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Infant feeding in the context of Ebola

Introduction

Since the onset of the Ebola outbreak in West Africa in the first half of 2014, several concerns have been raised about infant feeding and about nutritional care for patients. Guidance was required but no guidance on these issues existed. The crafting of guidance is challenging since on key issues, little evidence is available. This document is based on the best available information and will be updated as more evidence and experience from the field will become available.

1. Community at large

The key messages are:

1) Exclusive breastfeeding is the best way to feed an infant under 6 months, and should continue, with adequate complementary feeding, up to two years or beyond.
2) Seek help promptly if you develop symptoms compatible with Ebola and have been in close contact with a sick patient or a person deceased with Ebola.
3) Only when a trained health worker has determined that a mother meets the criteria of probable, suspected or confirmed Ebola Virus Disease (EVD), breastfeeding should be stopped and available options discussed.

2. Breastfeeding mothers with symptoms compatible with Ebola but not yet assessed nor tested for Ebola

What to advise mothers and health staff where a mother is reporting symptoms but
a) she is not yet tested (but will be) or
b) testing is not available?

Continue breastfeeding; seek care from a health-care worker trained in diagnosing Ebola, to determine whether the mother meets the criteria of probable or suspected EVD (case definitions[i]).

It is not possible to define a case as "confirmed" in the absence of laboratory testing.

When a trained health-care worker suspects Ebola:
For situation (a), suspend breastfeeding until the result becomes available; meanwhile, provide infant formula (if infant is younger than 6 months) or animal milk and appropriate complementary foods (if older than 6 months) and help the mother express her breastmilk to alleviate pain and prevent inflammation, and to heat treat the milk if this is opted for (see below).
For situation (b), the surveillance team should arrange for the collection of blood samples and transport to the closest laboratory. In the meantime, follow guidance for situation (a).

3. Breastfeeding mothers with confirmed Ebola; asymptomatic child under 6 months of age

Available evidence: Ebola virus is found in breastmilk[ii]. In earlier outbreaks, no infants born to infected women and/or who were breastfed survived. Further evidence is being collected.

Guidance:

1) Cessation of breastfeeding[iii]. Options are:
    a. Expressing and heat treating the expressed milk (details to be added).
    b. Provision of breastmilk substitutes. For details see the guidance on infant feeding in emergencies[iv] and on Infant and Young Child Feeding (IYCF) counselling[v] . With regards to the type of breastmilk substitute to use, therapeutic milks like F75 and F100 are not appropriate. Ready to use infant formula (RUIF) has an advantage over powdered infant formula since it does not require reconstitution with water and could therefore be the safest option. For guidance on amounts, see Table 1 below. For calculation purposes, an average of 750ml per day per infant is suggested.
    c. Establish mechanisms for requisition and distribution, coordinate efforts among actors and ensure compliance with established operational guidance.
2) Do not allow wet-nursing to avoid any possibility of infection of the infant by the wetnurse, or of the wetnurse by the infant
3) Provide psychological support to the mother

At the moment, insufficient evidence is available about the recommended duration of breastmilk cessation after the mother's recovery from Ebola. It is therefore recommended to not resume breastfeeding unless testing of the milk has confirmed the absence of the virus in the milk.

Table 1. Amount of prepared infant formula an infant needs per day[vi]

Age of infant in months	Weight in kilos*	Amount of formula per day	Number of feeds per day	Size of feed in mls**
0-1	3	450ml	8	60ml
1-2	4	600ml	7	90ml
2-3	5	750ml	6	120ml
3-4	5	750ml	6	120ml
4-5	6	900ml	6	150ml
5-6	6	900ml	6	150ml

*Always use the actual weight of the infant to calculate feed amounts, even if the infant's weight is very different to what you expect for their age.

**Amounts rounded for ease of measurement, and therefor approximate. Difference between columns amounts to plus or minus 30ml per day variation

4. Breastfeeding mothers with confirmed Ebola; asymptomatic child between 6-23 months of age

Available evidence: Ebola virus is found in breastmilk[vii]. In earlier outbreaks, no infants born to infected women and/or who were breastfed survived. Further evidence is being collected.

Guidance:

1) Cessation of breastfeeding[viii]
    a. Expressing and heat treating the expressed milk
    b. Provision of breastmilk substituties. For details see the guidance on infant feeding in emergencies[ix] and on Infant and Young Child Feeding (IYCF) counselling[x] . The existing guidelines[xi] should be followed, and are summarised herewith:
    c. Acceptable milk sources include full-cream animal milk (cow, goat, buffalo, sheep, camel) which should be pasteurised before use, Ultra High Temperature (UHT) milk, reconstituted evaporated (but not condensed) milk, fermented milk or yogurt. When the diet does not include fortified foods or supplements, the amounts of milk needed range from ~200-400 mL/d if other animal-source foods are included in the diet, and ~300-500 mL/d if not. For calculating purposes, an average of 500ml per day is suggested.
    d. Commercial infant formula is an option when it is available, affordable, can be safely used, and provides a nutritional or other advantage over animal milk (e.g. if fortified food products or supplements are not available or are more expensive). RUIF can also be used for these children and could be the most practical and safe option. The recommended amounts are ~280-500 mL/d if other animal-source foods are included in the diet, and ~400-550 mL/d if not. For calculating purposes, an average of 500ml per day is suggested.
    e. Establish mechanisms for requisition and distribution of any required products , coordinate efforts among actors and ensure compliance with established operational guidance
3) Do not allow wet-nursing to avoid any possibility of infection of the infant by the wetnurse, or of the wetnurse by the infant
4) Provide psychological support to the mother

At the moment, insufficient evidence is available about the recommended duration of breastmilk cessation after the mother's recovery from Ebola. **It is therefore recommended to not resume breastfeeding** unless testing of the milk has confirmed the absence of the virus in the milk.

5. Breastfeeding mothers with confirmed Ebola; child with confirmed Ebola

Guidance: Continue breastfeeding. Please note that a laboratory test is required to confirm Ebola.

6. Orphans under 6 months of age

Available evidence: existing evidence on infant feeding in emergencies

Guidance:

1) Do not allow wet-nursing to avoid any possibility of infection of the infant by the wetnurse, or of the wetnurse by the infant
2) Follow the guidance on infant feeding in emergencies[xii] and the recommendations above for children under 6 months

3) Establish mechanisms for requisition and distribution of any required products, coordinate efforts among actors and ensure compliance with established operational guidance
4) If the mother or other relatives were confirmed Ebola cases, these children are considered a *contact*, so should be followed up for 21 days. There is no need for children of a mother or other relative with confirmed Ebola to avoid close contact with other family members/relatives.

7. Orphans between 6-23 months of age

Available evidence: existing evidence on infant feeding in emergencies; existing evidence on complementary feeding non breastfed children 6-23 months of age

Guidance:

1) Do not allow wet-nursing to avoid any possibility of infection of the infant by the wetnurse, or of the wetnurse by the infant
2) Follow the guidance on infant feeding in emergencies[xiii] and feeding non breastfed children 6-23months of age[xiv] and the recommendations above for children 6-23 months
3) Establish mechanisms for requisition and distribution of any required products, coordinate efforts among actors and ensure compliance with established operational guidance
4) If the mother or other relatives were confirmed Ebola cases, these children are considered a *contact*, so should be followed up for 21 days. There is no need for children of a mother or other relative with confirmed Ebola to avoid close contact with other family members/relatives.

8. Other issues to consider

1) In addition to the risk of transmission from breastfeeding mother to infant, there is a risk of transmission from an infected breastfeeding infant to a wetnurse, so wet-nursing should be avoided.
2) The local infrastructure might not be adequate for milk banking so it is recommended to avoid it
3) All patients who recover from Ebola should receive nutritional screening and treated when they are found diagnosed with acute malnutrition
4) With regards to nutritional recovery for patients who are not malnourished – discharge rations of high energy dense foods are recommended for all age groups; it should be locally determined what or which foods are the most appropriate ones to distribute. Requisition and distribution should be organised locally. Preferred options are corn soy blend (CSB) or high energy density biscuits. The use of Ready to Use Therapeutic Foods (RUTF) for this purpose can be recommended if no other foods are available.
5) The risk of spreading Ebola from the use of anthropometric equipment is considered very low when following WHO's Infection Prevention and Control Guidance[xv]
6) With regards to the treatment of severe acute malnutrition (SAM) and other conditions: suspected EVD cases should be isolated in a separate ward.

[i] http://www.who.int/entity/csr/resources/publications/ebola/ebola-case-definition-contact-en.pdf?ua=1
[ii] Bausch, DG, et al. Assessment of the risk of Ebola Virus transmission from bodily fluids and fomites. Journal of Infectious Diseases 2007:196 (Suppl 2)
[iii] WHO. Clinical Management of patients with Viral Haemorrhagic Fever: A pocket guide for the front-line health worker, Interim guidance – generic draft for West African adaptation, April 2014
[iv] http://www.ennonline.net/ifemodule2
[v] http://www.ennonline.net/hivandiycfcounsellingtrraining
[vi] http://files.ennonline.net/attachments/142/module-2-v1-1-annexes-english.pdf
[vii] Bausch, DG, et al. Assessment of the risk of Ebola Virus transmission from bodily fluids and fomites. Journal of Infectious Diseases 2007:196 (Suppl 2)
[viii] WHO. Clinical Management of patients with Viral Haemorrhagic Fever: A pocket guide for the front-line health worker, Interim guidance – generic draft for West African adaptation, April 2014
[ix] http://www.ennonline.net/ifemodule2
[x] http://www.ennonline.net/hivandiycfcounsellingtrraining
[xi] http://whqlibdoc.who.int/publications/2005/9241593431.pdf?ua=1
[xii] http://www.ennonline.net/ifemodule2
[xiii] http://www.ennonline.net/ifemodule2
[xiv] http://whqlibdoc.who.int/publications/2005/9241593431.pdf?ua=1
[xv] http://www.who.int/csr/bioriskreduction/filovirus_infection_control/en/