A98.3, A98.4 Ebola-Marburg viral diseases

RATIONALE FOR SURVEILLANCE

Ebola haemorrhagic fever is a rare but severe disease occurring primarily in areas of African rain forest. The disease is characterized by person-to-person transmission through close contact with patients, dead bodies or infected body fluids. Epidemics of the disease can be dramatically amplified in health care centres with poor hygiene standards; the attendant potential for explosive nosocomial infection constitutes the main threat to public health posed by the disease. Surveillance is aimed at early detection of cases in order to avoid epidemics and possible international spread of the disease.

Marburg virus infections are extremely rare. They appear to be similar to Ebola haemorrhagic fever and recommendations for both viral infections are the same.

RECOMMENDED CASE DEFINITION

Clinical description

Ebola haemorrhagic fever begins with acute fever, diarrhoea that can be bloody (referred to as "diarrhée rouge" in francophone Africa), and vomiting. Headache, nausea, and abdominal pain are common. Conjunctival injection, dysphagia, and haemorrhagic symptoms such as nosebleeds, bleeding gums, vomiting of blood, blood in stools, purpura may further develop. Some patients may also show a maculopapular rash on the trunk. Dehydration and significant wasting occur as the disease progresses. At a later stage, there is frequent involvement of the central nervous system, manifested by somnolence, delirium, or coma. The case-fatality rate ranges from 50% to 90%.

Laboratory criteria for diagnosis

Supportive:

- Positive serology (ELISA for IgG and/or IgM), **or**

Confirmatory:

- Positive virus isolation *(only in a laboratory of biosafety level 4)* **or**
- Positive skin biopsy (immunohistochemistry) **or**
- Positive PCR

Case classification

Suspected: A case that is compatible with the clinical description.

Probable: *in epidemic situation:*

- Any person having had contact with a clinical case and presenting with acute fever, **or**
- Any person presenting with acute fever and 3 of the following symptoms: headache, vomiting / nausea, loss of appetite, diarrhoea, intense fatigue, abdominal pain, general or articular pain, difficulty in swallowing, difficulty in breathing, hiccoughs, **or**
- Any unexplained death

Confirmed: Any suspected or probable case that is laboratory-confirmed.

Contact: *in epidemic situation:*
An asymptomatic person having had physical contact within the past 21 days with a confirmed or probable case or his/her body fluids (e.g., care for patient, participation in burial ceremony, handling of potentially infected laboratory specimens).

In epidemic situations and after laboratory confirmation of a few initial cases, there is no need for individual laboratory confirmation and the use of "suspected or probable" case classifications is sufficient for surveillance and control purposes.

RECOMMENDED TYPES OF SURVEILLANCE

In endemic areas and in the absence of an epidemic:

Immediate reporting of suspected cases from the periphery to intermediate and central levels to ensure rapid investigation and laboratory confirmation.

Note: Routine surveillance of Ebola haemorrhagic fever must be integrated with routine surveillance for other viral haemorrhagic fevers (e.g., Crimean-Congo fever, Lassa fever, Rift Valley fever, yellow fever).

In epidemic situations:

- Intensified surveillance and active finding of all suspected and probable cases for immediate isolation, and of all contact subjects for daily medical follow-up
- The surveillance area should be monitored for a duration corresponding to 2 estimated incubation periods after the date of death or hospital discharge of the last case
- A rumour registry should be established to create a systematic registration of rumours of cases reported by the population
- A single source of official information is essential to ensure coherence and avoid confusion in the public

RECOMMENDED MINIMUM DATA ELEMENTS

Case-based data for reporting and investigation

- Case classification (suspected / probable / confirmed)
- Unique identifier, name, age, sex
- Geographical information, name of head of family, name of father (if child)
- Profession, place of work
- Date of onset of fever, symptoms, signs
- Hospitalization, including date
- Death including date
- Contact with previous case, including date
- Nature and date of clinical samples taken for laboratory investigation (if any)

Aggregated data for reporting

- Number of cases (suspected / probable / confirmed) by age, sex
- Number of deaths

RECOMMENDED DATA ANALYSES, PRESENTATION, REPORTS *(EPIDEMIC SITUATIONS)*

An epidemiological bulletin should be sent daily to local health authorities and to WHO headquarters. It should include the following information:

Cases:

- Total cumulative number of cases
- Total cumulative number of deaths
- Current number of patients
- Current number of hospitalized patients
- Date of last identified case
- Date of death or hospital discharge of the last reported case

Breakdown by sex and age group can also be provided

Contacts:

- Current number of contacts requiring follow up
- Current number of contacts under proper follow-up

Breakdown by sex and age group can also be provided

When possible, the geographic distribution of cases and contacts should be provided, as well as a simple epidemic curve.

Case-fatality rates, attack rates, and age-specific attack rates can be calculated for epidemiological assessment.

A more detailed report summarizing events and data should be produced weekly and a complete report should be available at the end of the epidemic.

PRINCIPAL USES OF DATA FOR DECISION-MAKING

Routine surveillance data

- Detect an isolated case or an outbreak and immediately take appropriate measures to avoid an epidemic

Active case finding and contact tracing during outbreaks are essential for control

- Identify all cases and contacts
- Assess and monitor the spread of an outbreak
- Evaluate control measures
- Provide a basis for research (epidemiological data, clinical specimens)

SPECIAL ASPECTS

Since extreme biohazard is associated with sampling, transportation and laboratory investigation, strictly applied biosafety procedures and appropriate isolation of patients are essential.

All known Ebola strains from Africa produce disease in humans; one Ebola strain from the Philippines (Reston) has infected humans without producing disease.

CONTACT

Regional Offices
See Regional Communicable Disease contacts on pages 18-23.
Headquarters: 20 Avenue Appia, CH-1211 Geneva 27, Switzerland
Communicable Diseases Surveillance and Response (CSR)
E-mail: rodierg@who.ch / outbreak@who.ch
Tel: (41 22) 791 2109 / 2573 / 2111 Fax: (41 22) 791 48 93 / 07 46 attn CSR