

## **Applying Case Definitions in Ebola Virus Disease Surveillance in Ghana: Fear or True Clinical Basis for Suspicion?**

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### **BACKGROUND**

Case definitions are important tools in disease surveillance and control. They provide uniform clinical and demographic characteristics in determining whether a person meets the criteria for suspicion of a disease. Case definitions allow for the comparison of data and serve as triggers for public health actions. In Ghana, case definitions are based on the Integrated Disease Surveillance and Response (IDSR) guidelines. The working case definition for Ebola Virus Diseases (EVD) during the recent outbreak was: Any patient presenting with fever of >38°C and any 2 of the symptoms (haemorrhagic or other clinical presentations) PLUS a recent history of travel (less than 3 weeks) to a country with confirmed cases of Ebola OR contact with a confirmed, probable or suspected case of Ebola or other Viral Haemorrhagic Fevers OR a recent contact (less than 3 weeks) with a person with similar symptoms. Knowledge of and the application of case definitions in Ghana has been brought to question in the light of the recent outbreak of EVD in West Africa with over a 100 samples sent to the National Referral Laboratory all proven negative for Ebola and other Viral Haemorrhagic Fevers (VHF).

### **METHODS**

All suspected cases of EVD recorded at the Komfo Anokye Teaching Hospital (KATH) between April 2014 and December 2014 were reviewed. The review examined case notes and Case-based forms. Interview of clinical staff reporting suspected cases of EVD was also conducted. Data collection also included participant observation of clinical staff in the management of suspected cases of EVD.

### **RESULTS**

There were a total of six (6) suspected cases of EVD during the period. All 6 were confirmed negative for EVD and other VHFs within 24-48 hours after dispatch of samples to the Noguchi Memorial Institute of Medical Research (NMIMR). Two (2) of the cases had preliminary tests undertaken at the Kumasi Centre for Collaborative Research (KCCR) with results received in less than 24 hours. All suspected cases were isolated with minimal contact to healthcare staff until results were received.

### **Case I**

A 3-year old girl was seen with the following symptoms: fever, general bodily weakness, and haemorrhagic symptoms. There was no history of travel to any of the EVD affected countries or contact with a person with similar symptoms.

## **Case II**

A 37-year old male was seen with the following symptoms: fever, diarrhoea, abdominal pain, muscle pain, difficulty in breathing, skin rash and bleeding from rash. He had a history of a squirrel bite and was seen at a local hospital before being referred to the KATH. The patient had no known history of exposure to anyone with similar symptoms. Further consultation with other clinicians confirmed a diagnosis of a Vasculitis secondary to Squirrel bite. The patient was discharged after several weeks of admission.

## **Case III**

A 5-year old girl presented with a history of headache, fever, vomiting, anorexia, bleeding from nostrils and bloody vomitus. There was neither history of contact with a person with similar symptoms nor a history of travel to any of the affected countries. The child was discharged after a few days of admission.

## **Case IV**

An 18-month old male child seen with symptoms of fever, vomiting, diarrhoea with blood in stool, bloody vomitus and bleeding from nostrils. The patient was also bleeding from injection sites. There was no history of travel or contact with any person with similar symptoms. Patient died during admission. A post-mortem blood sample examination proved negative for Ebola and other VHF.

## **Case V**

A 25-year old male seen with a history of fever, diarrhoea, abdominal and muscle pain and a skin rash. There was no history of contact with an animal or a person with similar symptoms. There was no history of travel as well.

## **Case VI**

A 32-year old Liberian resident was knocked down by a vehicle and brought to KATH with bleeding from injury sites. The patient was unable to communicate well in English and alleged he had a viral illness. He tested negative for HIV.

The unknown viral illness was suspected to be Ebola. The triage unit of the Emergency Department was closed down for a few hours and the patient was kept there until test results for EVD came out negative. The patient subsequently received the needed surgical care for the injuries

Case /Symptoms	Fever	Haemorrhagic symptoms	Other symptoms	History of Travel to affected country	History of Contact
Case I	Yes	Yes	Yes	No	No
Case II	Yes	Yes	Yes	No	No
Case III	Yes	Yes	Yes	No	No
Case IV	Yes	Yes	Yes	No	No
Case V	Yes	Yes	Yes	No	No
Case VI	No	Yes	Yes	Yes	No

Table 1: Clinical symptoms at presentation for suspected cases of EVD in Kumasi, 2014

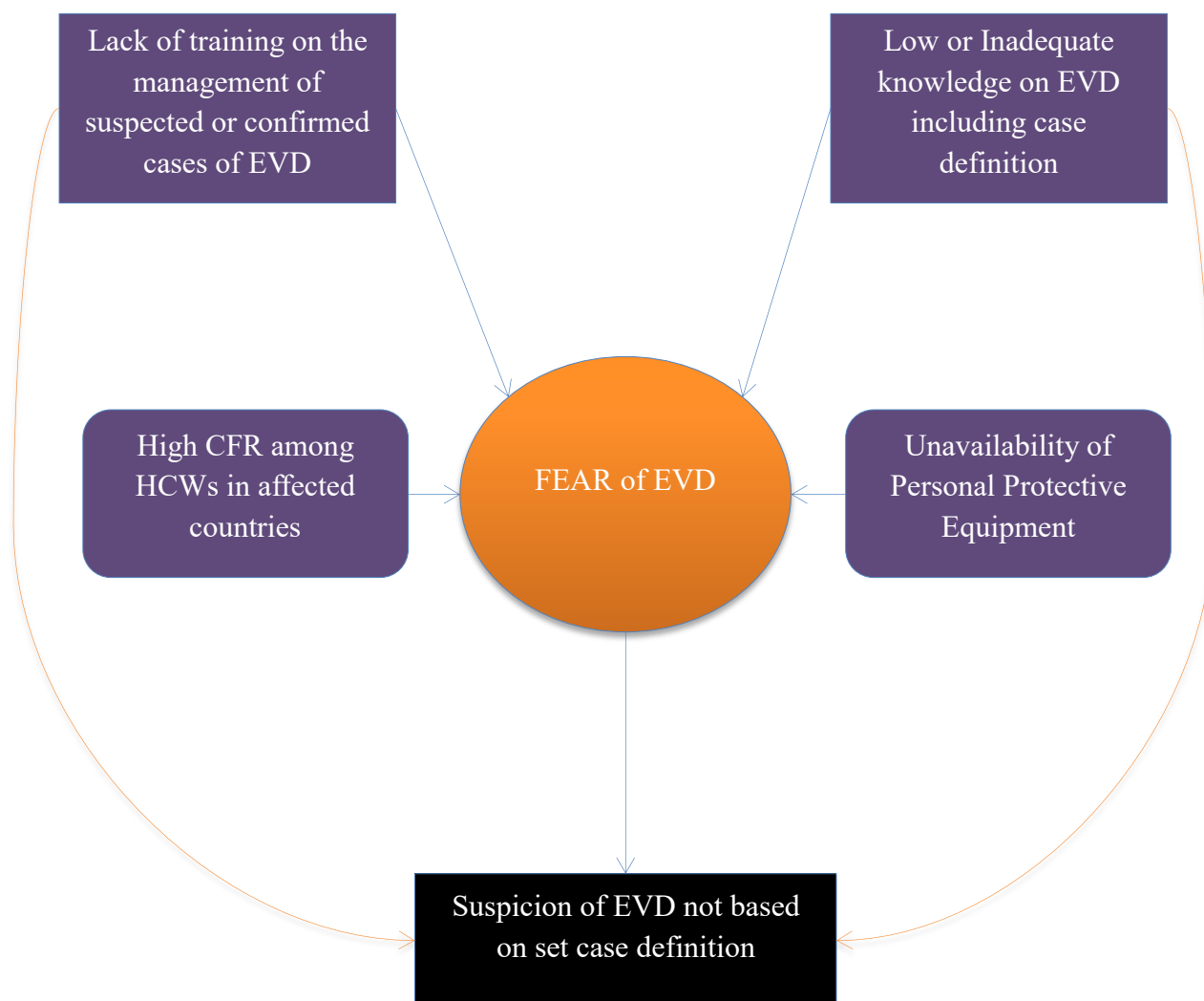


Figure 1: Interplay of factors leading to non-adherence to case definitions for EVD in KATH, Kumasi

## Conclusion

All 6 cases did not meet the case definition for EVD. The commonest symptom prompting investigation for EVD was haemorrhage with or without fever. The high proportion of cases which did not meet the case definition is a source of concern. Inadequate knowledge on EVD and the case definition account for this with fear of the disease an underlying factor.

Adequate training and addressing the underlying factors for fear may help ensure adherence to case definitions and the judicious use of resources. This will also ensure prompt management of cases to reduce the length of stay and any complications as a result of delays in initiating therapy.

## References

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