WHO activities in relation to zoonotic influenza

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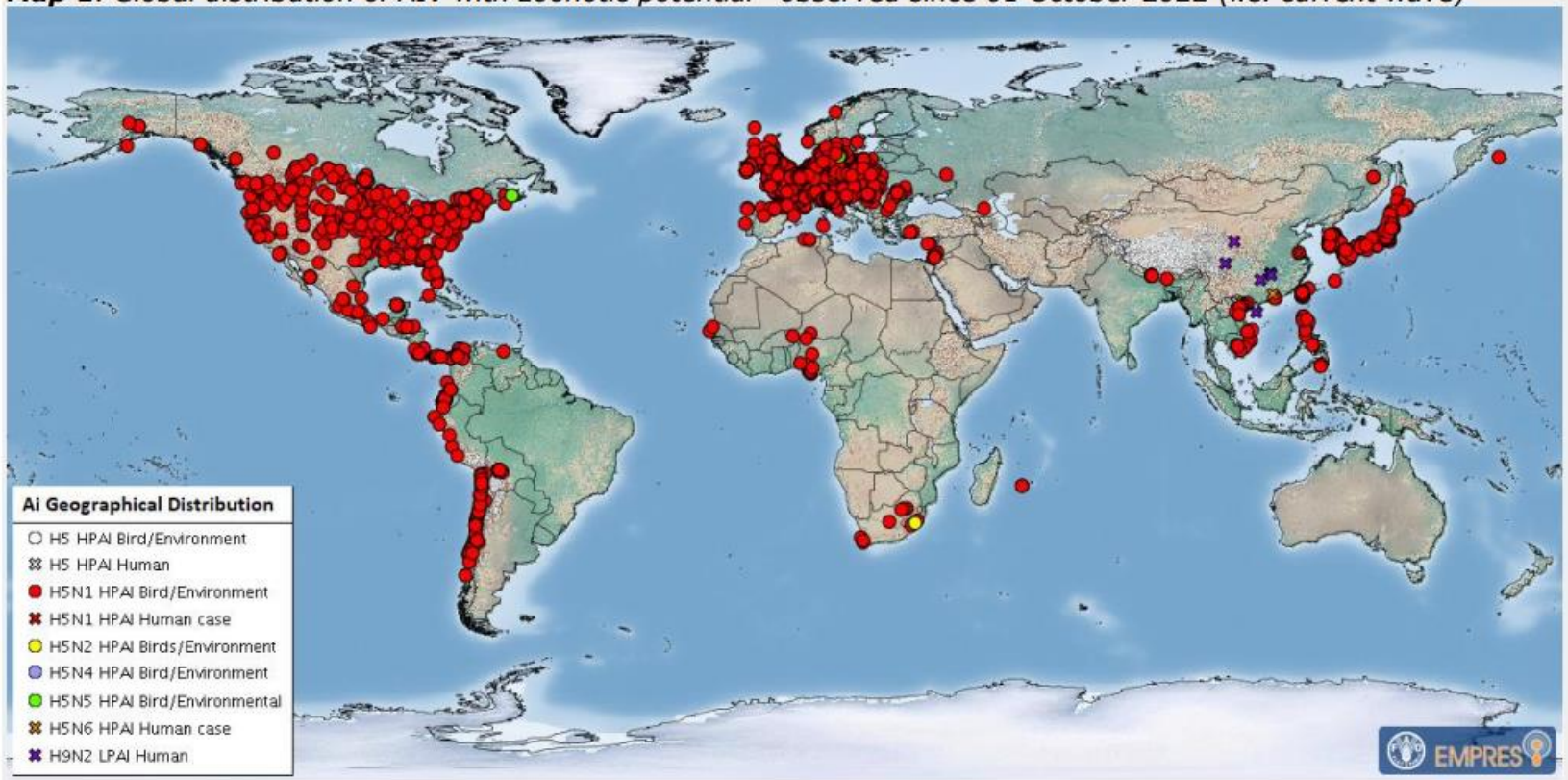
World Health Organization

HEALTH EMERGENCIES programme

Global AIV with zoonotic potential 23 March 2023

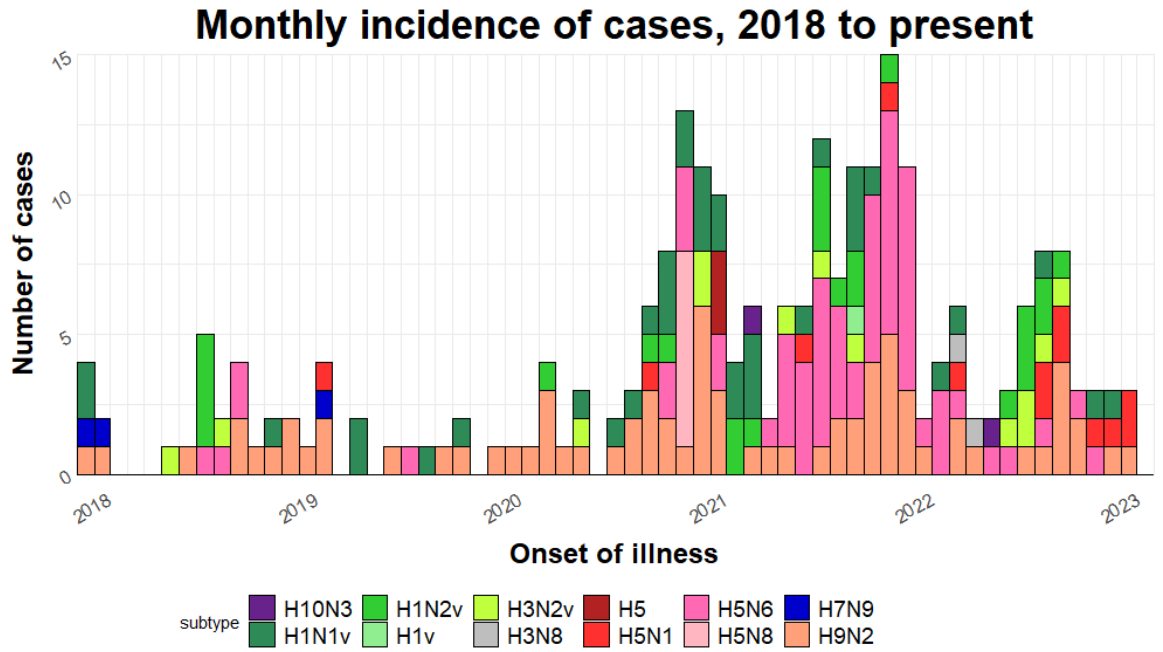
***Map 1**. Global distribution of AIV with zoonotic potential* observed since 01 October 2022 (i.e. current wave)*



Note: Symbols may overlap for events in similar geographic locations.
*includes H5Nx, high pathogenicity avian influenza (HPAI) viruses.

Human infections

Human infections with zoonotic influenza



Human infections with A(H5N1) clade 2.3.4.4b since 2020

COUNTRY	ONSET_ILLNESS	AGEGROUP	EXPOSURE TO POULTRY	SEVERITY_REPORTED
China	22.09.2022	Adult	yes	Fatal
China	31.01.2023	Adult	yes	Severe
Ecuador	25.12.2022	child	yes	Critical
Spain	NA	adult	yes	Asymptomatic
Spain	NA	adult	yes	Asymptomatic
UK	NA	adult	yes	Asymptomatic
USA	NA	adult	yes	Very mild (fatigue)

International Health Regulations (IHR, 2005)

All human infections caused by a new influenza subtype are required to be reported under the **International Health Regulations** (IHR, 2005).

- includes any influenza A virus that has demonstrated the capacity to infect a human and its haemagglutinin gene (or protein) is not a mutated form of those, i.e. A(H1) or A(H3), circulating widely in the human population.

Information from these notifications is critical to inform risk assessments for influenza at the human-animal interface.

WHO latest Risk Assessment

4 March to 24 April 2023

Human infections:

- 3 human cases of infection with influenza A(H9N2) viruses
- 2 human cases of infection with influenza A(H1N1) variant viruses were reported officially.
- 1 human case of infection with an influenza A(H3N8) virus and 1 human case of infection with an A(H5N1) virus were reported.

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Influenza at the human-animal interface
Summary and risk assessment, from 4 March to 24 April 2023[1]

- **New infections[2]:** From 4 March to 24 April 2023, three human cases of infection with influenza A(H9N2) viruses and two human cases of infection with influenza A(H1N1) variant viruses were reported officially. Two of the A(H9N2) cases and both A(H1N1) variant cases were mentioned in the previous risk assessment of 3 March 2023.[3] Additionally, one human case of infection with an influenza A(H3N8) virus and one human case of infection with an A(H5N1) virus were reported.
- **Risk assessment:** The overall public health risk from currently known influenza viruses at the human-animal interface has not changed, and the likelihood of sustained human-to-human transmission of these viruses remains low. Human infections with viruses of animal origin are expected at the human-animal interface wherever these viruses circulate in animals.
- **IHR compliance:** All human infections caused by a new influenza subtype are required to be reported under the International Health Regulations (IHR, 2005).[4] This includes any influenza A virus that has demonstrated the capacity to infect a human and its haemagglutinin gene (or protein) is not a mutated form of those, i.e. A(H1) or A(H3), circulating widely in the human population. Information from these notifications is critical to inform risk assessments for influenza at the human-animal interface.

Avian Influenza Viruses

Current situation:

Avian influenza A(H5) viruses

Since the risk assessment of 3 March 2023, one human case of infection with an A(H5N1) virus was reported to WHO.

On 29 March, Chile notified the Pan American Health Organization (PAHO)/WHO of a laboratory-confirmed case of human infection with an avian influenza A(H5) virus. The case is a 53-year-old

[1] This summary and assessment covers information confirmed during this period and may include information received outside of this period.
[2] For epidemiological and virological features of human infections with animal influenza viruses not reported in this assessment, see the reports on human cases of influenza at the human-animal interface published in the Weekly Epidemiological Record here.
[3] Two human cases of infection with influenza A(H9N2) viruses and two human cases of infection with influenza A(H1N1)v viruses were detected in China according to information received during the WHO Consultation and Information Meeting on the Composition of Influenza Virus Vaccines for Use in the 2023-2024 Northern Hemisphere Influenza Season held in February 2023. These cases were included Influenza at the human-animal interface summary and assessment, 3 March 2023 (https://www.who.int/publications/m/item/influenza-at-the-human-animal-interface-summary-and-assessment-3-march-2023) and were subsequently reported to WHO on 9 March 2023.
[4] World Health Organization. Case definitions for the 4 diseases requiring notification to WHO in all circumstances under the International Health Regulations (2005). Case definitions for the four diseases requiring notification in all circumstances under the International Health Regulations (2005).

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Risk assessment

The overall public health risk from currently known influenza viruses at the human-animal interface has not changed, and the **likelihood of sustained human-to-human transmission of these viruses remains low**.

Human infections with viruses of animal origin are expected at the human-animal interface wherever these viruses circulate in animals.

https://cdn.who.int/media/docs/default-source/influenza/human-animal-interface-risk-assessments/influenza-at-the-human-animal-interface-summary-and-assessment--from-4-march-to-24-april-2023.pdf?sfvrsn=e667a5dc_1&download=true

One Health Response

WHO/Europe works closely with other organizations.

Together, we are working to improve the prevention and early detection of, as well as response to zoonotic diseases by adopting a **One Health approach**.

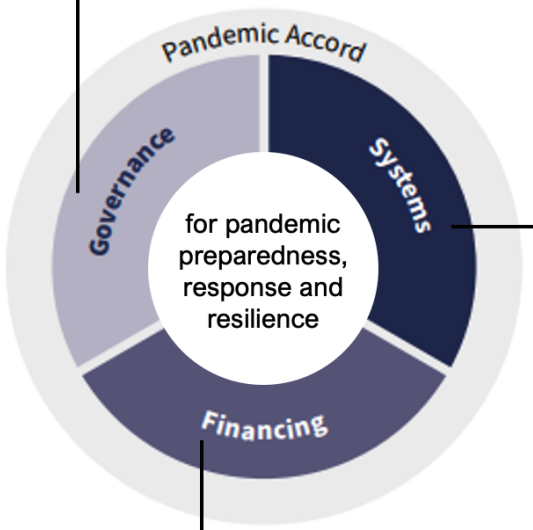
Preparedness and Resilience for Emerging Threats initiative (PRET)III 2024-2030

- WHO is launching an initiative to help countries to better prepare for the next pandemic, or even better, to prevent it
- **PRET** focuses on **improving pandemic preparedness** for groups of pathogens based on their **mode of transmission**.
- Our global experience of the COVID-19 pandemic has re-emphasized the critical nature of **influenza pandemic preparedness** and has highlighted areas of global strength and resilience as well as important **gaps and opportunities** for further improvement.
- A **One Health lens** is applied in PRET recognizing that most new pathogens originate first in animals, and that preventing, preparing and responding to emerging threats requires multi-sector action.

Preparedness and Resilience for Emerging Threats initiative (PRET)III 2024-2030

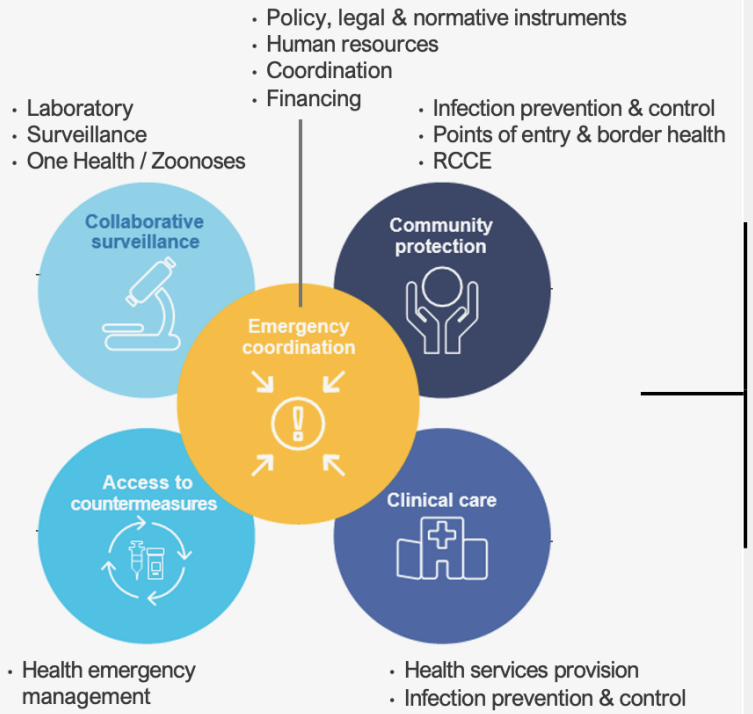
Health context

- International Health Regulations (IHR, 2005)
- Others (national, regional & global)



- Pandemic Fund
- Others (national, regional & global)

Subsystems & IHR (2005) core capacities

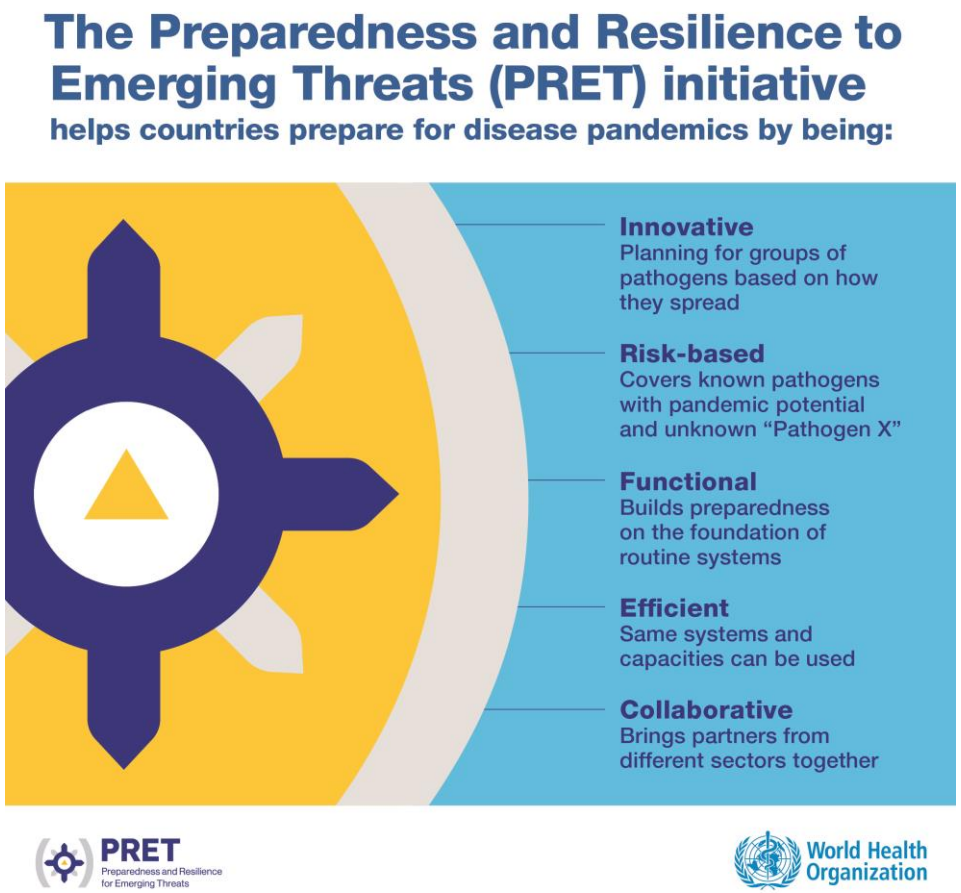


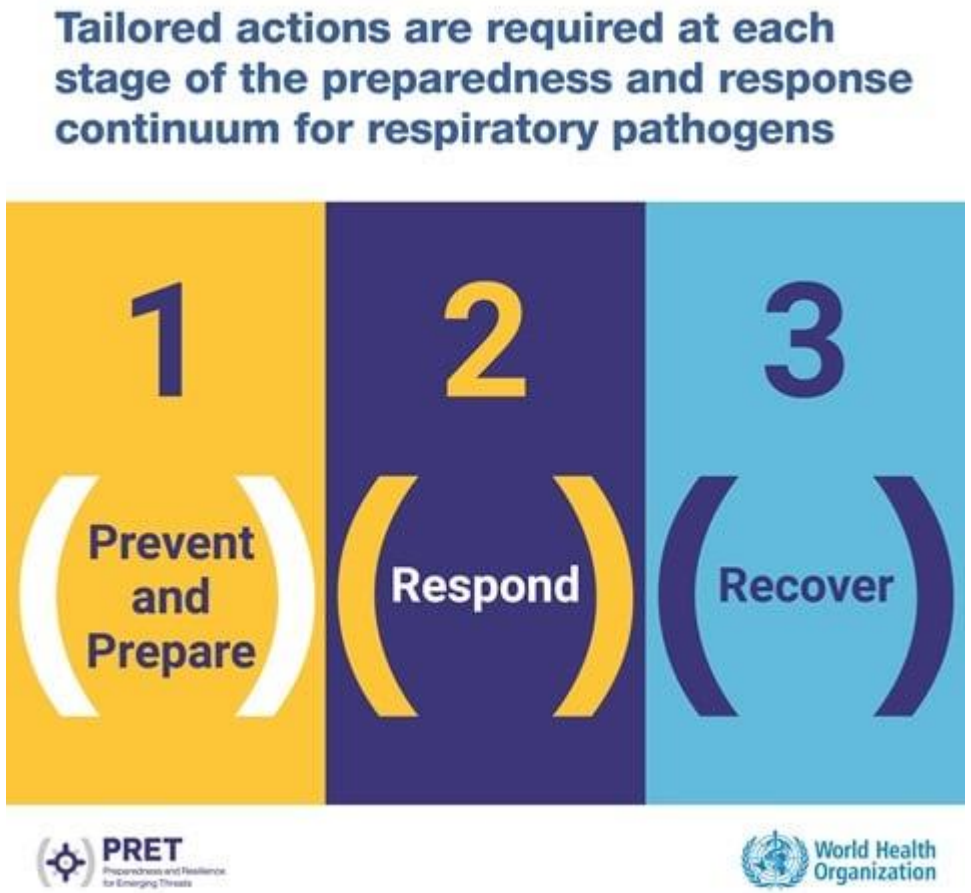
3-tiers for system & capacity strengthening (approach)

1. All / multi-hazard (NAPHS)
2. Pathogen groups (PRET)
3. Pathogen specific (Strategies)

Broader context: Resilient communities and One Health multisectoral systems

Preparedness and Resilience for Emerging Threats initiative (PRET)III 2024-2030





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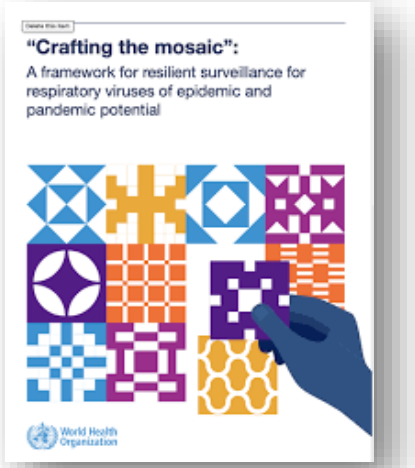
Spotlight on: Integrated Surveillance



Key Resource:

The Mosaic Respiratory Surveillance Framework aims to improve access to timely data for decision-making during interpandemic periods and to help ensure that respiratory virus surveillance is both timely and scalable in emergencies. It helps national stakeholders to:

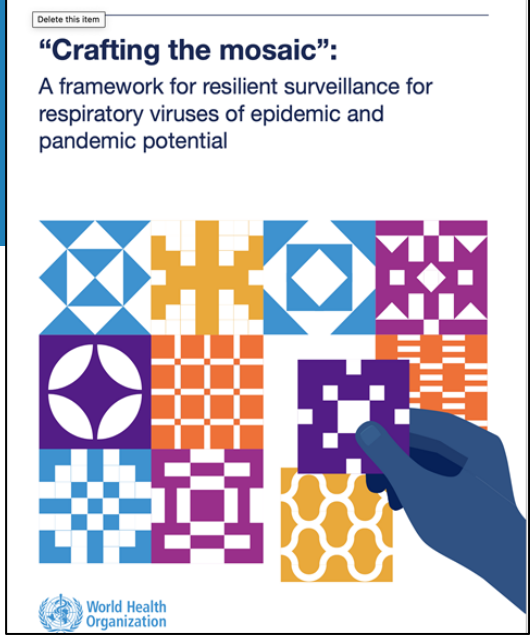
- identify priority surveillance objectives;
- identify relevant surveillance;
- prioritize required enhancements of existing surveillance;
- develop implementation plans; and
- align technical assistance and financial investments from partners.

In Action!

South Sudan: Developed influenza sentinel surveillance capacity following the 2019 Ebola outbreak with support from the Pandemic Influenza Preparedness Partnership Contributions. These platforms were rapidly repurposed during the COVID-19, making South Sudan one of the first nine countries in the African region to test for SARS-CoV-2.

Investigations & Studies

- A needed **“mosaic” of respiratory viruses surveillance approaches**
  - ✓ major surveillance systems can maintain their efficiency if well-coordinated with other systems that have different objectives
- Discrete studies and early investigation **focus on certain objectives not efficiently met by existing other systems**, like:
  - Assess rapidly/ monitor transmissibility
  - Estimate population susceptibility/immunity (sero surveillance), infection severity
  - Estimate vaccine coverage, effectiveness, impact
  - Estimate burden of disease
  - Assess impact of non pharma interventions, like PHSM (school closure, etc.)
- Overarching aim: comprehensively address surveillance needs for influenza, SARS-CoV-2 and other resp viruses of pandemic potential for **pandemic preparedness and effective response**

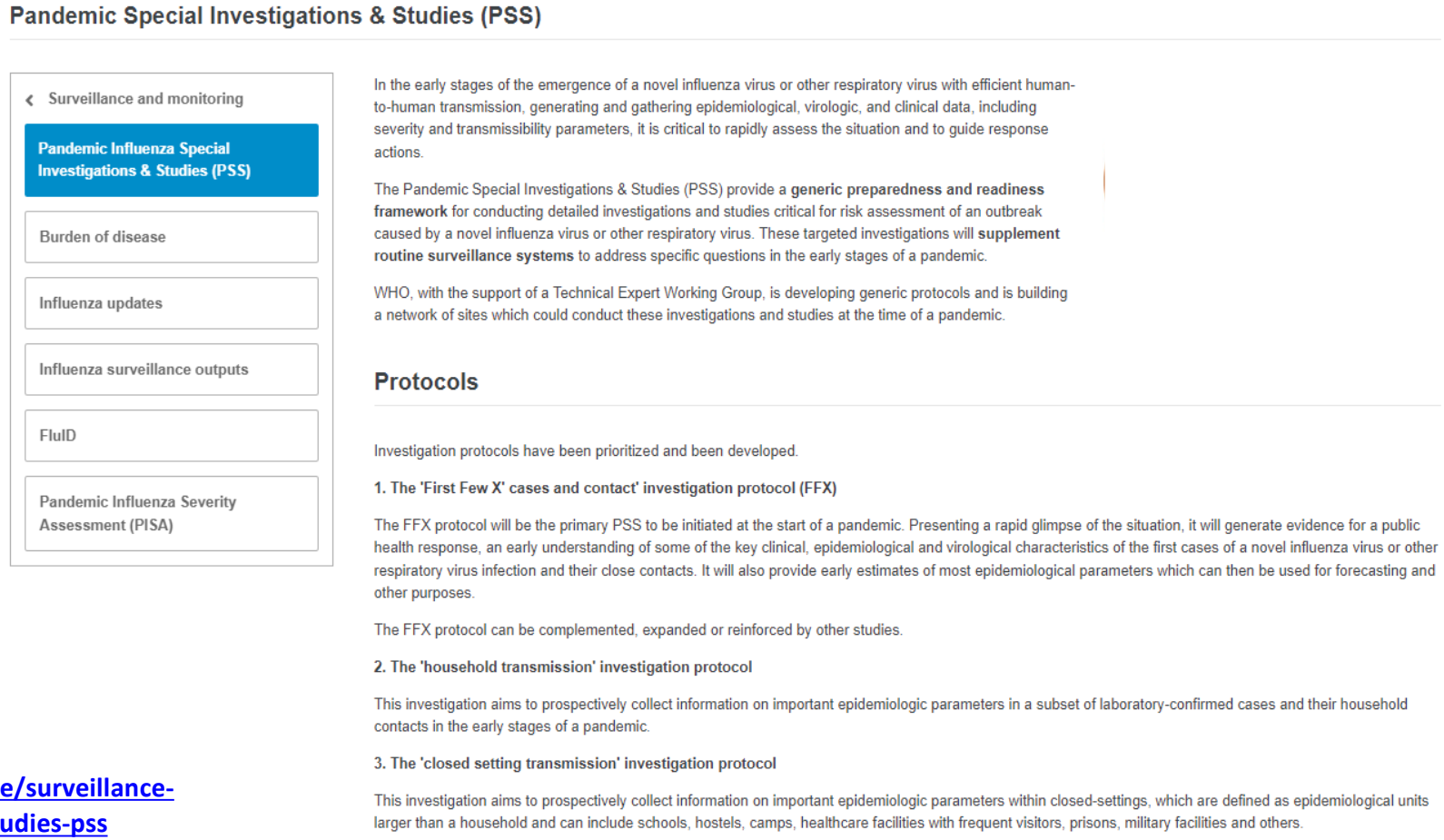


Link:https://www.who.int/initiatives/mosaic-respiratory-surveillance-framework

Source: WHO White paper on health emergency preparedness, response, and resilience (HEPR) architecture weblink

Pandemic influenza

- **Mosaics of GISRS Plus** (GISRS Plus is more than a sentinel surveillance system)
  - Epi and lab are essential elements of GISRS Plus
  - Specialised Investigations and Studies capacity – within or access to external
  - Quality over quantity; capacity building



Pandemic Special Investigations & Studies (PSS)

Surveillance and monitoring

Pandemic Influenza Special Investigations & Studies (PSS)

Burden of disease

Influenza updates

Influenza surveillance outputs

FluID

Pandemic Influenza Severity Assessment (PISA)

In the early stages of the emergence of a novel influenza virus or other respiratory virus with efficient human-to-human transmission, generating and gathering epidemiological, virologic, and clinical data, including severity and transmissibility parameters, it is critical to rapidly assess the situation and to guide response actions.

The Pandemic Special Investigations & Studies (PSS) provide a **generic preparedness and readiness framework** for conducting detailed investigations and studies critical for risk assessment of an outbreak caused by a novel influenza virus or other respiratory virus. These targeted investigations will **supplement routine surveillance systems** to address specific questions in the early stages of a pandemic.

WHO, with the support of a Technical Expert Working Group, is developing generic protocols and is building a network of sites which could conduct these investigations and studies at the time of a pandemic.

Protocols

Investigation protocols have been prioritized and been developed.

1. The 'First Few X' cases and contact' investigation protocol (FFX)

The FFX protocol will be the primary PSS to be initiated at the start of a pandemic. Presenting a rapid glimpse of the situation, it will generate evidence for a public health response, an early understanding of some of the key clinical, epidemiological and virological characteristics of the first cases of a novel influenza virus or other respiratory virus infection and their close contacts. It will also provide early estimates of most epidemiological parameters which can then be used for forecasting and other purposes.

The FFX protocol can be complemented, expanded or reinforced by other studies.

2. The 'household transmission' investigation protocol

This investigation aims to prospectively collect information on important epidemiologic parameters in a subset of laboratory-confirmed cases and their household contacts in the early stages of a pandemic.

3. The 'closed setting transmission' investigation protocol

This investigation aims to prospectively collect information on important epidemiologic parameters within closed-settings, which are defined as epidemiological units larger than a household and can include schools, hostels, camps, healthcare facilities with frequent visitors, prisons, military facilities and others.

Weblink : https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/pandemic-influenza-special-investigations-studies-pss

TAKE HOME MESSAGE: Unity studies

Mantra:

At the ready, "sentinel", approach: a Fast Track network

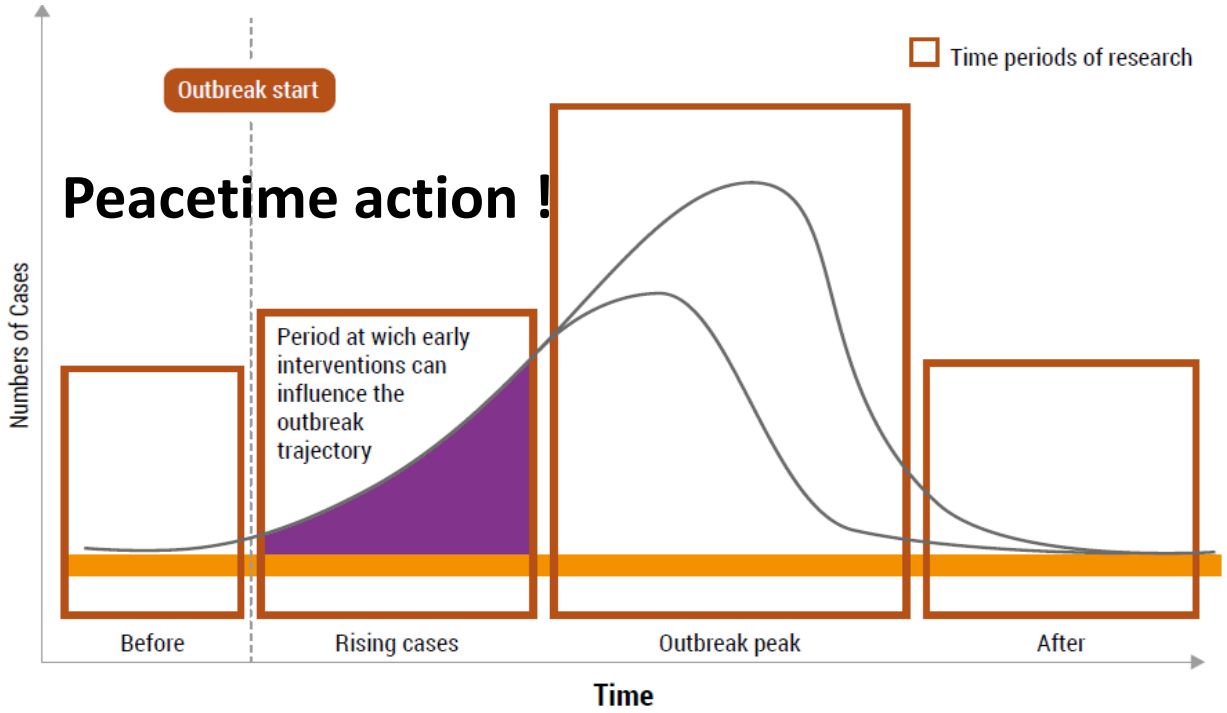
"Key questions,

Key generic protocols,

Key sites,

<u>after, before, during</u> next pandemic "

→ for pandemic preparedness and effective response



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