



A Fatal Foodborne Outbreak Investigation of Unknown Pathogen in a Family Consuming Wild Boar Meat in Remote Province, Cambodia,2024: a Descriptive Study



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INTRODUCTION

- March 19, 2024: A district referral hospital in mondulkiri Province direported four villagers with suspected food poisoning presented vomiting, diarrhea, severe headache, and abdominal pain in which one died and two additional cases later.
- On March 20, 2024, the Foodborne Outbreak Rapid Response Team (FORT) conducted a risk assessment and deemed the situation High Risk.
- The National Foodborne Outbreak and Response Team (FORT) and provincial Rapid Response Team were deployed to the affected area.

OBJECTIVES

- To assess the size and scope of the outbreak.
- To identify its source, causative agent, and mode of transmission.
- To implement timely and appropriate control measures.

METHODS

Epidemiological investigation:

- Data collected from health authorities and referral hospital
- Medical chart review and patient/family interviews
- Active case finding in affected commune

Case definiiton

"Suspected case: Any individuals living in Srehuy Commune of Mondulkiri Province from March 14 – 23, 2024, present vomiting AND diarrhea AND (abdominal pain OR severe headache OR convulsion OR death)."

Laboratory investigation

- Patient samples: nasopharyngeal swab tested for *influenza*, and blood cultured for *Clostridium perfringens*.
- Food/environmental samples: pork, water, soy sauce, beetroot, fried rice sent for lab testing
- Animal sample: backyard chicken swab tested for HPAI

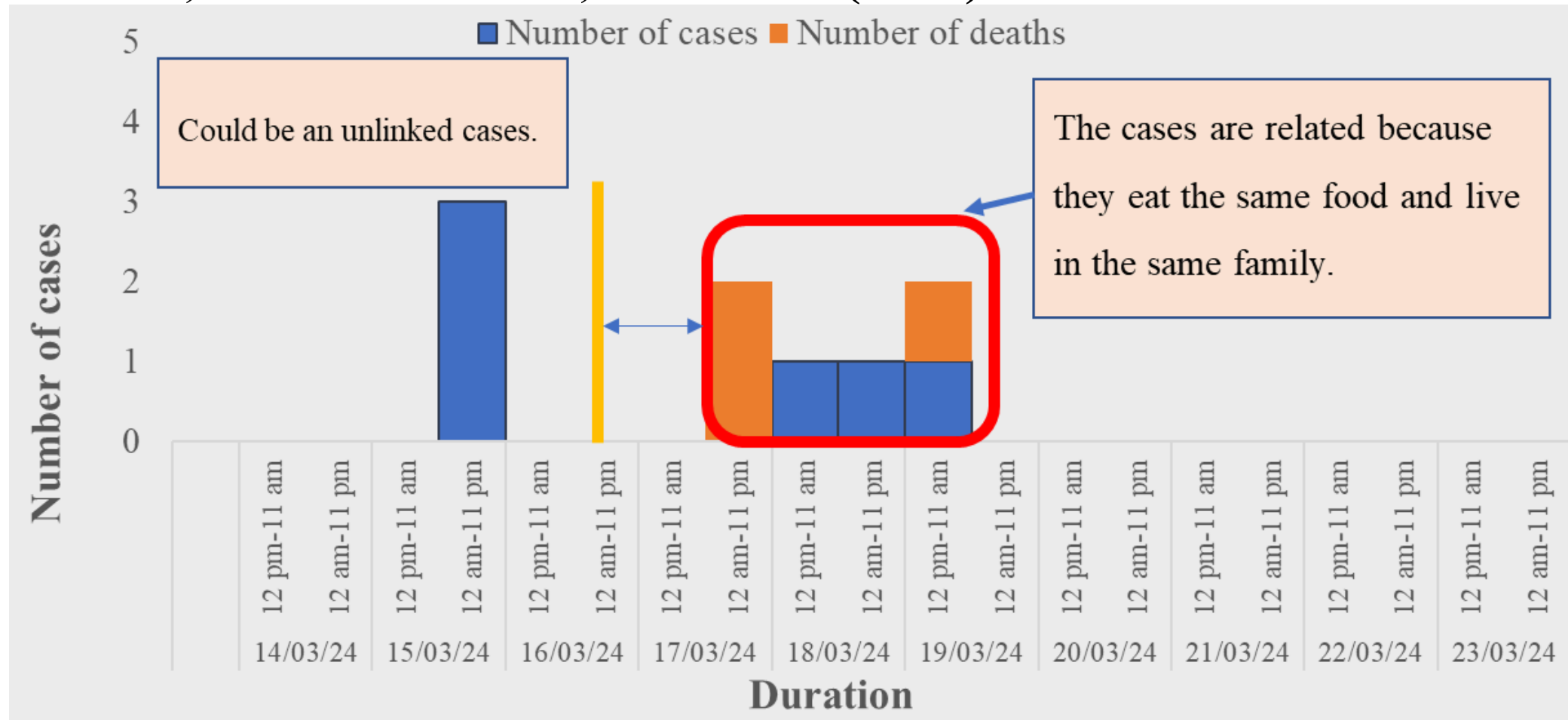
Environmental investigation

- Household: food, sauces, cooking methods/areas, storage conditions
- Environment: water sources/use, sanitation, hygiene
- Livelihood: animal husbandry, crop cultivation, animal health

REFERENCES

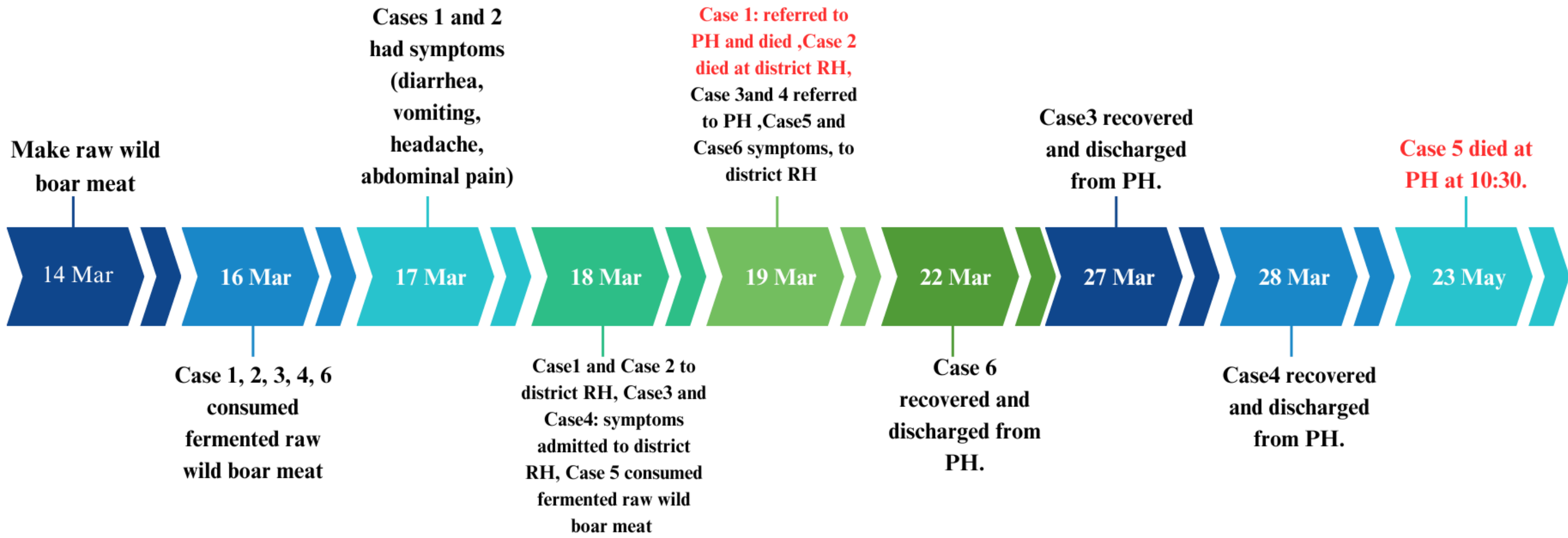
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Figure 1: Epidemic curve of Suspect Cases in Sre Huy Village, Sre Huy Commune, Koh Nhek District, Mondulkiri (N=9)



RESULTS

- Characteristics of cases (N = 06)
 - Six family members (2 females), aged 4–34 years (mean 20); adults were farmers, children (4–11 years) were students.
 - All had common exposure to fermented raw wild boar meat, drinking water, and cooked rice; incubation period 21–62 hours (mean 32).
 - Three adults (parents and uncle) died from respiratory failure and neurological deficit; three children survived.
- Three additional cases were identified through active case finding; they had similar symptoms but were not epidemiologically linked to the initial six cases. Their illness was mild, managed at home, and they had not consumed wild boar meat.



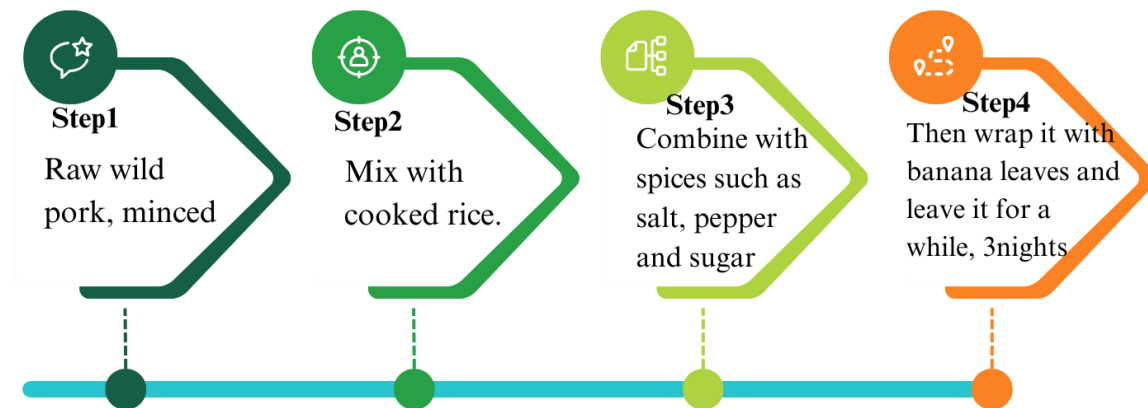
Laboratory investigation results

- Human samples: Blood (3 patients) culture negative for *Clostridium perfringens*; no *influenza virus* detected
- Wild boar meat: *E. coli*, *Staphylococcus aureus*, *Clostridium perfringens* (spores)
- Water: *E. coli*



Environmental investigation results

- Kitchenware, living surrounding and handling food sanitation and unhygienic
- Leftover food: stewed meat (wild boar), water, spices
- Affected household reported that several chicken died within a week prior to the incident
- No information about chemical spraying around the village.



CONCLUSIONS

- Cluster linked by time, place, and person; common exposure to raw wild boar meat, cooked rice, and tap water on the same day. *E. coli* and *Staphylococcus aureus* unlikely due to incubation/clinical pattern.
- Food poisoning outbreak in Cambodia; potential pathogens include *E. coli*, *Shigella*, *Salmonella*, *Staphylococcus aureus*, *Clostridium botulinum*, and *Trichinella*.
- Immediate community education on avoiding wild boar meat consumption.

LIMITATIONS

- Limited lab capacity; no blood/stool samples at admission; gaps in sample collection, packaging, shipping
- Case information based only on surviving children
- No forensic investigation conducted for 3 deaths

