

Module 2 : Surveillance / Early warning

Title	Surveillance / Early warning
Responsible/facilitators	Agency medical coordinator
General Objectives	Early detection and rapid response to epidemic-prone diseases
Specific Objectives	<ul style="list-style-type: none"> • To understand why we do influenza surveillance • To understand the difference between animal and human surveillance • To understand how we do animal and human surveillance • To know what should be done when animal cases are detected • To know when to suspect human cases of bird or pandemic influenza • To know what actions to take when cases of avian or pandemic influenza are detected in humans • To know what to monitor during the pandemic.
Methodology	Presentation: Power point or printed in A3 (laminated)
Instructions for facilitators	Included in body of module
Messages to retain	Detect early Follow if the disease is increasing or decreasing.
Contents	See text
Documents	Power point or printed in A3 presentation
Bibliography	none

- Duration = 45 minutes

Pandemic influenza preparedness and mitigation in
refugee and displaced populations
WHO training modules for humanitarian agencies

Module 2

The use of surveillance / early warning for early action



Objectives of module 2

- To understand why we do influenza surveillance
- To understand the difference between animal and human surveillance
- To understand how we do animal and human surveillance
- To know what should be done when animal cases are detected
- To know when to suspect human cases of bird or pandemic influenza
- To know what actions to take when cases of avian or pandemic influenza are detected in humans
- To know what to monitor during the pandemic.

SLIDE 3

What is influenza surveillance?

Using definitions to detect cases of **avian influenza in animals and people** or the **first cases of pandemic** influenza in humans

E.g.

sick birds + sick people + sick health worker

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SLIDE 4

What is the definition for animal surveillance?

- **Sick or dead birds or animals**
- **The definition for human surveillance is described in slides 11 to 12**

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Why do bird/animal surveillance?

- To **minimize contact by humans** with sick or dead birds/animals which have influenza
- If contact with sick/dead birds is minimized, there is **less chance a person will become sick and die**
- If contact is limited, there is **less chance** the influenza virus will change itself to be able **to pass easily from human to human** and so start a pandemic
- This **delaying tactic** gives us **more time to prepare** for a pandemic

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What is bird/animal surveillance?

- This means reporting sick or dead birds/animals immediately to authorities in your area
- If sick or dead birds/animals are found
 - **Don't touch** sick or dead birds/animals and their faeces
 - **Keep everyone away**
 - **Do not kill, pluck or prepare** sick birds/animals for sale or food
 - **Report immediately to authorities**

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What will happen when sick or dead birds are reported?

- Authorities will come to collect and dispose of the carcasses safely
- They will take samples to see if the bird or animal was infected with H5N1
- As they have to touch the birds/animals to take specimens and to dispose of the carcasses, they will wear masks, eye protection, gloves and boots to protect themselves from getting sick
- They may need to kill other birds in the area which are infected → this is to protect communities from being infected and becoming sick.
- Disposing of carcasses may involve sealing them in plastic bags and incineration
- They will clean up the faeces and any other bird or animal remains, including that on their boots so as not to contaminate other areas.



Why do human surveillance?

- A pandemic will happen sooner or later so why do we need to do human surveillance?
- As it will allow the **early detection** of the **very first cases** of pandemic influenza
- This will allow
 - **Early initiation of control measures** → less disease and death
 - **Activation of contingency plans**
 - Health resources organized to accept many patients
 - Essential services continued (no shortages)



- An alert and surveillance system can also detect other diseases of epidemic potential (apart from influenza) and of international concern.
- If a pandemic appears and is detected very early, it may be possible to contain it at that geographical location by implementing certain public health measures. Even if containment is unsuccessful, any delay in its spread may allow people in others parts of the world to be more prepared.
- Resources should be organized in order to mitigate the consequences of a pandemic.
- The first cases in refugee camps or displaced populations should be detected as soon as possible, so that pandemic phase measures (eg respiratory illness triage and respiratory facility activation, social distancing) can be applied.
- Special measures must be taken to ensure that food, water and other essential items are distributed regularly to cater for needs without shortages. Essential service providers and health staff should apply additional measures such as wearing masks and post-exposure prophylaxis with anti viral if available.

Detecting first cases as early as possible

- Early detection requires:
 - Knowing the case definition
 - Recognising first cases
- Do not wait for the lab results to begin applying control measures

- Early detection of initial cases requires knowledge of the case definition, and recognition of new cases. Rapid reporting to authorities is then necessary.
- If those cases are the first cases of influenza in the area, it may be necessary to confirm the diagnosis by a specialized laboratory.
- Initial control measures should be put into place before laboratory results are available.
- If cases of pandemic are already known and confirmed in the country, it may not be necessary to confirm the disease with laboratory testing.

When to suspect first cases of bird or pandemic influenza in humans?

- Increase in the number of patients with
 - Acute respiratory infection or
 - Fever of unknown origin
- Sick healthcare workers may be the first signal
- Does this meet the case/cluster* definition?

* **Cluster means a group of cases linked in time and place!**

- Sick health care workers may be the first sign of the disease as they are often in contact with large numbers of sick patients.
- It is likely that cases will occur in groups (clusters), related to each other through contact, within a similar timeframe and place.

Sample case definition for suspected bird or pandemic influenza (part 1)

- Cluster of **3 or more sick people or deaths**
- They all fell sick **within 7 to 10 days** of each other
- They all live within a **defined geographical area**
- They all have **UNEXPLAINED moderate to severe acute respiratory illness** (i.e. fever AND - EITHER cough OR shortness of breath OR difficulty breathing)
- **AND...**

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Sample case definition for suspected bird or pandemic influenza (Part 2)

- **AND...**
 - **They all have a history of**
 - **CONTACT** with sick or dead birds/animals OR with someone else who also had a severe unexplained acute respiratory illness or with someone who has been diagnosed with H5N1OR
 - **TRAVEL** to areas with influenza outbreaks in birds or other animals
- OR

OR

- **OCCUPATIONAL** exposure i.e. they work as an animal culler, veterinarian, laboratory worker, or health worker.

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- Case definitions may change during the pandemic as more is known about the disease pattern and characteristics (the main symptoms, age groups affected, complications, efficacy of anti-virals, utility of antibiotics etc) as well as resources available.

What should you do if you find people that meet this definition? (1)

1. **Report** immediately to relevant district and national authorities, to your health coordinator and to WHO
2. **Isolate** them
 - ✓ **All those in close contact with these suspected cases should wear masks or a tightly-fitting scarf**
3. **Describe** the epidemiology to characterize patients by **person, place and time**
4. **Characterize** the illness in terms of clinical presentation, severity and outcomes

- If pandemic influenza cases are suspected by health care workers, they must be reported to relevant authorities (MoH/WHO) immediately.
- Patients should be isolated.
- Control measures - health education what to do in the community, infection control and patient management will be discussed in later modules.
- The characteristics of the disease in the suspected pandemic influenza cases should be described according to:
 - Person: symptoms and signs, severity, age, sex, contacts, outcome of illness (including deaths)
 - Place: Location of residence, movements in the last 7 days, location at onset of symptoms
 - Time: Date of disease onset

What should you do if you find people that meet this definition? (2)

- 5. Tracing and follow-up of contacts of these cases**
 - to detect additional cases
- 6. Intensified case-finding**
 - To identify additional people with febrile respiratory illness, especially those associated in time and place with the initial cases
- 7. Risk communication and health education of community** – keep your distance, cover coughs and sneezes, wash your hands / stop large gatherings / close schools
- 8. Sample collection/transport (call experts)**
 - Within 48 hours, if possible



- Contacts of these initial cases must be followed up and monitored for fever and other symptoms of influenza. National authorities/WHO may be able to assist with these activities.
- Active case finding must be instituted with the initial cases so that new cases can be isolated and treated appropriately.
- Intensify social mobilization for risk communication and distribution of health education messages.
- Collection of samples for disease confirmation may be required if these are the first cases that appear in the country.

Specimen collection

- Sample collection for confirmation will **only** be necessary for the **first few cases**
- It will **NOT** be necessary once confirmed pandemic influenza cases are known to be occurring in the country or region.
- Collection and transport of specimens is dangerous – aerosols – and is a specialized activity!
 - Call national laboratories and MoH and WHO for assistance
- Implementing control measures should not wait on laboratory confirmation!

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- Collecting samples for the confirmation of influenza requires special procedures that can generate very small respiratory droplets called aerosols. These procedures will require special personal protective equipment and the samples need to be handled with due care.
- First line health workers should NEVER do such a procedure alone.
- Control measures should be implemented when the diagnosis is suspected, and should not wait on laboratory confirmation.
- Medical coordinators should contact WHO for advice at outbreak@who.int, or through the respective WHO country office.

Surveillance once a pandemic has started – what to monitor (1)

- Once pandemic is declared
 - Confirmation of cases is not necessary
 - Contact tracing and case finding will be of little help as there will be too many cases
 - Collecting details on age, sex, place etc of cases are time consuming and not necessary

- But it is important to know if the number of cases is **increasing or decreasing**
 - to adjust needs, resources and activities



Surveillance once a pandemic has started – what to monitor (2)

- **Count cases** as long as practicable, (per day or per week according to evolution)
- **Count hospitalizations and deaths**
- **Monitor resources**

- Remember the pandemic could return in 2-3 waves



- To monitor the pandemic wave(s), patients and deaths should be counted, initially daily. Case definitions may need to be adapted and simplified.
- Number of consultations, number of hospitalizations and number of deaths among the people presenting with respiratory symptoms can be used to track the evolution of the pandemic.
- Pandemics come in waves and they may last for up to 6 to 8 weeks. A second wave is possible some months later. Those months allow further time for preparation. Surveillance of influenza cases should continue, adapting the case definition as necessary.

What we learnt in module 2

- Why we do influenza surveillance
- The difference between bird/animal and human surveillance
- How we do bird/animal and human surveillance
- What should be done when bird/animal cases are detected
- When to suspect human cases of bird or pandemic influenza
- What actions to take when cases of avian or pandemic influenza are detected in humans
- What to monitor during the pandemic.

