

## **FAQ General 1. What are the key aspects of nutritional care in Ebola Treatment Units (ETUs)?**

Ebola Virus Disease (EVD) is a life-threatening multisystem illness that frequently leads to hypovolemia, metabolic acidosis, hypoglycemia, and multi-organ failure.<sup>1</sup> Poor nutrition can result from and aggravate the disease process. Ebola Treatment Unit (ETU) patients therefore require simultaneous medical and nutritional care.<sup>2</sup>

### ***How does EVD interfere with nutrition?***

Many common EVD symptoms interfere directly with food intake and nutrition and/or increase nutritional requirements; notably fever, fatigue, anorexia, vomiting, diarrhoea, nausea, abdominal pain, difficulty swallowing, sore throat and hiccups.<sup>3,4</sup> Loss of appetite is a particularly serious impediment to meeting the increased nutritional needs of EVD patients and compensating for nutritional losses. Encephalopathy can also play a major role in limiting nutrition; patients become disoriented and forgetful, and often need to be reminded to continue to eat and drink. General weakness can make simple actions, such as holding water bottles, opening food containers or using cutlery, very challenging for an EVD patient. Without caretaker support for these tasks, they may be demotivated to eat.

EVD symptoms are similar among different age groups.<sup>5</sup> Among young children, who cannot easily communicate, symptoms may manifest only as poor feeding or suckling, but can have potentially dangerous implications if not identified and acted on.<sup>6</sup>

### ***What is the importance of nutritional care for EVD patients?***

Although the lack of specific research<sup>7</sup> has made it difficult to define the best practices for nutritional care in ETUs, the importance of good nutrition in fighting infection is well known. Researchers and practitioners have also emphasized the need for good nutritional care for EVD patients.<sup>7,8</sup> Furthermore, adequate nutrition is essential in the management of critical illness or sepsis,<sup>7</sup> whether a patient has EVD or not.

EVD patients have varied nutritional needs, depending on the stage of illness and the individual patient's underlying nutritional status.<sup>3</sup> Maintaining or re-establishing optimal nutritional status improves response to treatment.<sup>7,8</sup> All efforts should be made to avoid malnutrition. For patients who already present with or develop malnutrition, food and drinks should be introduced and adjusted carefully to manage the reductive adaptation associated with malnutrition, in addition to the systemic physiologic burden of EVD.

Maintaining adequate hydration is also crucial for EVD management and continued oral rehydration with nutritionally appropriate products is important for optimal care, even when IV rehydration is being provided.

Beyond their clinical importance, food and nutrition are also very meaningful aspects of social practice and emotional well-being. Food preferences and habits are closely linked to religious beliefs, culture and social values.<sup>3</sup> Interviews with survivors and practitioners have emphasized the importance of an ETU's reputation among the local population and the impact it has on health care seeking behavior. Rumours about poor and/or inadequate food in ETUs can undermine messaging to seek testing and/or accept transfer to ETUs.

### ***What are the basic principles of nutritional care in an ETU?***

Providing nutritional support should be a priority in the care of ETU patients, especially children.<sup>6</sup> An adapted diet should be provided for all patients depending on their clinical condition. **In critically ill patients with severe dehydration, nutritional support should not interfere with fluid volume and electrolyte replacement strategies. At this stage, the correction of dehydration takes precedence over the patient's diet.**

Nutritional care in ETUs must include provision of individualized food and drinks and assistance to consume them. A well-functioning food delivery system must accompany high-quality patient care. A regular cycle of assessment, monitoring, and re-adjustment of all components of nutritional care is essential to ensure that patient needs and quality standards are being met.

All patients admitted to an ETU should receive a full nutritional assessment (See FAQ PC1) to define the individual nutritional care required. The evaluation should include dietary needs (including nutritional status), dietary preferences, and need for feeding support.

Cases of acute malnutrition should be managed according to national protocols for the treatment of acute malnutrition.

Solid, semi-solid, and liquid diet options should be prescribed according to needs identified in the nutritional assessment. Since most patients with active disease have poor appetite, soft foods and fluids are generally easiest to tolerate.<sup>3</sup> For descriptions of different dietary options based on food consistency (solid, semi-solid, liquid) see FAQ PC2.

Previous interim guidance materials have suggested use of maintenance, transition, and boost phases<sup>3</sup> for nutrition care. These phases have not been included in the present FAQ series, wherein nutritional intake focuses on age category and type of diet tolerated (liquid, semi-solid, or solid). Field teams can decide which model is most helpful for provision of nutritional care in their respective context.

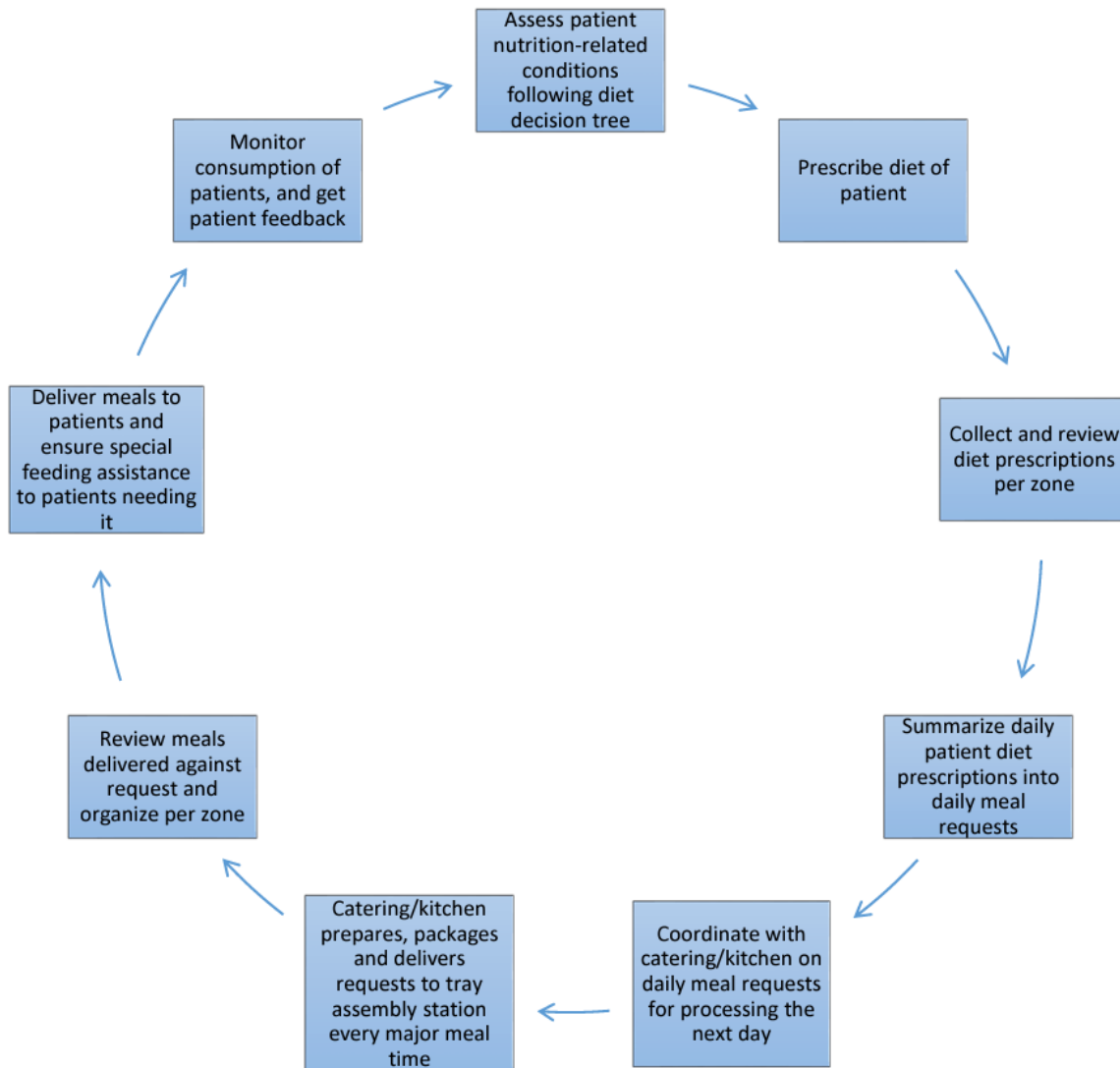
Efforts to motivate patients to eat, without adding stress, are key to recovery. Fluid intake is also essential and should be encouraged with every meal or snack and whenever possible. During recovery, EVD patients often have an increased appetite and additional food should be provided accordingly.

Once an EVD patient has been declared cured through consecutive negative PCR tests, discharge planning should begin. Proper attention should be given to help ensure that discharged convalescent patients will continue to consume nutritionally rich meals upon leaving the ETU (see FAQ G5). If this will not be possible with the private resources available to the patient, he or she should be referred to appropriate support services or the ETU itself should provide discharge rations/survivor support.

**How is nutritional care in an ETU organized?**

Nutritional care of ETU patients includes aspects of direct patient care as well as the food system that provides appropriate foods and drinks to patients. The nutritional care process is a system that intends to guide and link staff involved in these different aspects of the nutritional care and support of ETU patients. It describes the major activities affecting the nutritional assessment, diagnosis, intervention and monitoring of patients. See FAQ FS1 for more on the ETU food system.

**Figure 1: Nutritional care process in ETUs<sup>9</sup>**



## References

1. World Health Organization. *Optimized Supportive Care for Ebola Virus Disease: Clinical Management Standard Operating Procedures*. World Health Organization; 2019.
2. République Démocratique du Congo, Ministère de la Santé, Programme National de Nutrition (PRONANUT), with support from UNICEF. *Protocole de Soins Nutritionnels Dans Le Context de La Maladie a Virus Ebola and Republique Democratique Du Congo*.; 2019.
3. World Health Organization, World Food Programme, United Nations Children's Fund (UNICEF). *Interim Guideline: Nutritional Care of Children and Adults with Ebola Virus Disease in Treatment Centres*. World Health Organization; 2014.
4. Lamunu M, Olu OO, Bangura J, et al. Epidemiology of Ebola Virus Disease in the Western Area Region of Sierra Leone, 2014-2015. *Front Public Health*. 2017;5:33. doi:10.3389/fpubh.2017.00033
5. Dixit D, Masumbuko Claude K, Kjaldgaard L, Hawkes MT. Review of Ebola virus disease in children – how far have we come? *Paediatr Int Child Health*. 2021;41(1):12-27. doi:10.1080/20469047.2020.1805260
6. World Health Organization. *Clinical Management of Patients with Viral Haemorrhagic Fever: A Pocket Guide for Front-Line Health Workers: Interim Emergency Guidance for Country Adaptation*. World Health Organization; 2016.
7. Ververs M, Gabra M. Nutritional Care for Patients with Ebola Virus Disease. *Emerg Infect Dis*. 2020;26(1):20-25. doi:10.3201/eid2601.191024
8. Ververs M, Anantharam P. Nutritional Care For Patients With Ebola Virus Disease In Ebola Treatment Units: Past And Current Experiences. *US Dep Health Hum Serv Cent Dis Control Prev*. Published online August 26, 2019:28.
9. Ministry of Health and Social Welfare, Republic of Liberia. *Guidelines on Nutritional Care and Support for EVD Patients in Treatment Units and Care Centers - A Practical Guide for Implementing Agencies Involved in the Management and Treatment of EVD in Liberia*.; 2014.