CONTINUE
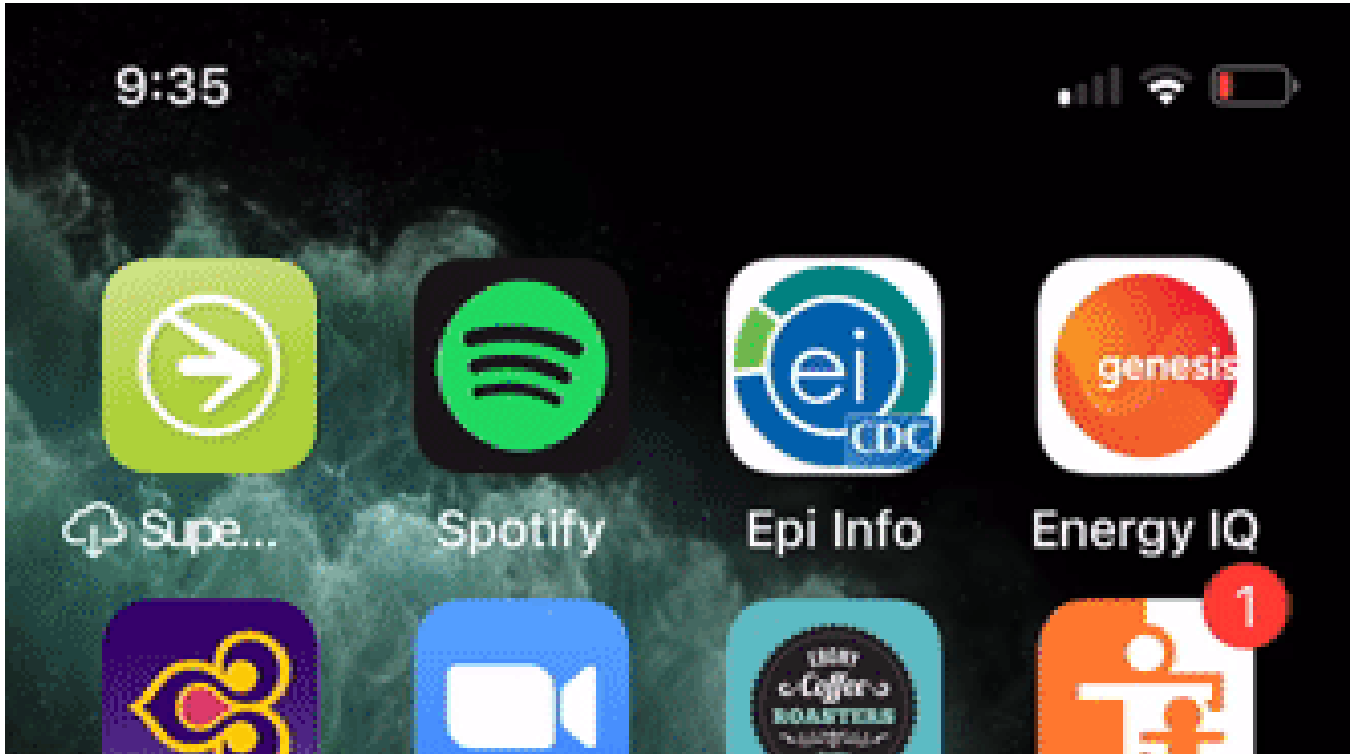
Click ▶ to play demonstration video for data input at <u>household-level</u>
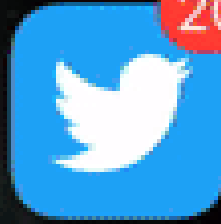
Thai... Zoom Ebon... SwitchParent...
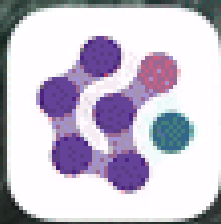
Mas... Goldair NZCOVIDTra... Twitter **20**

Linke... Epicollect5 Clu... Teams
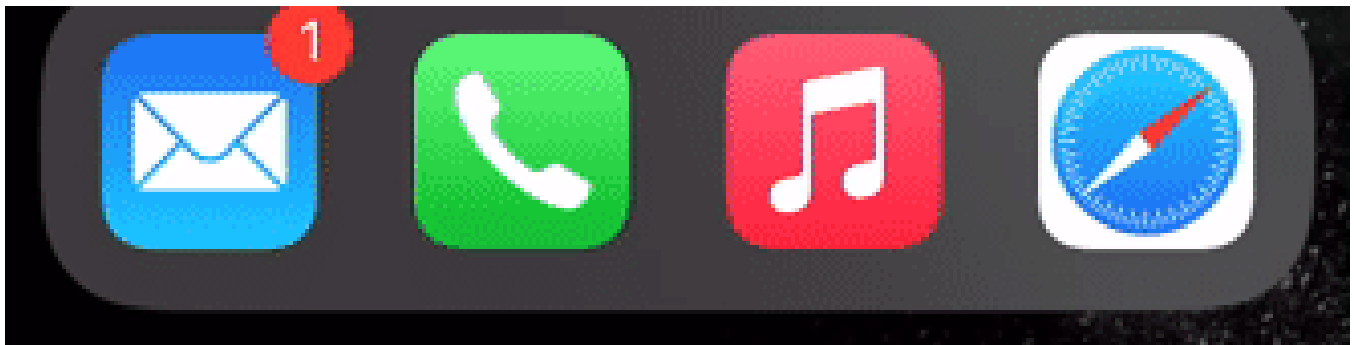
CONTINUE

"**Task 2:** Collecting information exercise using Epicollect5

1.Complete at least <u>one</u> village-level questionnaire. You can make up your own data.

2.Complete at least <u>two</u> household-level questionnaires within the village that you have created earlier in point 1. Again, you can make up your own data.

*Please put <u>your name</u> as outbreak investigator so we can identify you on the Epicollect5 database"

ⓘ Note:

1. If your phone is not compatible with Epicollect5, you can also do this exercise by adding information directly on the webpage. Create your login on Epicollect5 and go to our project webpage. https://five.epicollect.net/project/outbreakinvestigation. You can input data at both village-level and household-level.

2. The paper form (PDF format), both at village-level and household-level are also available for your reference. Click here to download.

CONTINUE

Event 6: Tracing
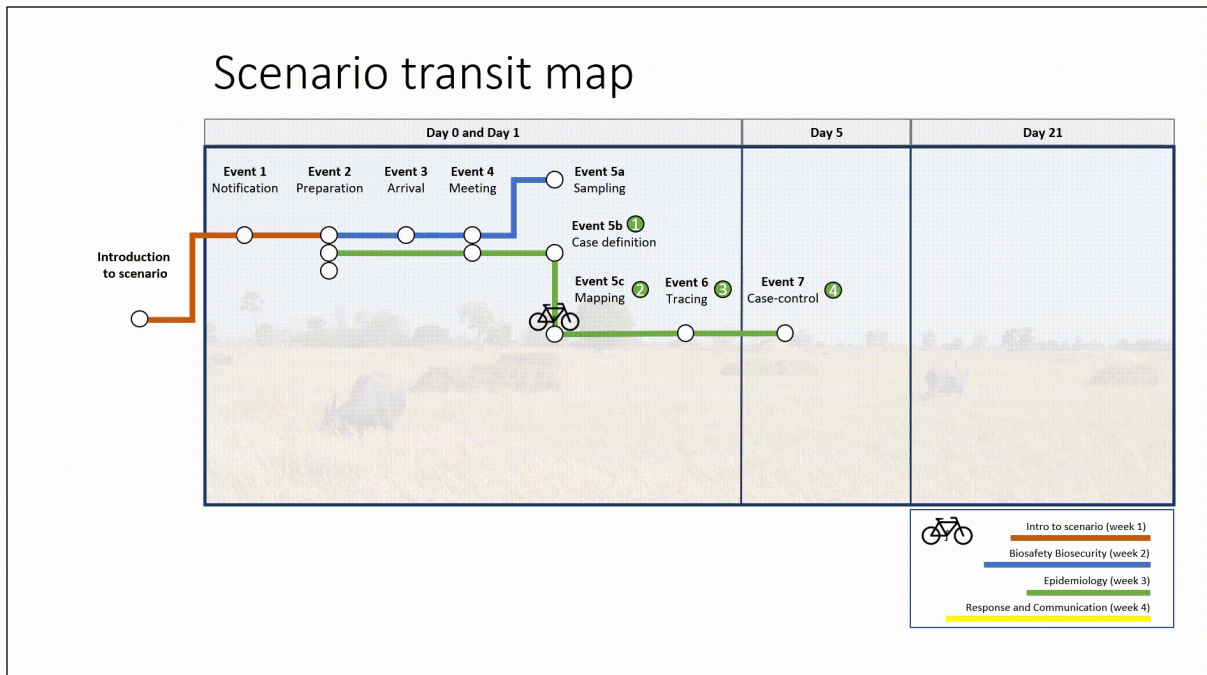
Let's continue with our outbreak scenario. Assuming an imaginary date that our Day 1 investigation is 5th December 2021. You have visited Farm 1, 2 and 3 who originally notified VAHW of their sick animals and established that:
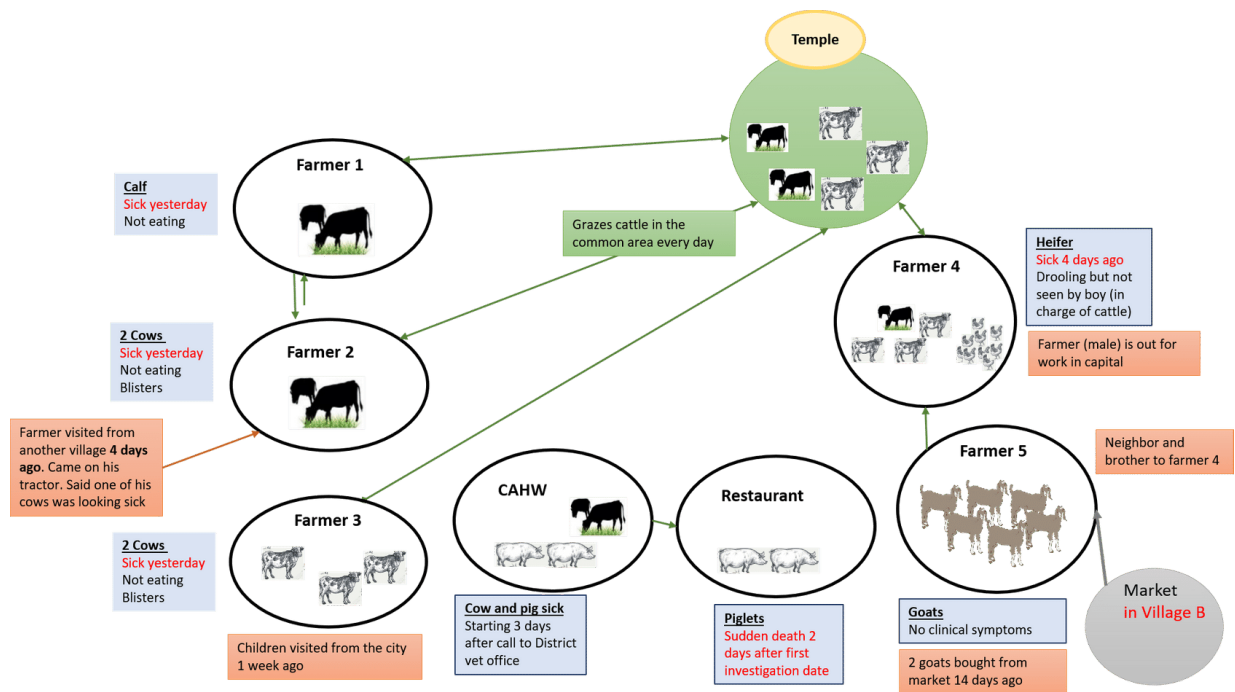
- Farm 1, 2 and 3 usually bring the animal to the grazing area near the temple.

- Farm 3 told you that Farm 4 also graze their animal in this area. So, you visited Farm 4 for further investigation.
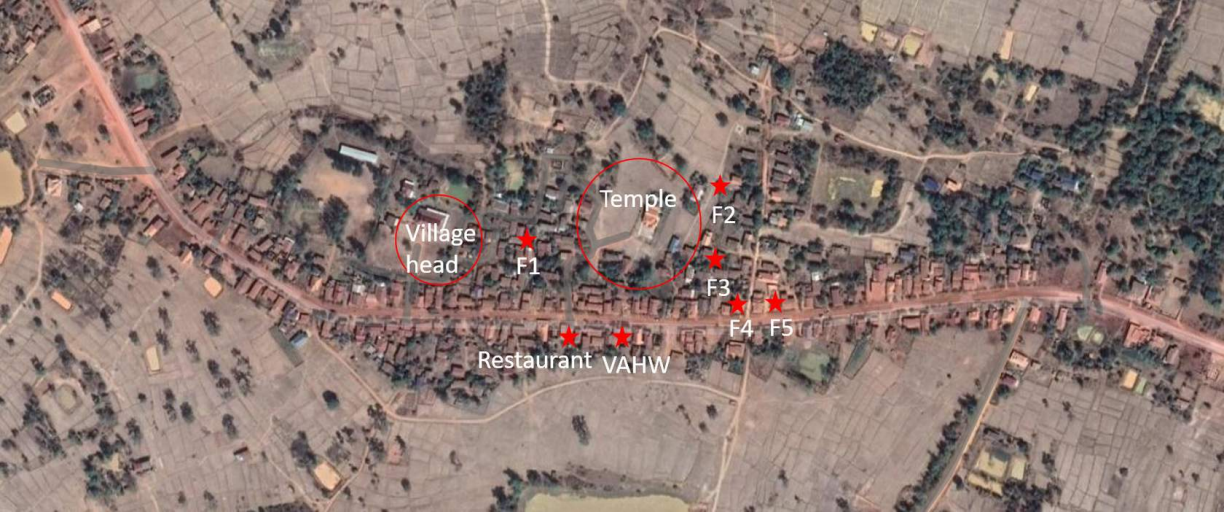
- Farm 4 were relatives to Farm 5. The caretaker of Farm 4 is the younger son who looks after Farm 5 while his father was working in the capital for 2 weeks. They share equipment on the farm and in close proximity.

The images below show the summary of events that occurred in Village A and the locations.

You can click on the image to "zoom in" for details

Temple

Farmer 1

Calf
Sick yesterday
Not eating

2 Cows
Sick yesterday
Not eating
Blisters

Farmer 2

Farmer visited from another village **4 days ago.** Came on his tractor. Said one of his cows was looking sick

2 Cows
Sick yesterday
Not eating
Blisters

Farmer 3

Children visited from the city 1 week ago

Grazes cattle in the common area every day

CAHW

Cow and pig sick
Starting 3 days after call to District vet office

Restaurant

Piglets
Sudden death 2 days after first investigation date

Farmer 4

Heifer
Sick 4 days ago
Drooling but not seen by boy (in charge of cattle)

Farmer (male) is out for work in capital

Farmer 5

Neighbor and brother to farmer 4

Goats
No clinical symptoms

2 goats bought from market 14 days ago

Market
in Village B

Summary of events in Village A

Map of village A

CONTINUE

"You would like to trace the infection source and its spread so you can apply appropriate immediate control measures.

Let's review the "source" and "spread" of disease infection first.

Click + to display information."

Source   —

The source of infection can be anything capable of bringing a disease agent from an infected animal in one area to a susceptible population in another area, or at another time, and establishing an outbreak. Possible sources of an outbreak might include:

- Infected animals or sub-clinically infected animals

- Fomites (contaminated vehicles, equipment, clothing, etc.)

- Contaminated feed, animal products

Spread —

The spread of an outbreak involves the transmission of disease to other animals by:

- Animal movement

- Direct contact between animals in the shared area (co-grazing)

- Movement of contaminated fomites

CONTINUE

"**Before you can begin to trace the source (Trace-back) and the spread (Trace-forward) of an outbreak, you will**

need to gather information to construct a 'tracing window'.

A tracing window = the most likely period of time during which the disease could have been introduced to an area (tracing window for source), or the most likely period of time during which the disease may have spread to another area (tracing window for spread)."

Below are the information required and sources that you may obtain from:

Click ↺ to flip the card.

Minimum and maximum incubation periods of the disease

This could be obtained from text books, publications, OIE disease card.

This could be obtained

Index case (1st farm/household that observed clinical signs)

from village meeting, farmer interview, outbreak investigation form.

Date observed clinical signs on index (1st) case farm/household

This could be obtained from village meeting, farmer inverview, outbreak investigation form.
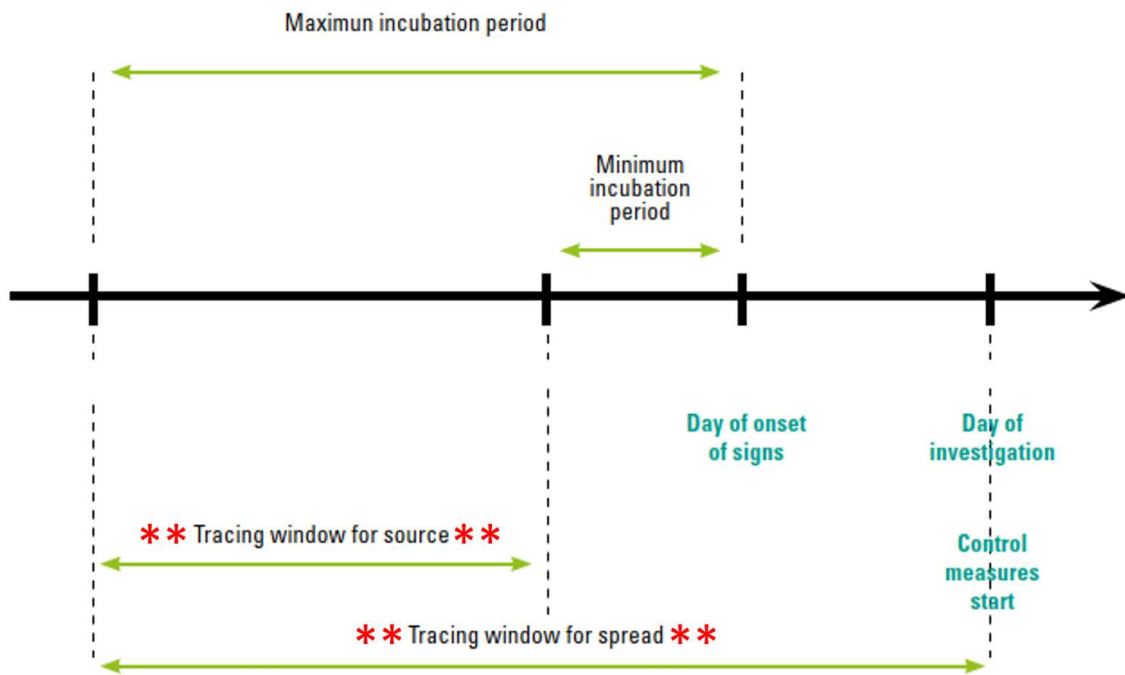
Tracing window diagram

(i) **Incubation period = the period of time between the date of infection and the date of onset of clinical signs.**

FMD incubation period = 2 - 14 days (OIE SEACFMD field outbreak investigation manual)

CONTINUE

The information collected during tracing can be used to...?

___

○ Provide information on possible sources and routes of spread to help prevent future outbreaks

○ Find affected areas and implement control measures in those areas to limit further spread

○ Find the source and implement control measures to prevent further exposure to the source

○ All of the above

SUBMIT

CONTINUE

"**Task 3:** Based on summary events of village A provided earlier, construct appropriate tracing windows. Note that the investigation date is 5th December 2021

1. Provide dates of tracing window for source.

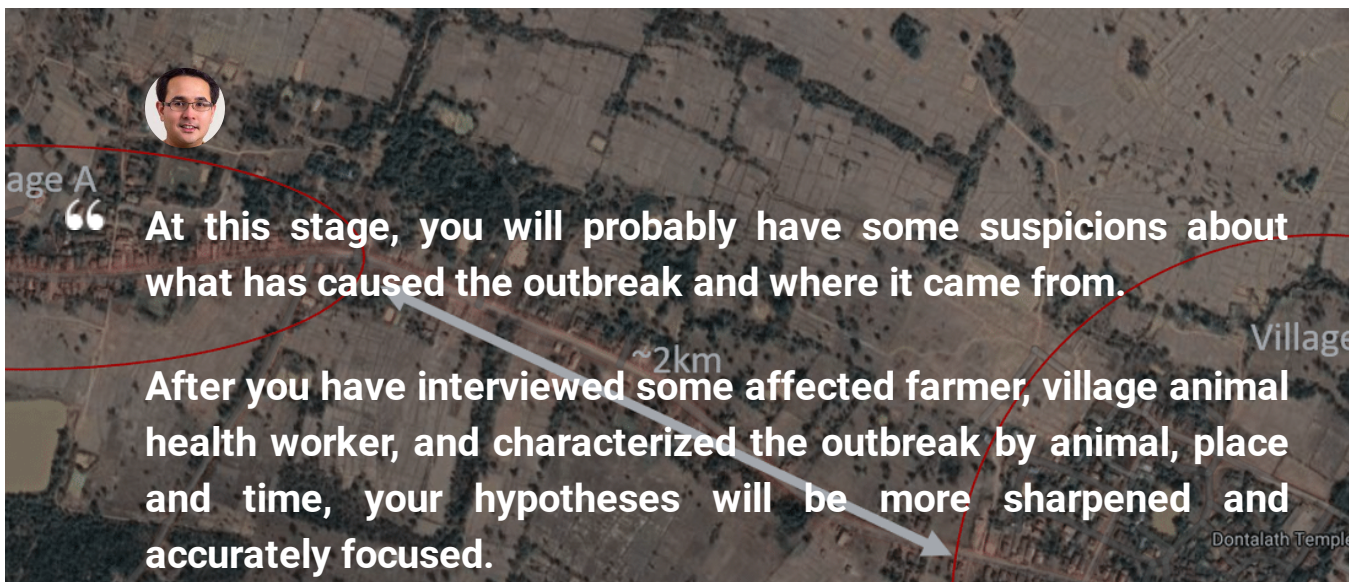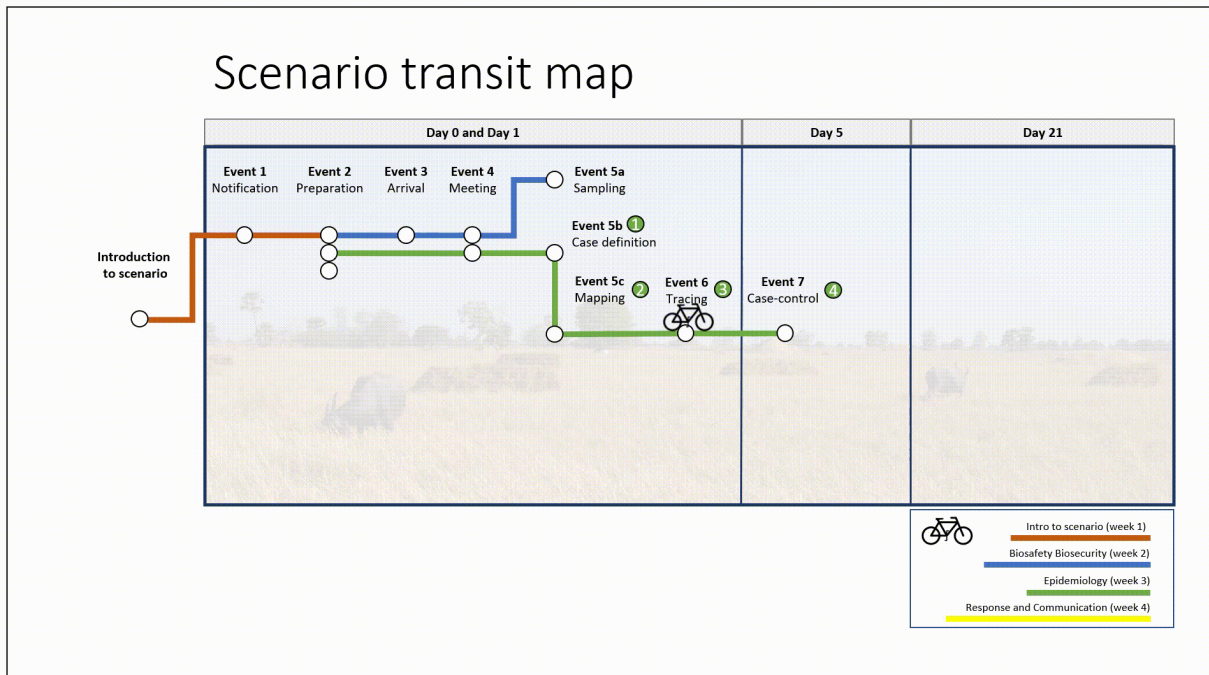**2. Provide dates of tracing window for spread.**

3. Based on the summary event of village A and the tracing window, how do you think that FMD has entered village A? and from where?

Post your answer on the forum. Click here."

ⓘ Reference: Page 22-27 of the OIE SEACFMD field outbreak investigation manual

CONTINUE

Event 7: Case-control study

> At this stage, you will probably have some suspicions about what has caused the outbreak and where it came from.
>
> After you have interviewed some affected farmer, village animal health worker, and characterized the outbreak by animal, place and time, your hypotheses will be more sharpened and accurately focused.

Your next task is to test these hypotheses using the analytical technique.

A case-control study is usually conducted at a later stage in the investigation, to confirm hypotheses made at the descriptive stage.

"**Complete the Case-control study lesson.**

Click here to enter the lesson"

CONTINUE

Case-control study (Day 5)

Methodology: From describing outbreak and tracing activity, you and the team decided to conduct case-control study. You formed a team and come back to collect information from Village A and B on Day 5 (9th December 2021). The plan is to use the outbreak investigation form in Epicollect5 to assist in data collection (as practised in **Task 2**).

With the help village head and VAHW from village A and B, you identified 25 households with FMD cases and randomly select 25 households with no FMD cases as controls. You assigned teams to visit and interview household member who look after the animals.

"**Task 4:** **For this task, we will work with a fabricated dataset (no connection to any past outbreak). Assuming that this dataset was from our case-control study. The data was extracted from the Epicollect5 database and cleaned by your colleague.**

Click <u>here</u> to download the dataset. Save it on your computer as you will have to use it for the following tasks and calculations.

1. By using MS Excel, prepare data to describe the Spatio-temporal pattern of the 25 FMD cases in Village A and B using the Microreact tool (as in Describing outbreak lesson, click here if you want to remind again). Describe your finding on the forum.

2. By using MS Excel, use the pivot table function to summarise the number of cases and controls for potential risk factors (e.g. grazing, sharing water source,

vaccination, bring in new animal). Then, use Statulator tools to calculate the odds ratio and perform statistical tests (as in Case-control study lesson).

Describe your finding on the forum. Click [here](#)."

CONTINUE

Outbreak report

"It is critical to document details of the initial outbreak and the follow-up investigation and implementation of control measures.

The outbreak investigation report is a way of communicating information about the outbreak and the effectiveness of your response to your colleagues and superiors within the Veterinary Services.

Let's watch the video to learn more about how to report the outbreak. Click ▶ to play the video."

Report the outbreak

Provide evidence of your efforts and records for future reference

Can be written in 2 formats:
- Preliminary report (short and concise document, 1-2 pages)
- Full report (scientific article style)

What should be in a good preliminary report?
- Title/author
- Introduction/background: who, what, when, where
- Objective of investigation: describe (retrospective), control (immediate response)
- Investigation methods and findings: how much, where from/to, transmission
- Sample collection and submission
- Preliminary control measures: actions taken and prescribed
- Recommended follow-up measures: control, surveillance

"**Ideally, the outbreak report should be completed as soon as possible after the initial investigation in order to keep your colleagues and superiors well informed.**

Follow-up reports can be made when new information becomes available (e.g. laboratory results, alteration of control measures, further spread of the initial outbreak)."

ⓘ **Examples of preliminary and full FMD outbreak investigation in Lao PDR are provided for your reference. Click here**

CONTINUE

Summary

"Outbreak investigation involves systematic gathering of data. The aim is to understand:

- the number of animals affected (including the population at risk)

- the location of the outbreak

- the timeline of the outbreak

- Where has the disease come from? and where could the disease spread to?

- What are the potential risk factors for the outbreak

This information will provide guidance for appropriate control measures and communication."

References

1. OIE Terrestrial Animal Health Code

2. OIE SEACFMD field outbreak investigation manual

3. FAO case definition of livestock disease

4. https://www.oie.int/en/animal-health-in-the-world/animal-diseases/Foot-and-mouth-disease/

Congratulations – end of week 3 scenario reached