



Evidence-based guidelines for supportive care of patients with Ebola virus disease

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The 2013–16 Ebola virus disease outbreak in west Africa was associated with unprecedented challenges in the provision of care to patients with Ebola virus disease, including absence of pre-existing isolation and treatment facilities, patients' reluctance to present for medical care, and limitations in the provision of supportive medical care. Case fatality rates in west Africa were initially greater than 70%, but decreased with improvements in supportive care. To inform optimal care in a future outbreak of Ebola virus disease, we employed the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology to develop evidence-based guidelines for the delivery of supportive care to patients admitted to Ebola treatment units. Key recommendations include administration of oral and, as necessary, intravenous hydration; systematic monitoring of vital signs and volume status; availability of key biochemical testing; adequate staffing ratios; and availability of analgesics, including opioids, for pain relief.

Introduction

The 2013–16 Ebola virus disease outbreak in west Africa was associated with unprecedented challenges in the provision of care to patients with the disease, including a need for acute care that exceeded the number of health workers available, the absence of pre-existing treatment and isolation facilities, a dearth of treatments specific to Ebola virus, and, possibly, limitations in the provision of supportive medical care.^{1,2}

Ebola virus disease is a febrile, multisystem illness, with a predominance of gastrointestinal symptoms and signs—namely nausea, vomiting, diarrhoea, and abdominal pain—that frequently lead to hypovolaemia, metabolic acidosis, renal dysfunction, and multi-system organ dysfunction.^{1–5}

With initial severe mismatches between care demand and system capacity, and the reluctance of people to present for treatment, the initial risk of mortality was greater than 70%. Individualised clinical supportive care improved as community health and Ebola treatment units developed.⁶ This care included better symptom control, laboratory-facilitated diagnosis of organ dysfunction, treatment of shock with enteral and parenteral fluids and electrolytes, and rapid diagnosis or empirical treatment of concomitant illnesses such as malaria and bacterial infections. Associated with these measures, the case fatality rate decreased to approximately 40% throughout west Africa, and declined further while clinical and health system experience and capacity increased.^{6,7}

These experiences suggested the need to develop an evidence-based approach to the supportive care of patients with Ebola virus disease. Therefore, we developed evidence-informed guidelines for the delivery of supportive care to patients admitted to Ebola treatment units during a future outbreak using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology.⁸

Scope and definitions

These guidelines focus on the delivery of supportive care measures to patients in Ebola treatment units where health care resources are limited, a context typical in outbreaks of Ebola virus disease. The guidelines could be relevant to other infectious diseases with clinical syndromes similar to Ebola that are managed in isolation facilities (eg, other haemorrhagic fevers). The target audiences include health workers, governmental and non-governmental health agencies, public health organisations, local and clinical facility managers, and health policy makers at all levels.

Group composition and meeting

The multidisciplinary guidelines panel comprised 34 participants: ten critical care physicians (two specialists in paediatric care), one critical care nurse, two emergency medicine physicians, two general practice physicians, five infectious diseases physicians, one lawyer, one psychologist

Search strategy and selection criteria

We searched MEDLINE, MEDLINE In-Process, Embase, Cochrane Database of Systematic Reviews, Cochrane Central, African Index Medicus, and PubMed for papers published in any language between the first available date in each database and February, 2016. For our systematic scoping review of interventions for shock and shock-like syndromes in resource-limited settings, we included an extensive list of illnesses that share characteristics with Ebola virus disease (Ebola, shock, cholera, sepsis, and other severe diarrhoeal illnesses) and we did not limit the search to specific interventions. Additional data to populate the evidence summaries was acquired by a more targeted search of PreMEDLINE and grey literature (eg, medical history textbooks, literature that is not controlled by commercial publishers). The complete systematic scoping review appears in the appendix.