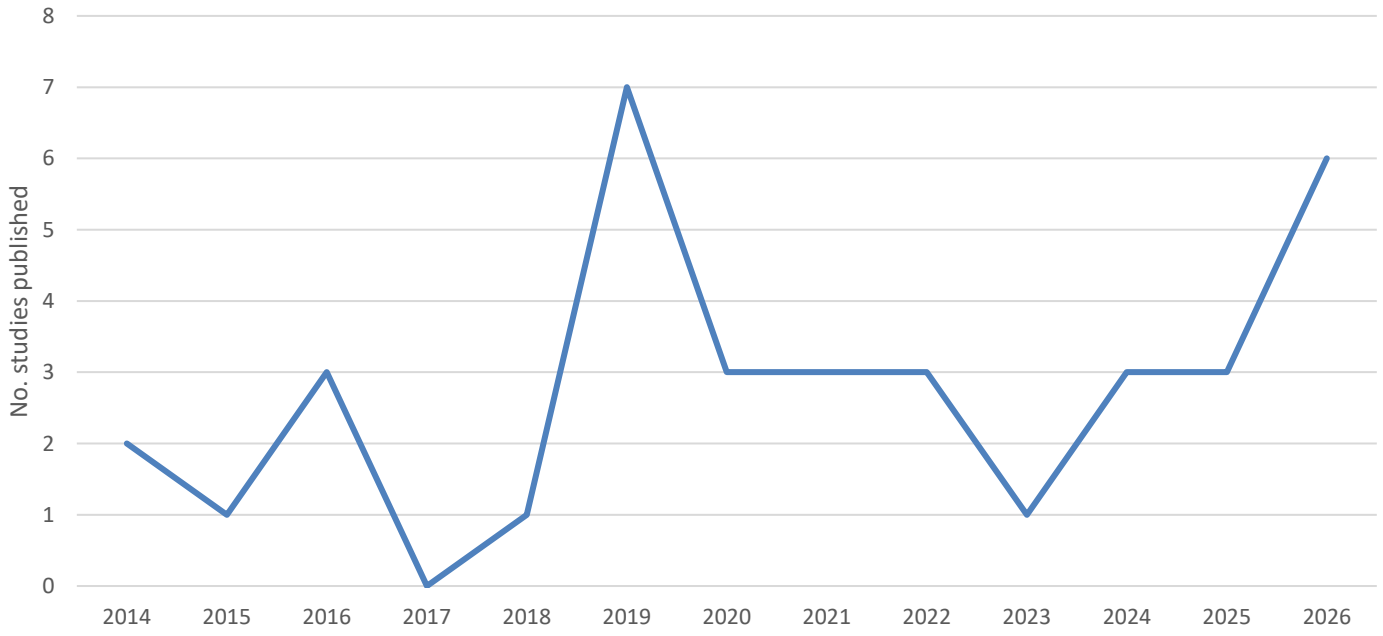
Sandra CHAVES, Foundation for Influenza Epidemiology

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

PUBLICATION OVER THE YEARS

- More variety in publications over the years, with other viruses in evidence, genomics and site-level driven manuscripts *(36 overall published manuscripts to date)*

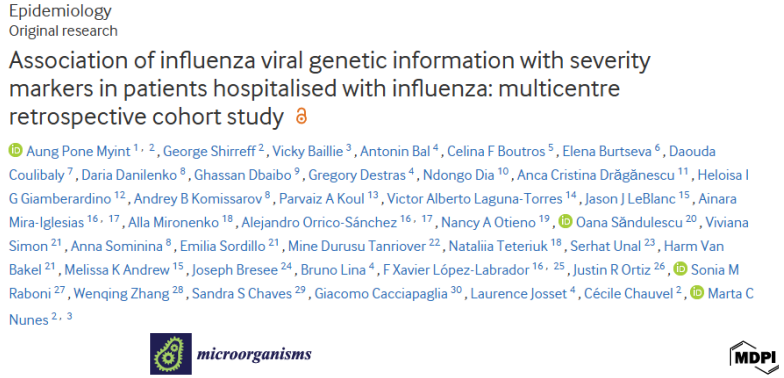



Open Forum Infectious Diseases
MAJOR ARTICLE

IDSA OXFORD

Clinical Characteristics and Severity of Rhinovirus/Enterovirus–Associated Hospitalizations: A Multicountry Analysis From the Global Influenza Hospital Surveillance Network, 2017–2024

Angelica M. Revilla, Sonia M. Raboni, Heloisa I. G. Giamberardino, Melissa K. Andrew, Nazish Badar, Vicky Baillie, Elsa Baumeister, Elena Burtseva, Ghassan Dbaibo, Ndongo Dia, Anca Cristina Drăgănescu, Parvaiz A. Koul, Viviana Simon, Emilia Sordillo, Harm van Bakel, Anna Sominina, Tao Zhang, F. Xavier López-Labrador, Ainara Mira-Iglesias, Alejandro Orrico-Sánchez, Q. Sue Huang, Joseph Bresee, Justin R. Ortiz, Marta C. Nunes, and Sandra S. Chaves


Epidemiology
Original research

Association of influenza viral genetic information with severity markers in patients hospitalised with influenza: multicentre retrospective cohort study

Aung Pone Myint, George Shirreff, Vicky Baillie, Antonin Bal, Celina F Boutros, Elena Burtseva, Daouda Coulibaly, Daria Danilenko, Ghassan Dbaibo, Gregory Destras, Ndongo Dia, Anca Cristina Drăgănescu, Heloisa I G Giamberardino, Andrey B Komissarov, Parvaiz A Koul, Victor Alberto Laguna-Torres, Jason J LeBlanc, Ainara Mira-Iglesias, Alla Mironenko, Alejandro Orrico-Sánchez, Nancy A Otieno, Oana Săndulescu, Viviana Simon, Anna Sominina, Emilia Sordillo, Mine Durusu Tanriover, Nataliia Teteriuk, Serhat Unal, Harm Van Bakel, Melissa K Andrew, Joseph Bresee, Bruno Lina, F Xavier López-Labrador, Justin R Ortiz, Sonia M Raboni, Wenqing Zhang, Sandra S Chaves, Giacomo Cacciapaglia, Laurence Josset, Cécile Chauvel, Marta C Nunes

microorganisms
MDPI

Article

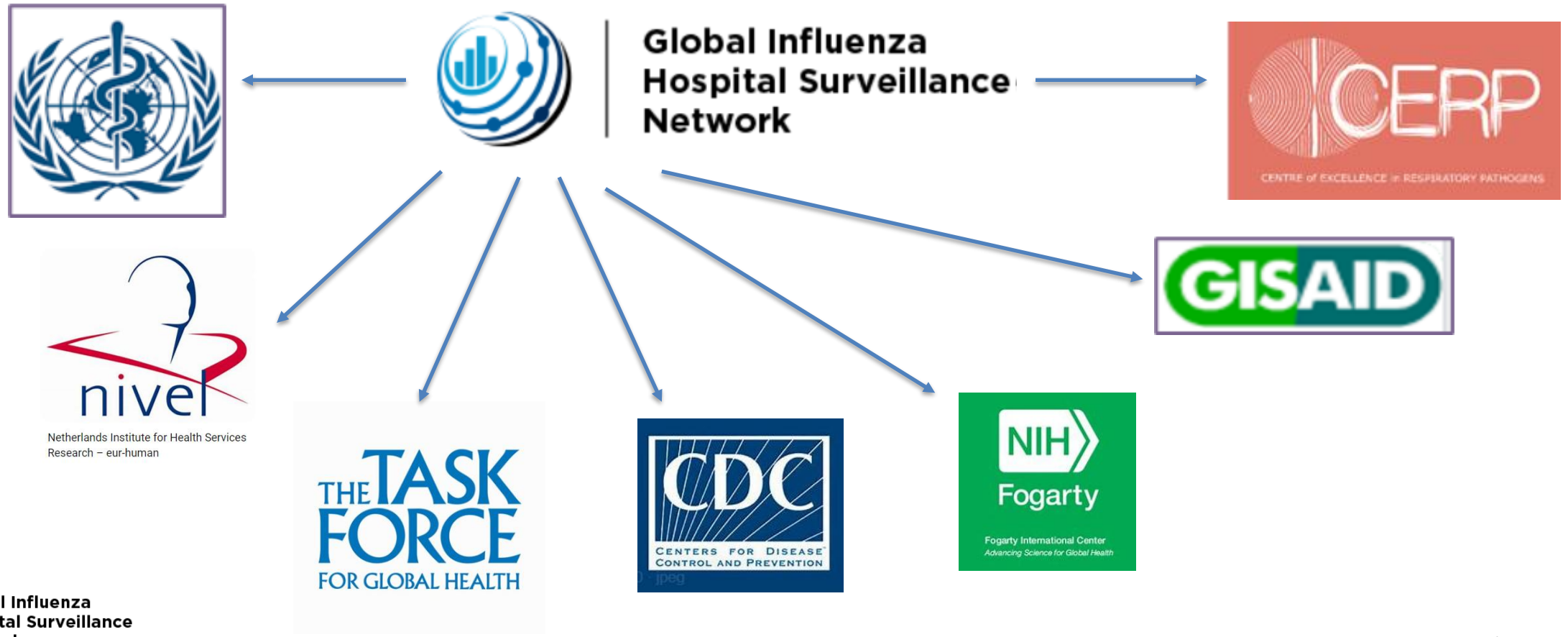
Clinical Outcomes and Molecular Epidemiology of Human Metapneumovirus in Romanian Hospitalized Patients

Ovidiu Vlaicu, Oana Săndulescu, Anca Streinu-Cercel, Anca Cristina Drăgănescu and Victor Daniel Miron

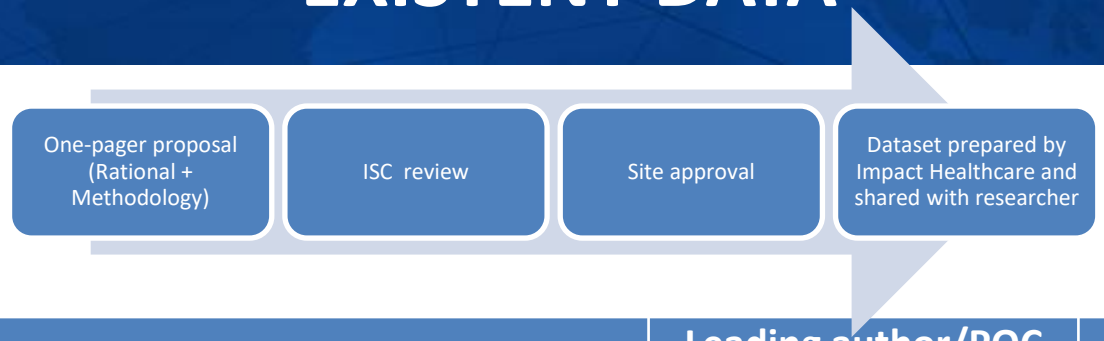

Epidemiologic characteristics and clinical outcomes of respiratory syncytial virus in hospitalized care in Lebanon: a prospective observational study

Sarah Khafaja, Sarah Merhi, Stephanie Damaj, Saja Issaoui, Celina F. Boutros, Habib Al-Kalamouni, Nadia Soudani, Yolla Youssef, Zeinab El-Zein, Samer Bou-Karroum, Ahmad Chmaisse, Magda Haj, Zeina Houry, Sarah Chamseddine, Nour Youssef, Rouba Shaker, Amal Naous, Soha Ghanem, Chantale Lahoud, Imad Shokr, Rita Feghali, David Breish, Amani Haddara, Maria Karam, Hassan Zaraket and Ghassan S. Dbaibo

COLLABORATIONS BEYOND GIHSN STAKEHOLDERS



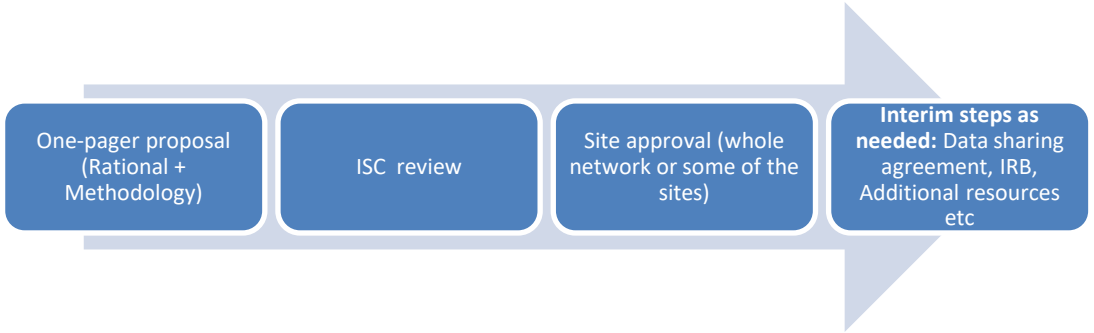
ONGOING ANALYTICAL PROJECTS LEVERAGING EXISTENT DATA



Title	Leading author/POC	Status
Influenza-Associated Hospitalizations and Predictors of Severity in Older Adults: A Multinational GIHSN Surveillance Study	M K Andrew	Co-authors review
Global trends in use of influenza antivirals among hospitalized laboratory-confirmed influenza patients	Jeanette Dawa	Writting up (incorporated updated data)
Comparative Severity of RSV and Influenza in Hospitalized Adults 2017-2024	M Nunes	Manuscript being finalized
Clinical Characteristics and Severity of RSV and Influenza in Hospitalized Children: Findings from the GIHSN, 2017–2024	M Nunes	Manuscript being finalized
Human metapneumovirus associated hospitalizations (all ages)	Angelica	Abstract validated, analysis on-going
GISAID FluCluster-AI - Innovations in virus transmission cluster analysis	S Maurer-Stroh (GISAID)	Abstract under review by sites
Influenza severity in young hospitalized children by country income level	Anuradha Haridhas	Manuscrit to be submitted to coauthors for review

POC: Sandra CHAVES, MD, MSc (Scientific officer, FIE)
Catherine COMMAILLE-CHAPUS, Coordination & Data Management, Impact Healthcare

RESEARCH PROJECTS THAT MAY INCLUDE COLLECTION OF NEW DATA FROM ALL OR SOME OF THE SITES



Title	POC	Status
EV-D68 surveillance in selected GIHSN sites	Miranda Delahoy	US CDC
Leverage GIHSN data to monitor severity of seasonal influenza	Aspen Hammond	WHO - HQ
Hospital based catchment area estimation to support BoD – pilot study with Kenya and Brazil	Marta Nunes/Jeanette Dawa	In progress (led by CERP)

POC: Sandra CHAVES, MD, MSc (Scientific officer, FIE)
Catherine COMMAILLE-CHAPUS, Coordination & Data Management, Impact Healthcare

GIHSN ANNUAL MEETING, 19 JUIN 2026

EV-D68 SURVEILLANCE IN GIHSN: NEXT STEPS AND MECHANISMS FOR SUPPORT

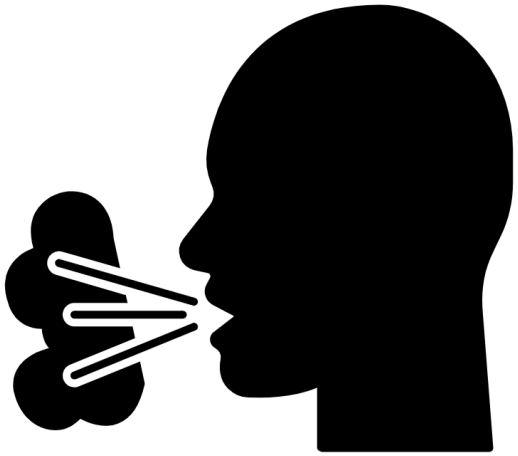
Miranda DELAHOY, US Centers for Disease Control & Prevention

Foundation for Influenza Epidemiology

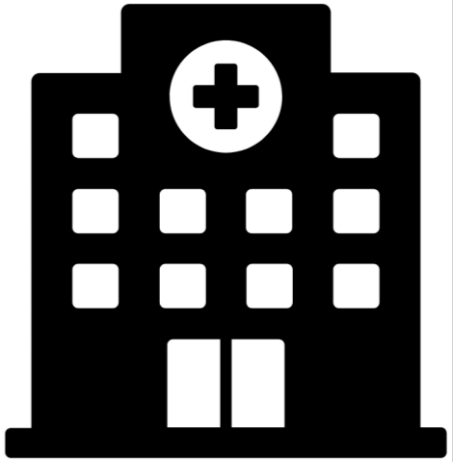
Sous l'égide de Fondation de France

Coordination IMPACT Healthcare

ENTEROVIRUS D68 (EV-D68) CAN CAUSE SERIOUS ILLNESS AND STRAIN HEALTHCARE CAPACITY



severe respiratory illness



healthcare capacity strain

acute flaccid myelitis (AFM)

Global Influenza Hospital Surveillance Network

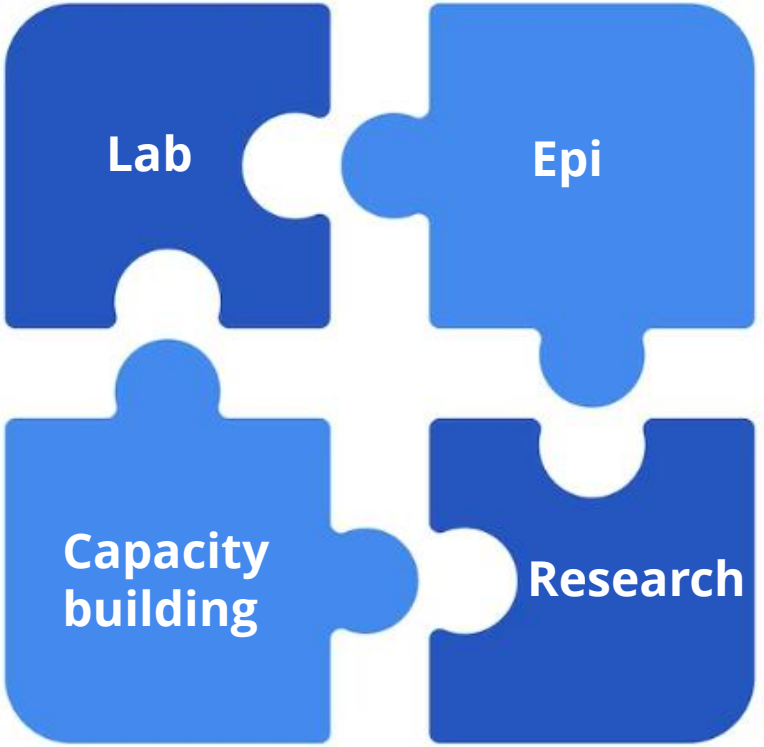
EV-D68 GLOBAL SURVEILLANCE INITIATIVE: GIHSN & CDC

CDC is collaborating with GIHSN to conduct EV-D68 surveillance in a subset of sites.

Short-term goals:

- Launch 1-year pilot in late 2026/early 2027
- Finalize list of sites to participate by the end of July (2026)

Note: Participation is optional



Global Influenza Hospital Surveillance Network

PRIMARY OBJECTIVES OF EV-D68 GLOBAL SURVEILLANCE

1. **Describe EV-D68 detections and percent positivity among all hospitalized children prospectively enrolled** in select GIHSN sites, including positivity by country and age group.

2. **Describe the clinical presentation & severity of illness among these children hospitalized with EV-D68** and explore any geographic variations in clinical & demographic characteristics among these patients.

CONSIDERATIONS FOR CHOOSING PILOT SITES & SITE REQUIREMENTS

- Sites **enrolling higher numbers of children annually**
- **Ability and willingness to test for EV-D68 & share data**
- **General interest** in participating and able to meet project commitments

Additional consideration for CDC testing support:

- Established **relationship with CDC's International Reagent Resource (IRR)**

PROGRESS AND UPDATES

1. **Protocol and project determination** approved by CDC ethics
2. CDC **secured funding for primer & probe reagents** and clarified shipping procedures
3. CDC is **developing a training** for external use of its EV-D68 assay
4. CDC has contracted to **create a proficiency panel to validate EV-D68 assays**
5. We have **streamlined the process of uploading EV-D68 data** into the GIHSN database (instead of using individual datasets and separate data use agreements)
6. The focus will be on **prospective testing**
7. Abbott not currently supporting

EV-D68 TESTING

POTENTIAL MECHANISMS FOR EV-D68 TESTING

- Sites can **use NP swabs and extracted RNA collected as part of GIHSN** surveillance activities.

Options for obtaining EV-D68 assays:

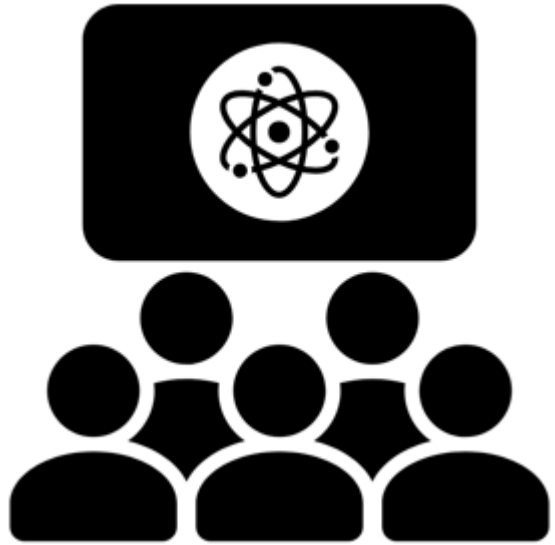
- **Sites may conduct EV-D68 testing using their own assays**.
- **CDC can provide EV-D68 primer and probe reagents** through CDC's International Reagent Resource (IRR).
  - Available in 3–6 months while new external validation is pending
  - Does not include RT-PCR enzyme or additional laboratory supplies (e.g., tubes/tips)
- **CDC can provide EV-D68 primer sequence** so sites can order primers from a primer production company.
  - Sites not covered by or wanting to coordinate with IRR

TESTING SUPPORT FROM CDC'S IRR

- Several GIHSN sites have a laboratory that already utilizes the IRR; new sites may be added
- Sites must be responsive in communicating & arranging IRR shipments
    - Pick up may be at an airport
    - Custom/import fee may apply
- It would be most efficient to coordinate with IRR shipments coming in for other purposes (e.g., polio, influenza)

ADDITIONAL CDC TECHNICAL SUPPORT

- Sites using their own assays may be **provided a proficiency panel** to validate their results against CDC's assay.*
- CDC will hold a **virtual training for its EV-D68 assay** in the coming months.
- CDC can provide technical assistance and troubleshooting for assay use and validation.



Global Influenza Hospital Surveillance Network

*proficiency panel developed; distribution pending funding confirmation

Collaboration and data sharing

DATA SHARING

- EV-D68 test results can be uploaded with other GIHSN data
- CDC will request a de-identified subset of GIHSN data through the normal scientific committee process
  - Sites have ownership of their data and will be included in any reporting
  - Sites have the normal mechanisms to opt out of data sharing

SITE RESPONSIBILITIES (EV-D68 SURVEILLANCE)

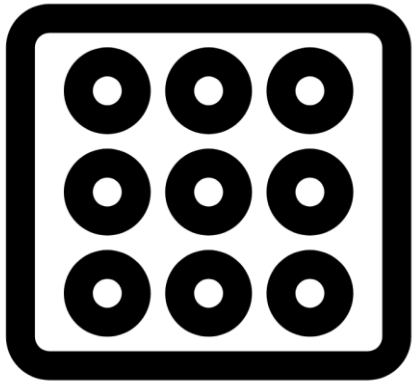
- Coordinate and conduct EV-D68 testing on all enrolled children.*
- Regularly upload EV-D68 laboratory results with GISHN data.
- Attend biannual and *ad hoc* EV-D68 surveillance meetings (virtual).
- Review reports and collaborate on potential publications.

Global Influenza Hospital Surveillance Network

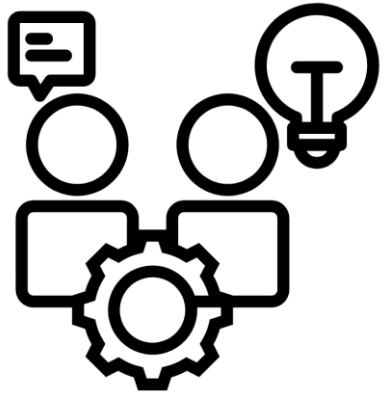
*if conducting general EV/RV testing, it would be acceptable to test only children who were EV/RV positive

BENEFITS OF COLLABORATION

share & publish information



EV-D68 testing training & support

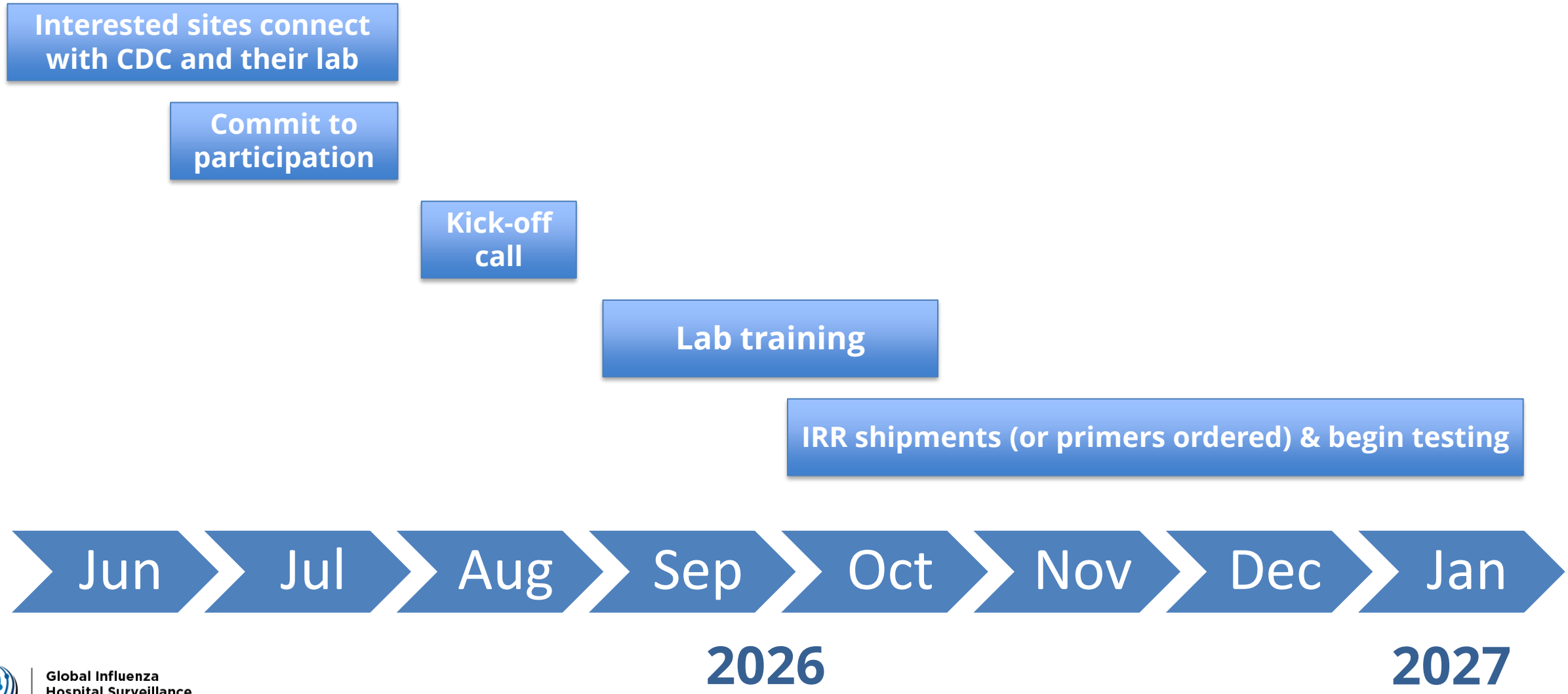


laboratory & epi collaboration

epidemic monitoring & preparedness

Timeline and longer-term goals

TIMELINE: JUNE 2026–JANUARY 2027



Global Influenza Hospital Surveillance Network

LONGER-TERM GOALS & POTENTIAL FUTURE DIRECTIONS

Longer-term goals

- Assess data on an ongoing basis with a report after 1 year of data collection: will inform next steps

Potential future directions

- Expand to more sites
    - Sites with CDC influenza NOFO may be able to get additional costs covered after pilot year
- Site-led research projects with technical assistance from CDC (e.g., sequencing and looking for potential EV-D68 neurovirulence factors)

STEPS FOR INTERESTED SITES

- Contact Miranda Delahoy (vuo0@cdc.gov; US CDC)
- Connect with your site's IRR laboratory representative or otherwise arrange to order assays; confirm laboratory support and supplies are available
- Look out for correspondence about kick-off meeting & assay training

Thank you!

GIHSN/Impact Healthcare:
Sandra Chaves, Catherine Commaille-Chapus

Division of Viral Diseases, CDC:
Adriana Lopez, Terry Ng

GIHSN PIs and site personnel

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

Images from the Noun Project, credits: IcoLabs, Adrien Coquet, Vectorstall, Dicky Prayudawanto, Anconer Design, Kiran Shastry, feri ulan Taufiq, Toha Yasin, Soon Deok, Isaac haq

GIHSN ANNUAL MEETING, 19 JUNE 2026

LEVERAGE GIHSN DATA TO MONITOR SEVERITY OF SEASONAL INFLUENZA

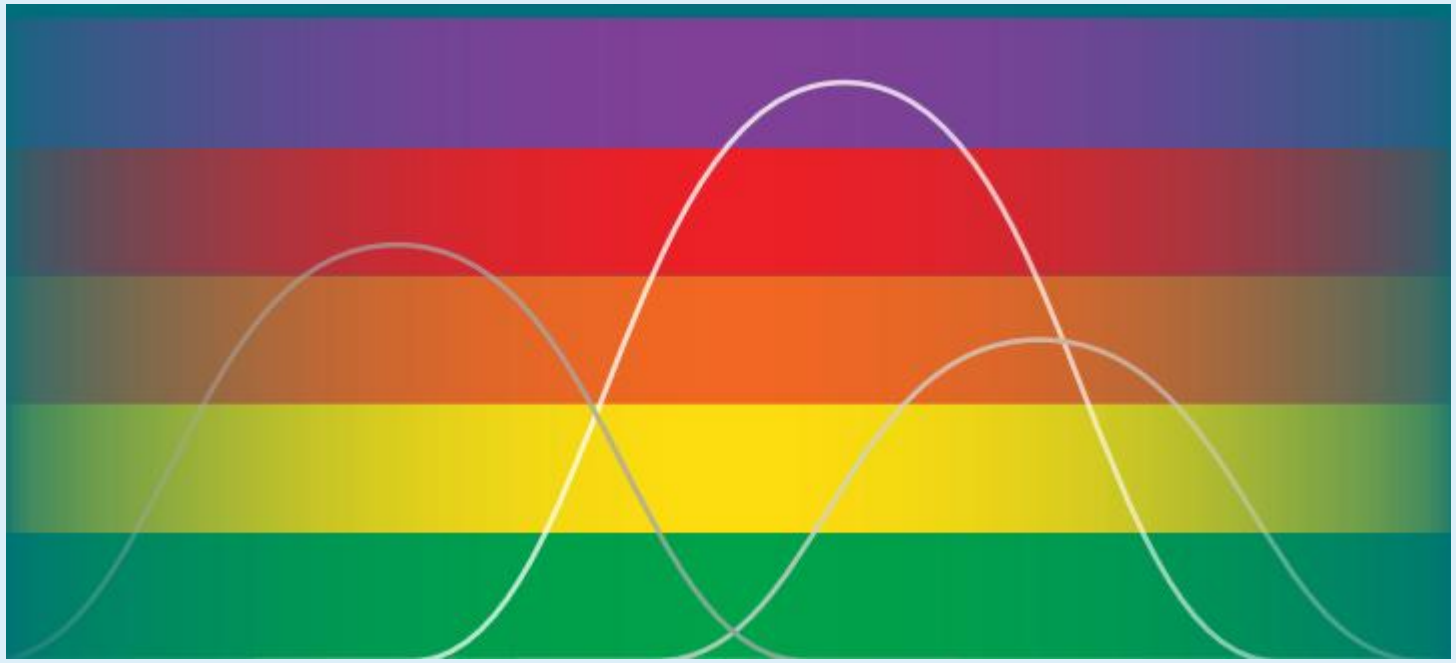
Aspen HAMMOND, WHO

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

Coordination IMPACT Healthcare

Research projects leveraging the GIHSN platform
Severity assessment



Aspen Hammond
Global Influenza Programme
19 June 2026

World Health Organization

Background

- Severity assessments enable public health authorities, policymakers and healthcare providers to make informed decisions, allocate resources effectively, and implement appropriate response measures.
  - The **WHO Pandemic Influenza Severity Assessment (PISA) framework** provides a structured approach to using routine surveillance data to assess epidemic and pandemic influenza severity, **using routine surveillance data**.
  - Early in a pandemic or epidemic, there may be a need to capture more information on clinical severity than is captured or available in routine surveillance. The **GISRS Unity Studies** protocols include a **Rapid assessment of clinical severity protocol**, which is a **discrete, time-limited study.**
- Collaboration between the Global Influenza Programme (GIP) of WHO and GIHSN may address gaps in severity assessment, improving both timeliness and validity of severity assessments.

World Health Organization

PISA: Comparing current influenza activity to that of the past

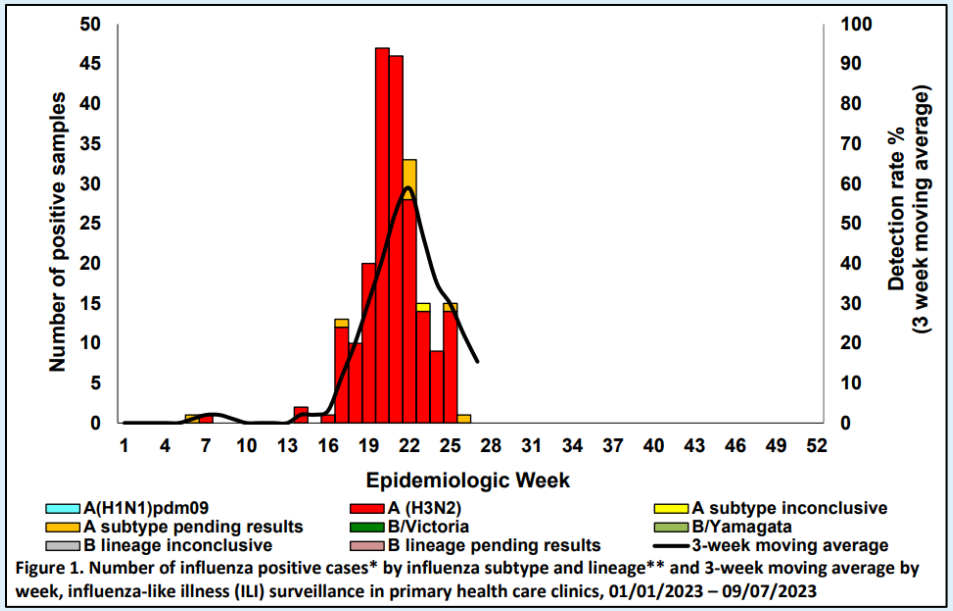


Figure 1. Number of influenza positive cases* by influenza subtype and lineage** and 3-week moving average by week, influenza-like illness (ILI) surveillance in primary health care clinics, 01/01/2023 – 09/07/2023

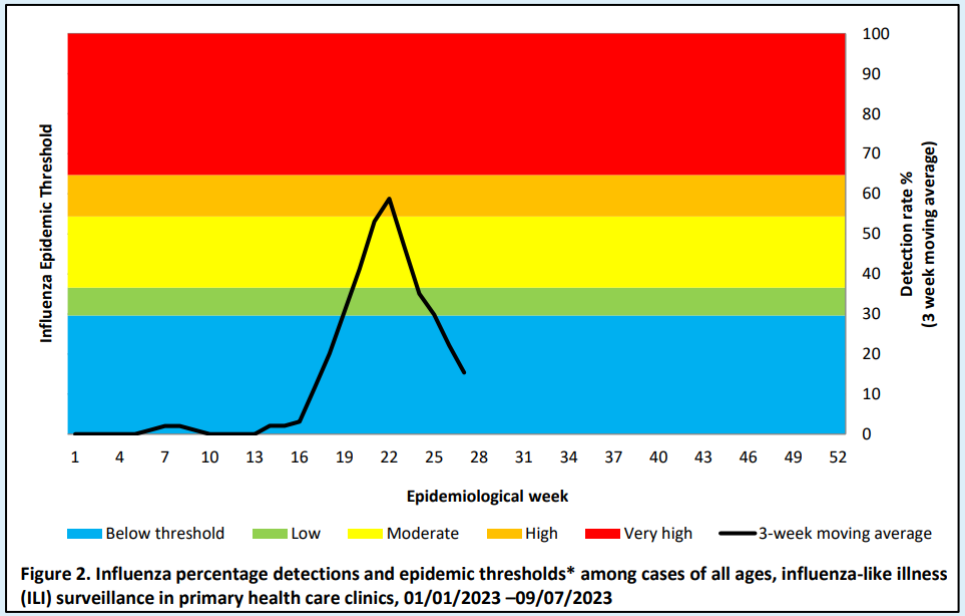


Figure 2. Influenza percentage detections and epidemic thresholds* among cases of all ages, influenza-like illness (ILI) surveillance in primary health care clinics, 01/01/2023 –09/07/2023

Thresholds put current activity in the context of historic activity from same surveillance system, specifically the peak values of previous seasons.

World Health Organization

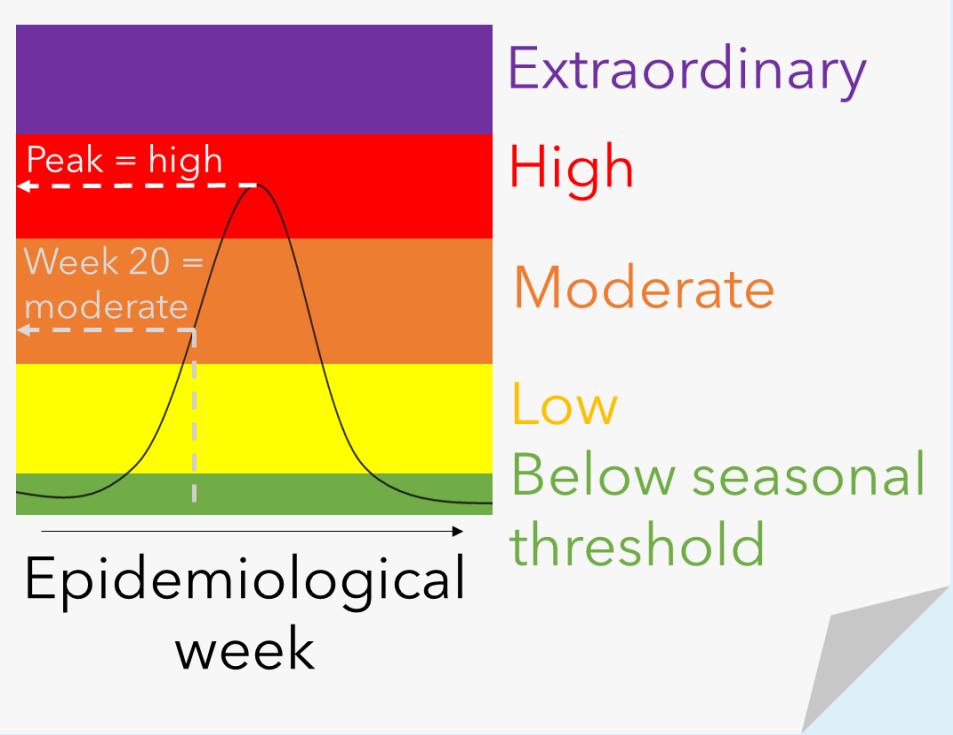
PISA objectives

How would you characterize current influenza activity?

How does activity compare to previous epidemics and pandemics?

By using historical data to calculate thresholds and comparing these thresholds to current activity, PISA can help to:

- Visualize influenza and respiratory illness seasonality
- Interpret and contextualize current activity
- Inform public health and social measures (PHSM)



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Guidance: https://apps.who.int/iris/handle/10665/259392

PISA indicators

1

Transmissibility

Assess level of community transmission through presentations with mild illness

e.g. lab-confirmed influenza cases, consultations for influenza-like illness

2

Seriousness of Disease

Assess seriousness of disease in those infected through **proportions or ratios of severe disease** relative to less severe outcomes

e.g. death: hospitalization for influenza, ICU admissions : hospital admissions for influenza

3 **Morbidity and mortality**

e.g. influenza hospitalizations, SARI deaths

4 **Impact on healthcare capacity**

e.g. proportion of beds occupied for influenza/respiratory illness/all causes, healthcare workforce absenteeism

Parameters are from routine surveillance systems

Each indicator is assessed and reported separately

World Health Organization

PISA in 4 steps

1. Select parameters from existing surveillance systems to inform the PISA indicators

2. Use historical data to calculate thresholds

3. Interpret data to assess severity

- Transmissibility and impact parameters assessed **weekly**
- Seriousness of disease assessed at **peak and end of season using cumulative data**

4. Report and communicate

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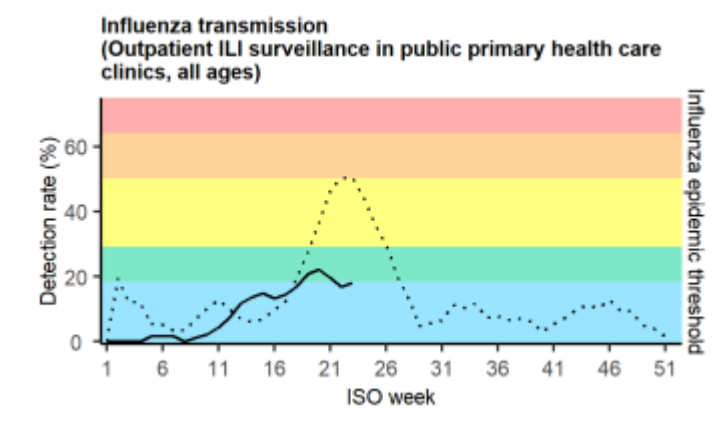
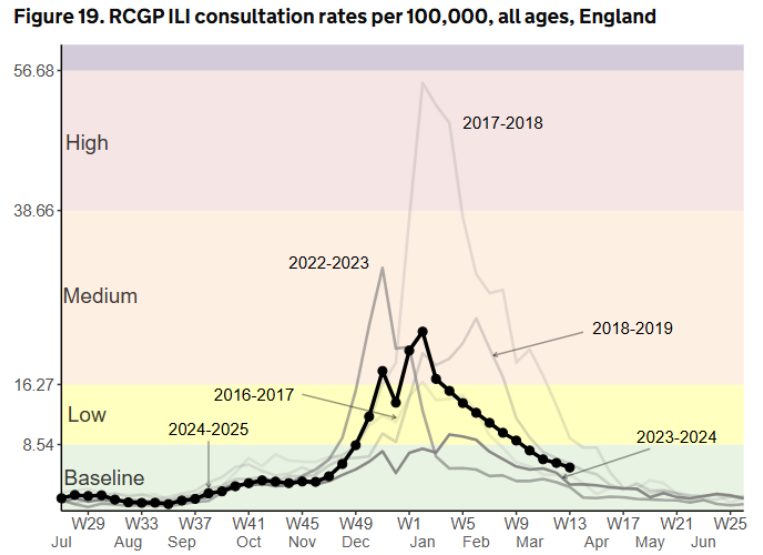
PISA: Country examples

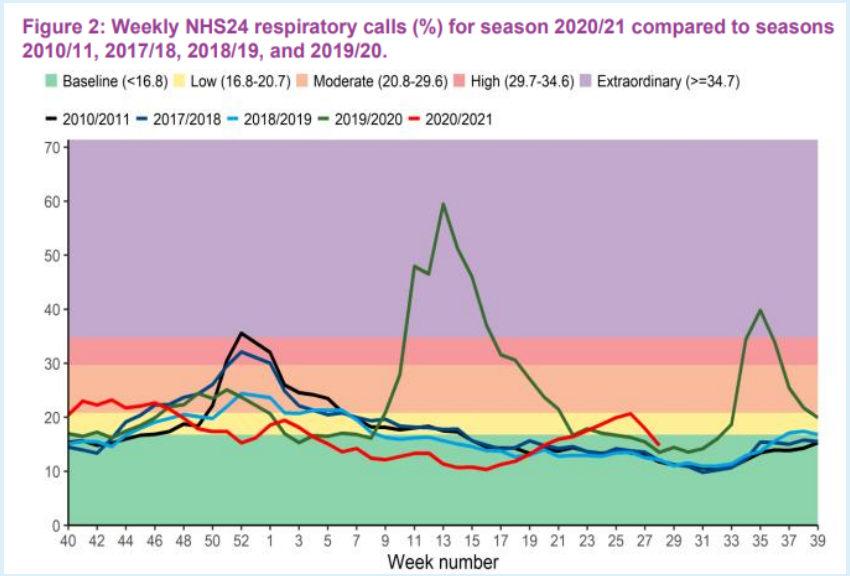
South Africa



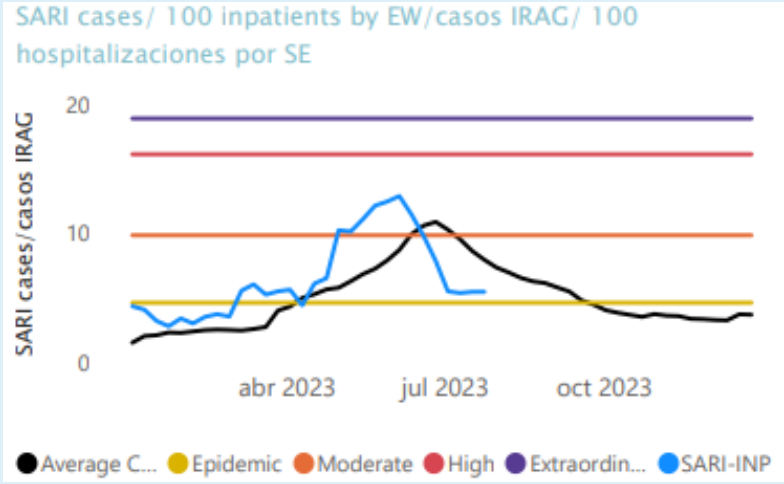
England



Scotland



Chile



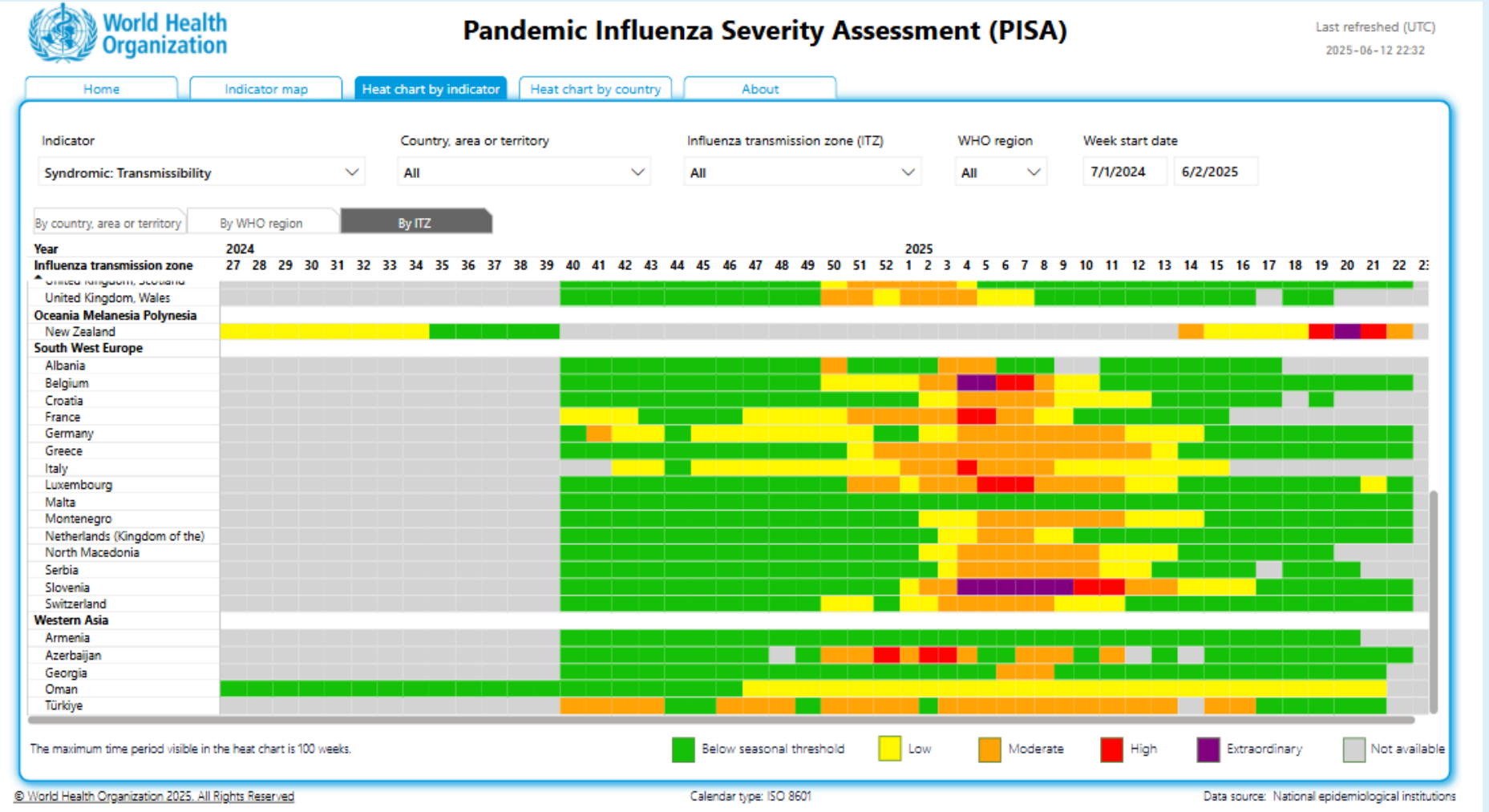
PISA is intended as a flexible tool which countries can use to report influenza and respiratory virus activity.

The approach used and the presentation style can be adapted to each country.

Enhance the interpretation and the usefulness of their surveillance data.

PISA: Global influenza situation awareness

- No raw data is reported to WHO, only weekly indicator scores and contextual information
- WHO uses this data to assess global influenza severity and provide better information and resources to Member States
- Countries benefit from global outputs, for instance by visualizing trends in neighbouring countries



[WHO PISA dashboard]

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Collaboration with GIHSN network

Gaps remain in the current PISA framework:

- Timely and geographically representative assessments
- Validation of methods using other data sources
- **Seriousness of disease** and **impact on healthcare capacity indicators** remain comparatively underinformed

Specific objectives:

1. Prospective and retrospective assessments of GIHSN data: can they **improve early assessment of severity**, especially **seriousness of disease** and **impact on healthcare capacity indicators**?
2. Assess feasibility of using GIHSN data for **rapid clinical severity assessment** during an influenza pandemic

World Health Organization

1. Prospective and retrospective assessment of **seriousness of disease** indicator

2

Seriousness of Disease

Assess seriousness of disease in those infected through **proportions or ratios of severe disease** relative to less severe outcomes

PISA	GIHSN
• ICU admissions: hospital admissions for influenza	• Counts of influenza-confirmed cases requiring ICU admissions
	• Counts of influenza-confirmed cases requiring mechanical ventilation
• Influenza/SARI/respiratory illness patients requiring oxygen support: total influenza/SARI/respiratory illness patients ratio	• Counts of influenza-confirmed hospitalizations requiring oxygen/vasopressor support
• Death: hospitalization for influenza	• Counts of in-hospital death among influenza-confirmed hospitalizations

1. Calculate cumulative ratios

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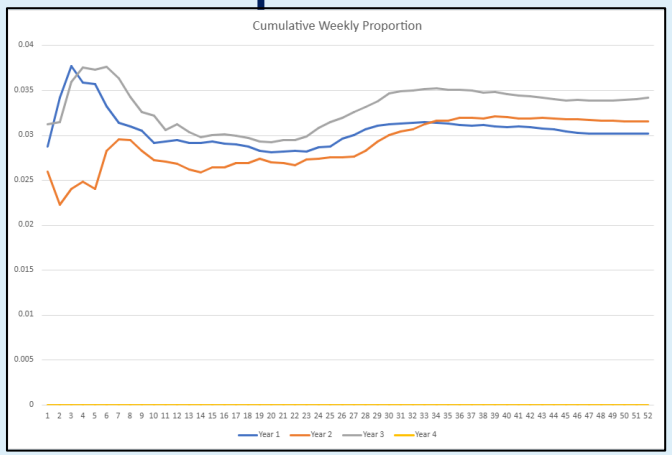
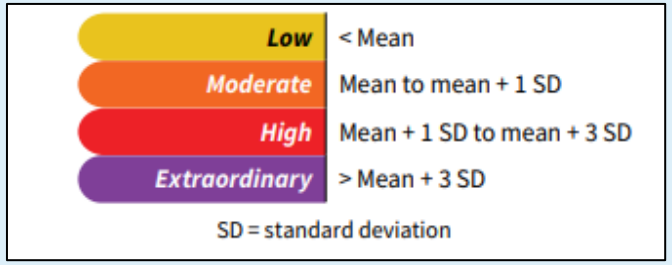
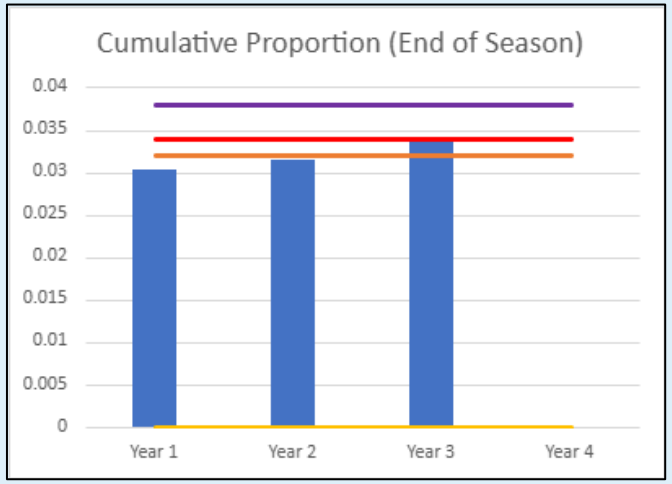
Example: assessment of seriousness of disease



1. Calculate cumulative ratios for current and past seasons



2. Determine thresholds using data from previous seasons



3. Use thresholds to determine seriousness of disease for current and past seasons

1. Prospective and retrospective assessment of **impact on healthcare capacity**

4 Impact on healthcare capacity

e.g. proportion of beds occupied for influenza/respiratory illness/all causes, healthcare workforce absenteeism

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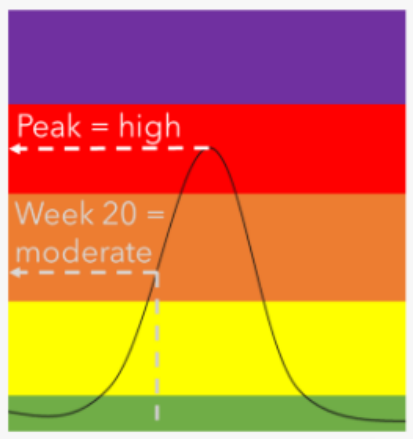
PISA	GIHSN
• Number of patients currently in hospital, ICU or beds with oxygen support with influenza/SARI/ respiratory illness, or rate per unit population	• Monthly counts of influenza-positive hospital and ICU admissions for influenza/SARI/respiratory illness • Monthly counts of number of hospitalizations for influenza/SARI/respiratory illness requiring oxygen support/vasopressor support • Monthly counts of number of hospitalizations for influenza/SARI/respiratory illness requiring mechanical ventilation
• Proportion of all hospital beds, ICU beds or beds with oxygen support currently occupied for influenza/SARI/ respiratory illness	• *Bed capacity monitored?*

➢ Determine thresholds using historical data and assess on a regular basis during epidemics



1. Prospective and retrospective assessment of **PISA indicators**

☑ Do you capture disease severity markers (ICU admission, ventilation, length of stay, in-hospital outcome) for all enrolled patients?

☑ Do you systematically apply a standard case definition (e.g., WHO SARI) and perform PCR testing on every enrolled patient?

☑ Do you have 3-5 years of historical data to facilitate threshold calculation?

World Health Organization

2. Rapid clinical severity assessment

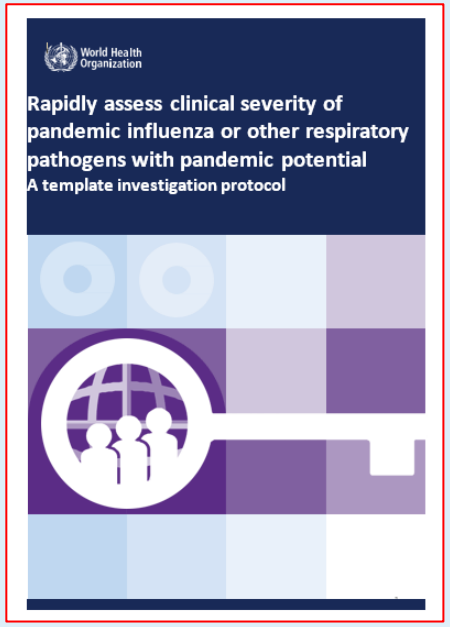
WHO GISRS Investigations and Studies (Unity Studies)

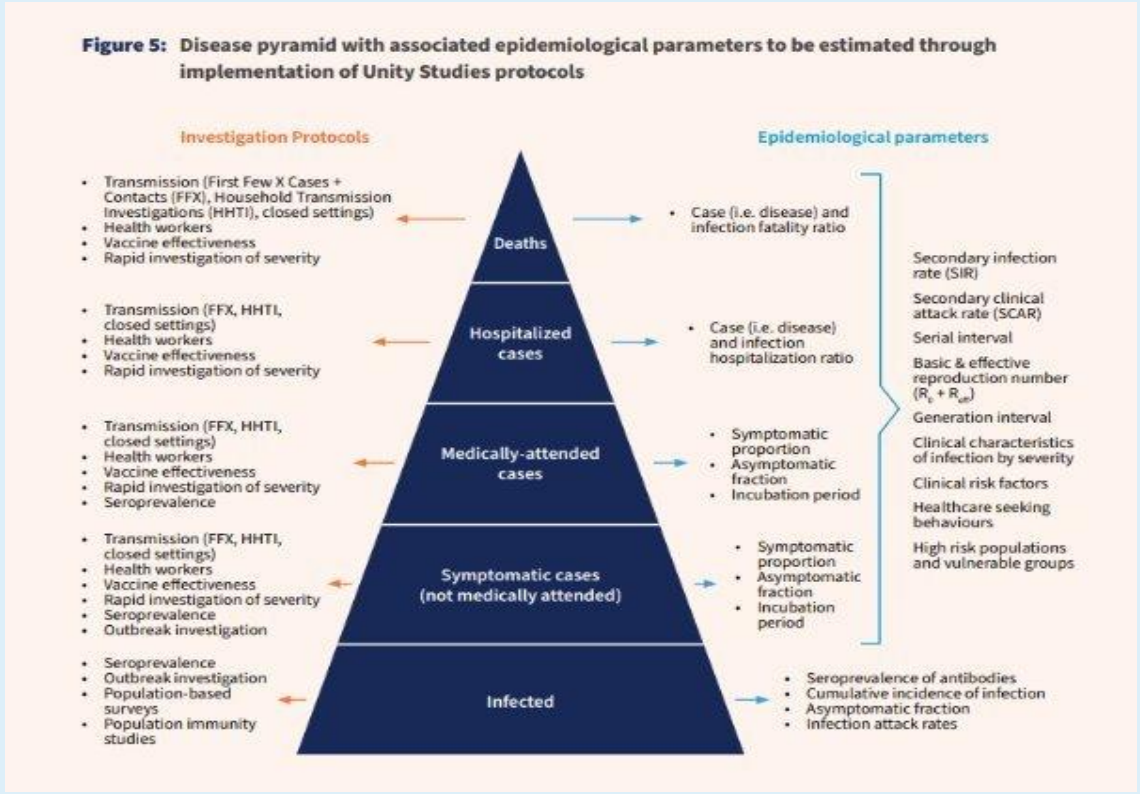
Global network of sites launched in May 2025

Discrete studies and early investigations focus on certain objectives not efficiently met by existing standard surveillance systems.

- **Template protocols** (FFX, household transmission surveys, serostudies)
- **Implementation tools** (analytical plans, ethics toolkit)

NEW: Rapid clinical severity assessment





World Health Organization

https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/influenza-investigations-studies-unity

2. Rapid clinical severity assessment

☑ Do the variables you collect align with WHO Unity Studies protocol requirements (pre-hospital, in-hospital, severity, outcomes)?

☑ Would your site be able to accelerate enrolment, testing, and reporting to support rapid clinical severity assessment in a future pandemic?

☑ Do you perform (or ship samples for) Whole genome sequencing of 50–100 influenza viruses per season?

World Health Organization

Expected outputs of collaboration

1. **Strengthened PISA seriousness of disease and impact on healthcare capacity assessments**
   - More timely and more complete severity assessments through integration of hospital-based data

2. **Enhanced early severity assessment capacity**
   - Insights into feasibility of rapid clinical severity assessment using GIHSN data, including understanding seasonal influenza severity as a comparator for the Unity Studies rapid severity protocol

3. **Utilizing data already collected by sites for public health action**

World Health Organization

Thank you

Nicki Boddington

Maja Lièvre

Wenqing Zhang

Global influenza programme colleagues, past and present

Kaat Vandemaele

PISA working group

World Health Organization

Global Influenza Hospital Surveillance Network

www.gihsn.org

GIHSN ANNUAL MEETING, 19 JUIN 2026

HOSPITAL BASED CATCHMENT AREA ESTIMATION TO SUPPORT BOD – PILOT STUDY WITH KENYA AND BRAZIL

Marta NUNES, CERP

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

Coordination IMPACT Healthcare

Estimating catchment population of GIHSN sites in Kenya and Brazil

- Jeanette Dawa
- Nancy Otieno and the Kenya team
- Sonia Raboni, Heloisa Ihle and the Brazil team
- Chelsea Hansen and Cecile Viboud
- Sandra Chaves
- The Task Force for Global Health

Objectives

- Estimate hospital catchment populations for participating facilities
- Use the estimated catchment population to estimate age-specific population-based hospitalization rates associated with influenza and other respiratory viruses of public health importance
- Use the estimated catchment population to estimate age-specific population-based in-hospital mortality rates associated with influenza and other respiratory viruses of public health importance
- Explore differences in care-seeking behavior for respiratory illness based on disease severity and patient age over time.

Methods

Primary methodology

- Use of an R package called ‘catchment’ that implements a gravity model framework for estimating health facility catchment populations
- In the gravity model distance and mass components are represented by
  - Travel time to a health facility
  - Facility specific weights that represent each facility’s relative attractiveness

Estimating health facility-level catchment populations using routine surveillance data and a Bayesian gravity model

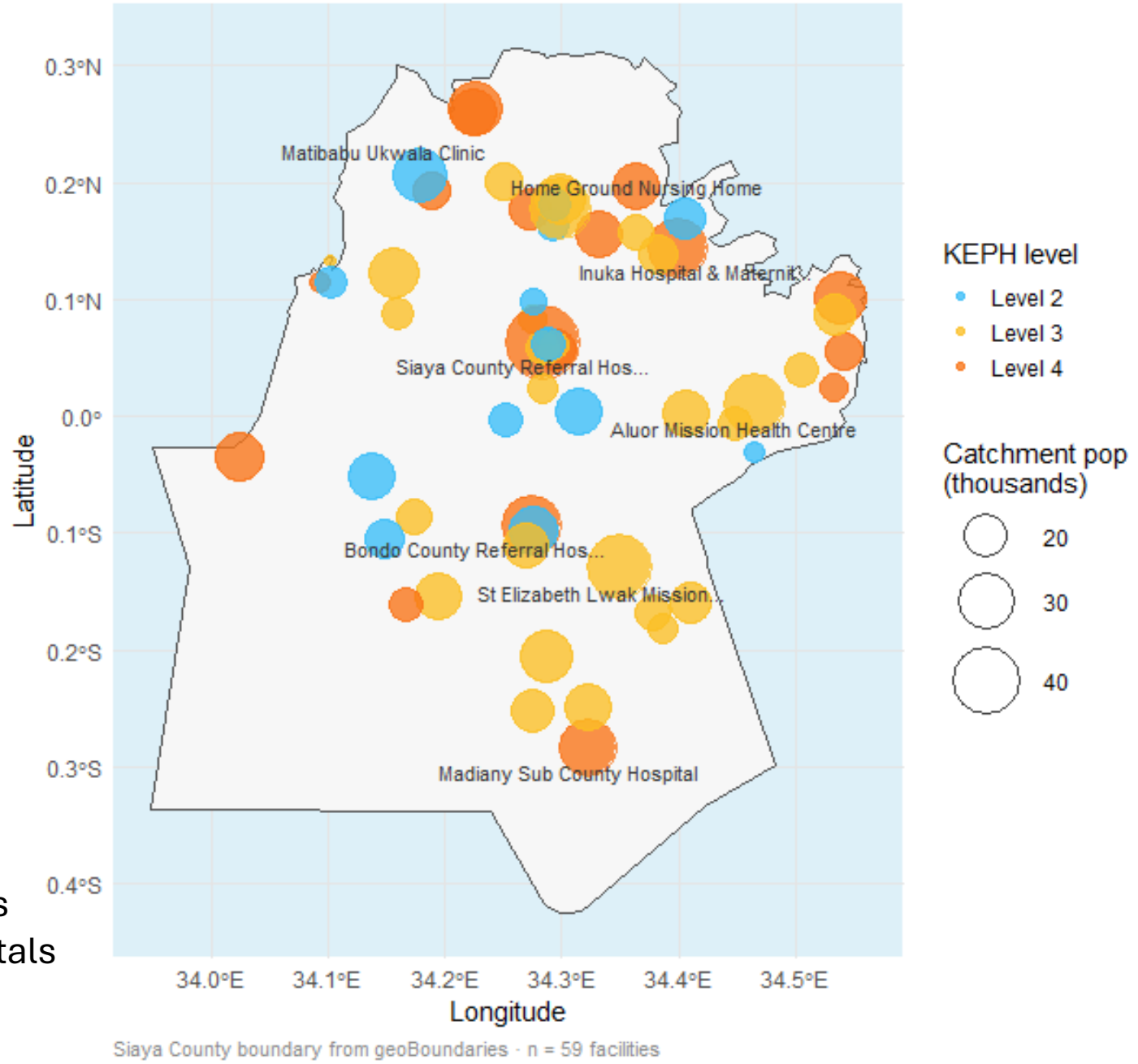
Justin Millar, Rohan Arambepola, Ewan Cameron, Busiku Hamainza, Kafula Silumbe, John Miller, Adam Bennett, Hannah Slater

Preliminary findings: Catchment Population Preliminary Results Siaya County, year 2018

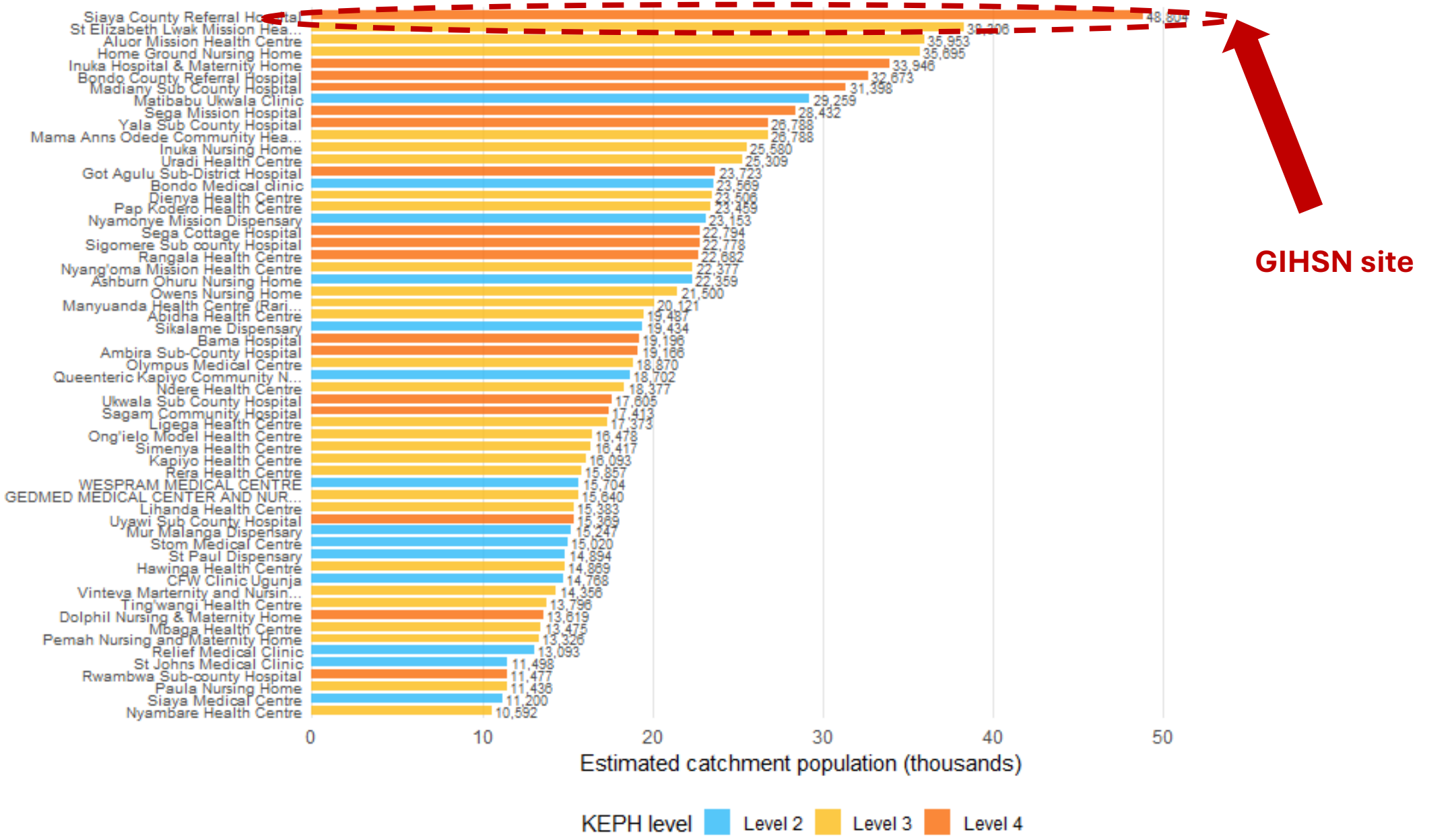
R Catchment Package

Kenya health facilities

- Level 2 – dispensaries
- Level 3 – health centers
- Level 4 – primary care hospitals
- Level 5 – secondary care hospitals

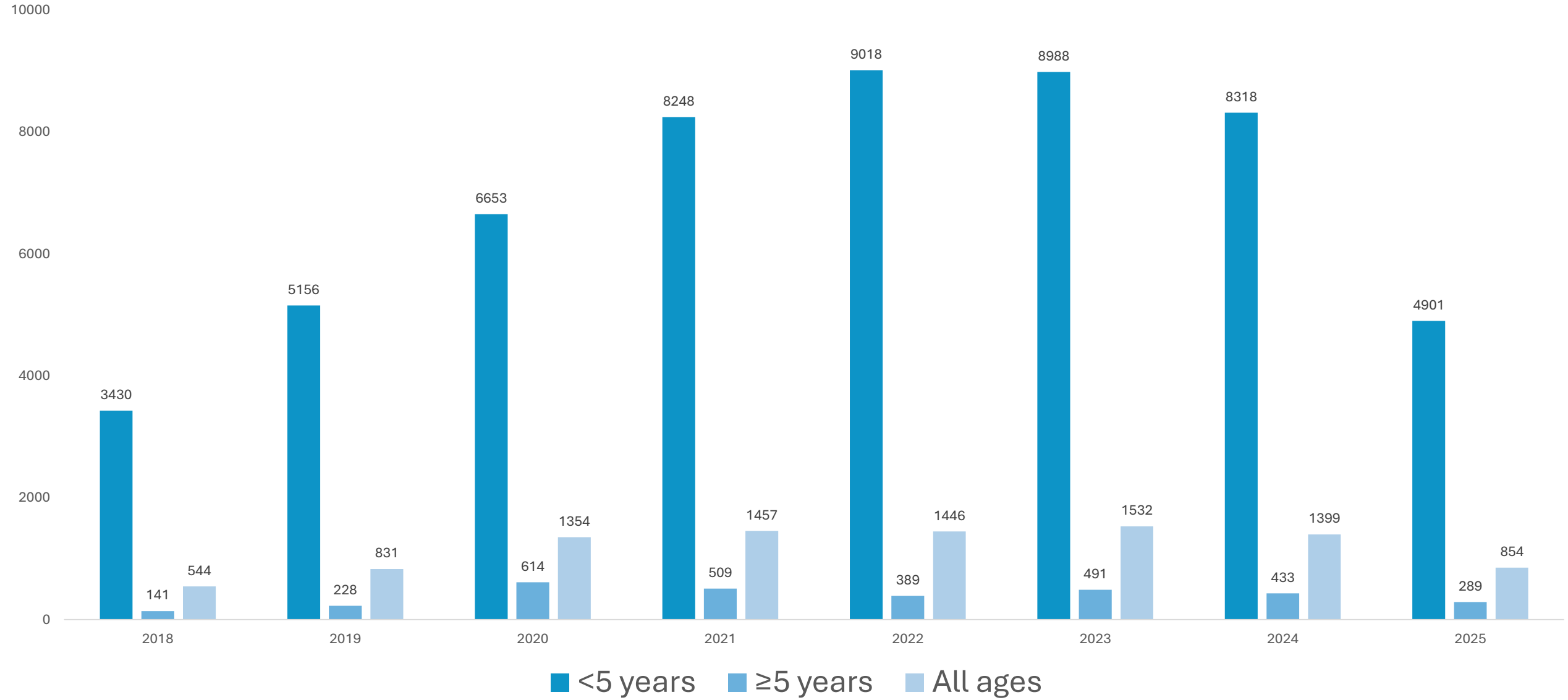


Estimated Catchment Population by Health Facility – Siaya County

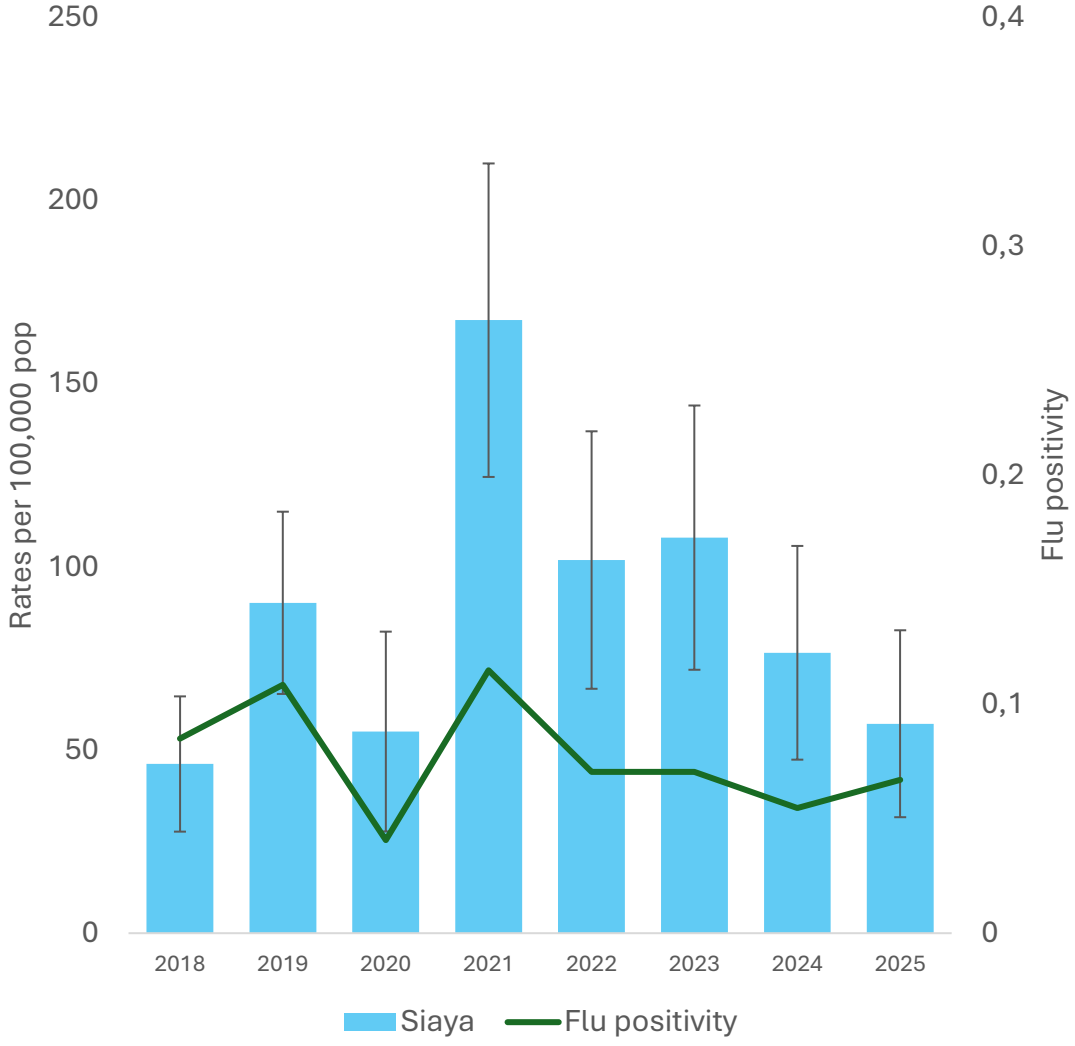


Hospitalised SARI rates per 100,000 population

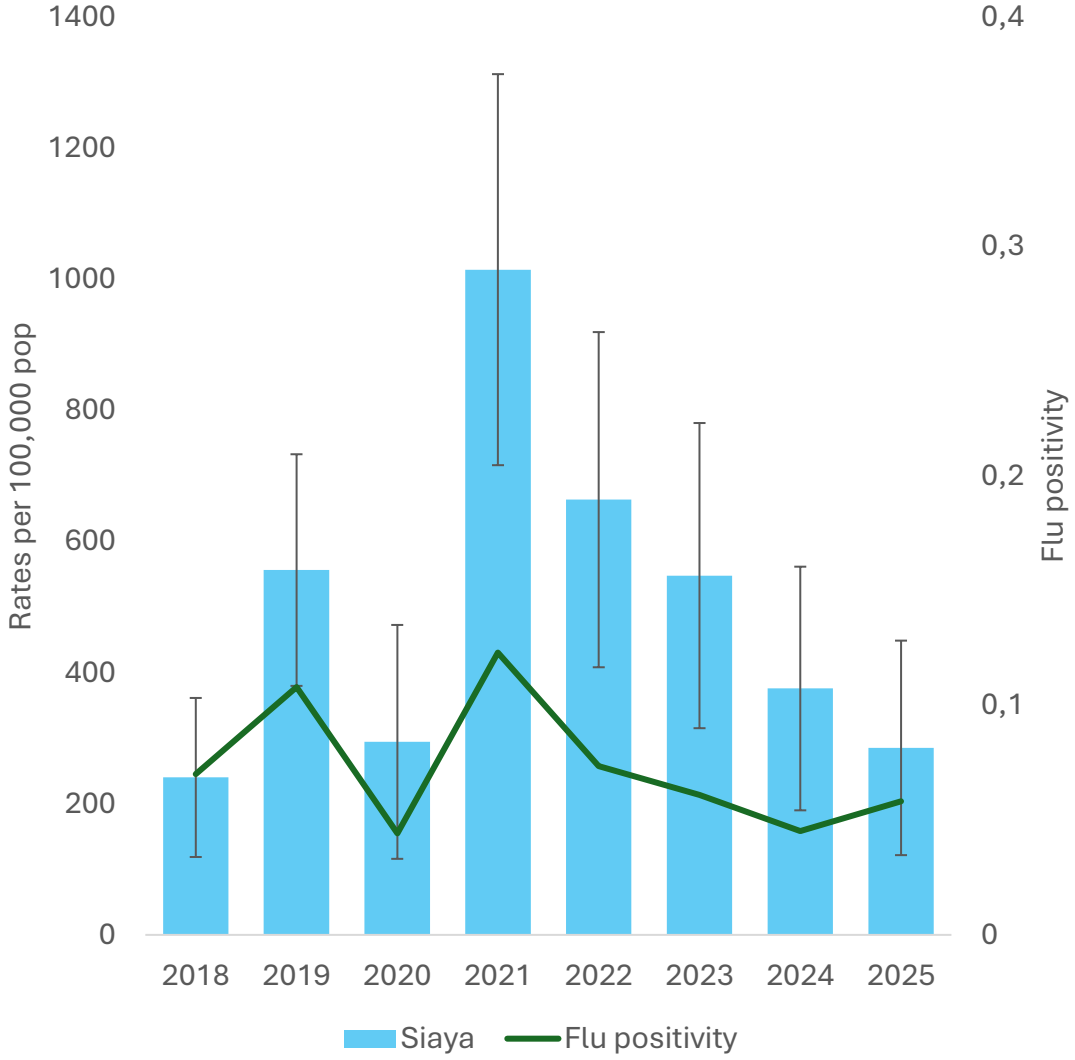
Siaya County Referral Hospital



Siaya CRH hospitalised influenza associated SARI rates per 100,000 population - **all ages**



Siaya CRH hospitalised influenza associated SARI rates per 100,000 population - **< 5years**



Way forward

- Refine data inputs in the analysis of Kenya GIHSN site
  - Concerns regarding
    - quality of data used to inform the health facility weights (may lead to underestimation of catchment population of GIHSN site)
    - completeness of SARI records i.e. whether all patients captured by surveillance officer

- Proceed with analysis for Brazil site

Alternative Methodology

Proportional flow model - population residing in an area is assigned to multiple hospitals according to the observed utilization patterns

- For each geographic unit assign a proportion of the population to a particular hospital based on its proportion of all hospital admissions

Population in location A is allocated to surrounding hospitals based on the proportion of admissions to each hospital

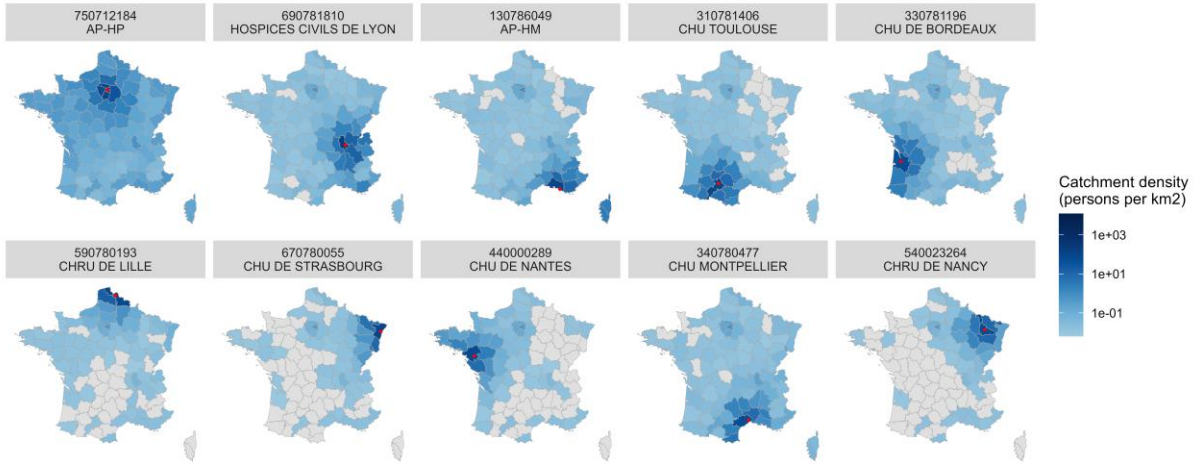
Estimation of hospital catchment populations using data on patient hospital use in France

- Catchment populations were estimated for hospitals throughout France using a **proportional flow approach**.
- Data on hospital use and patient residence were accessed from the Agence Technique de l'Information sur l'Hospitalisation (ATIH).
- For patients coming from each administrative area, we calculated a preference for each hospital, and combined this with population data for the area to estimate the catchment population of each hospital
- For one hospital group (HCL), we compared this with data on emergency visits, and data from a retrospective cohort study.

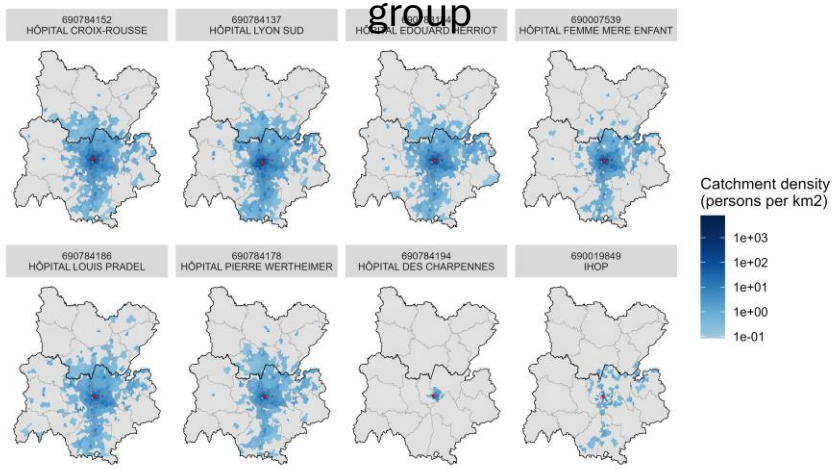
HCL
HOSPICES CIVILS DE LYON

CERP
CENTRE of EXCELLENCE in RESPIRATORY PATHOGENS

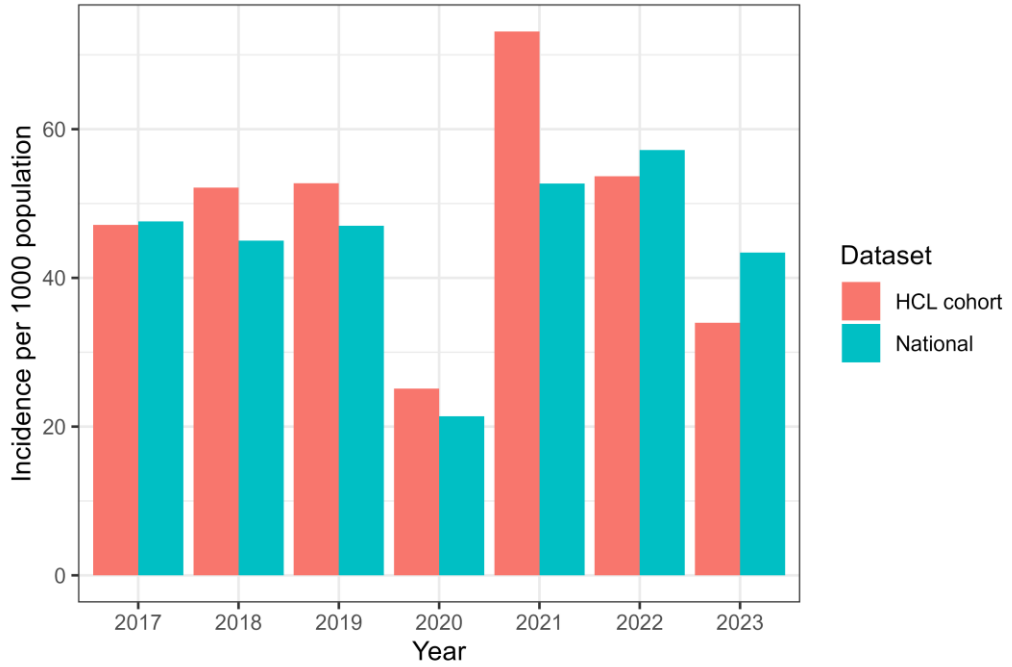
Estimated density of the catchment population coming from each department to the ten largest hospitals



Estimated average annual catchment population for the 8 largest Lyon-based sites of the HCL group



RSV incidence <1 year olds in the HCL respiratory cohort, using the catchment population estimated vs with national incidence estimates



GIHSN ANNUAL MEETING, 19 JUIN 2026

PREPARATION OF NEXT SEASON & PILOT MILESTONES

Laurence TORCEL-PAGNON, Fondation for Influenza Epidemiology

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

Coordination IMPACT Healthcare

LAUNCH OF A NEW CALL FOR 2026-27

Whole Genome Sequencing of **a minimum of 100 influenza viruses** will be expected.

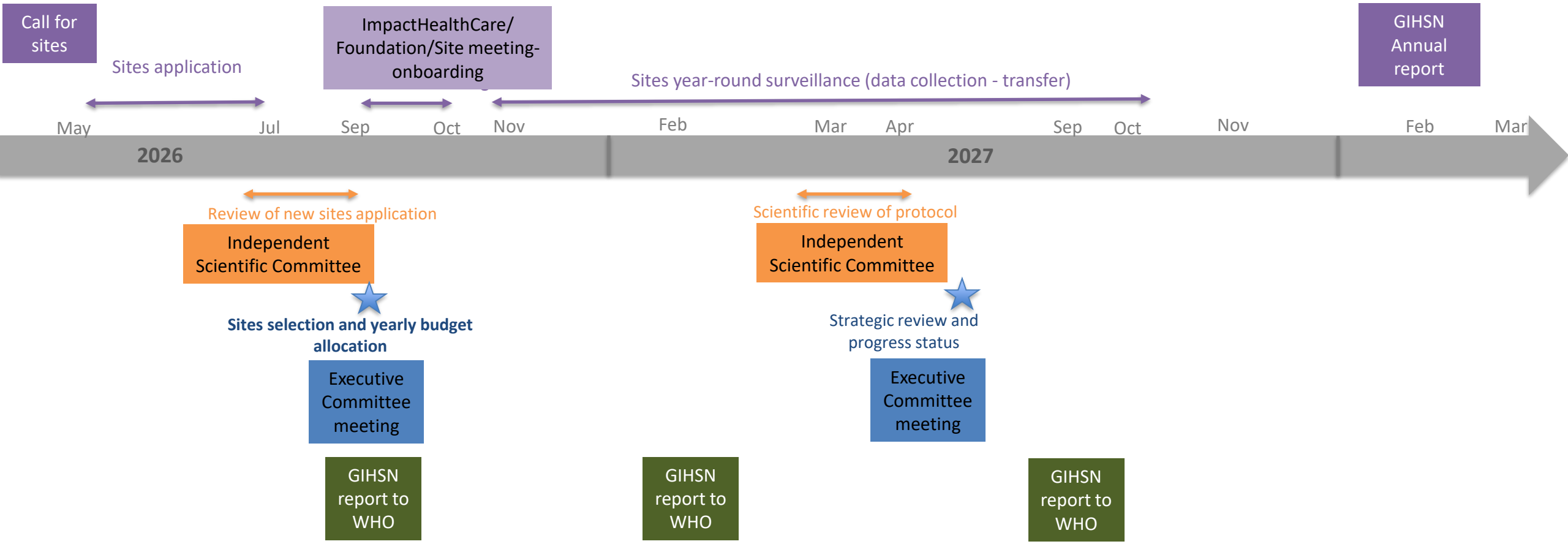
!NEW! A European initiative for 2026-2027 on drivers of vaccine protection

As part of this Call for Proposals, a European initiative is proposed for 2026–2027 with a focus on understanding drivers of vaccine protection. The data gathered will allow for analysis linking virus genetic evolution (via WGS), vaccination status, and clinical characteristics of enrolled patients. A summary report will be shared with the European Medicine Agency (EMA) to better understand factors related to influenza vaccine protection.

For that reason, European countries **with mature influenza vaccination programs** are encouraged to apply, as **data on patient's vaccination status** are required to investigate WGS of specimens from influenza-vaccinated patients.

New targeted European sites: Germany, Portugal, UK, Italy…

NEXT STEPS FOR 2026-27



EU pilot

GIHSN ANNUAL MEETING, 19 JUIN 2026

CLOSING OF THE MEETING

Cédric MAHE & Wenqing ZHANG

Foundation for Influenza Epidemiology

Sous l'égide de Fondation de France

Coordination IMPACT Healthcare

Global Influenza Hospital Surveillance Network

www.gihsn.org

THANK YOU!

Foundation for Influenza Epidemiology

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