Ready to Use Therapeutic Foods and CTC

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Severe malnutrition: extent of the problem

In poor countries, 1 to 4% of children are severely malnourished (WFH<3 Zscore)

(Global WHO UNICEF malnutrition data base)

No way that more than a fraction of these children can be treated in pediatric wards

Understood > 30 years ago

Risk associated with hospital admission for severely malnourished children

Already noticed > 30 years ago:


Note: crowding together infected immuno-compromised children create a quasi experimental conditions for pathogen germ transmission

Chapko et al, J Trop Pediatr 1994

Starting from the 60's, strong movement in favour of community based nutrition rehabilitation

1- Day care nutrition rehabilitation centres

2- Residential nutritional rehabilitation centres

3- Home based programmes

All community based or at least detached from hospitals
Use of locally available foods
Usually, strong education component

About 40 years experience with these programmes
Controversy re. their efficacy right from the beginning
Community based treatment of severe malnutrition last century: 2001 WHO review

Poor performance ... *The main problem is slow rates of weight gain... (i.e. < 5g/kg/day)*

... *No examples of reliable systems.*

High level of input: often in-patient phase followed by day care or residential feeding centres, or systematic home visiting by trained health workers from the nutrition centres

No information on programme coverage

Food dilemma for community based nutrition rehabilitation programmes

**Milk based products (WHO F100):**

- high weight gain but ...
- easily contaminated, excellent growth medium for bacteria, possible confusion with breast milk substitutes
- cannot be used in the community

**Other foods: low weight gains, even in controlled settings**

Need for a food as effective as F100 but without the associated problems strongly felt for years
How the first RUTF was developed

First, failed attempts to develop a solid F100 substitute

High fat content:
• Low melting point fat: melts in hot climates
• High melting point fat: tastes like a candle

Compared nutritional composition of WHO F100 and a reference chocolate spread

<table>
<thead>
<tr>
<th></th>
<th>Spread</th>
<th>WHO F100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteins (%)</td>
<td>6.5</td>
<td>13</td>
</tr>
<tr>
<td>CHO (%)</td>
<td>57</td>
<td>51</td>
</tr>
<tr>
<td>Lipids (%)</td>
<td>31</td>
<td>34</td>
</tr>
</tbody>
</table>
A spread is different from a condensed milk
(Briend A and Briend A, unpublished)

A spread is slowly released from the stomach (A Briend, unpublished results, 1998)

Healthy (??) adult volunteer
Radio opaque spread
Spread observed in the stomach by X ray
Slow release, slow disintegration (several hours)
Weight gains in F100 and RUTF groups

Mean: 10.1 vs 15.6 g/kg/day, $P < 0.001$

Diop et al., Am J Clin Nutr 2003

Need to reorganise the treatment of severe malnutrition to take advantage of the RUTF

Adding RUTF to classical therapeutic feeding centres had little practical advantages

Need to overhaul the whole approach
2001- Steve Collins and Valid develop the software needed to use RUTF: Development of the CTC model

VIEWPOINT

Changing the way we address severe malnutrition during famine

Steve Collins

This year, yet again, saw widespread food insecurity and famine across the horn of Africa. Again, humanitarian agencies set up operations to implement various relief programmes. Nutritional interventions included general ration distributions to the whole of an affected population; blanket supplementary feeding to all members of an identified risk group; and targeted community-based therapeutic feeding centres for moderately malnourished and therapeutic feeding centres for the severely malnourished. As is usual in emergencies, many of the therapeutic feeding centres were hard to set up and did not achieve an adequate coverage of all the severely malnourished. This combination of delays and low coverage meant that many therapeutic feeding centres achieved little overall impact on mortality. I believe that the present focus on therapeutic feeding centres as the sole mode of feeding severely malnourished people during famine is inappropriate and often counterproductive. A new concept of emergency-based therapeutic care is necessary to complement therapeutic feeding centre interventions if relief programmes are to address the plight of the severely malnourished in an efficient and effective manner. During an emergency, the community-based therapeutic care approach could quickly provide good coverage and appropriate treatment for large numbers of severely malnourished people. The principles behind community-based therapeutic care are, however, developmental, empowering communities to cope more effectively with crises and with transition back to normality. This is very different to the therapeutic feeding centres’ approach that stymies communities, requires very large amounts of external staff and resources, and undermines the infrastructure. Although emergency community-based therapeutic care programmes could be large-scale and implemented quickly, they could also evolve into developmental health model nutritional programmes without changing their conceptual basis. Conversely, health programmes, although largely sustainable, could in times of crisis quickly scale-up into effective emergency interventions. Creating such a continuum between emergency and developmental approaches has long been a holy grail of humanitarianism.

2005: Increasing evidence that community based management of severe malnutrition works

Extensive data (>> 10 000 children) showing:

• Weight gain on average ~ 5g/kg/day
• Low mortality
• High programme coverage
Sobering thought

Indeed RUTF is now changing the way we treat severe malnutrition but...

... we could have had the idea 30 years ago...

No major obstacle for having the same idea in 1975 when the correct proportion proteins, lipids and carbohydrates needed for nutritional rehabilitation were found.

Today's problem:

We made spectacular progress in the management of severe malnutrition in the last 10 years

How to scale up?

How to put treatment of severe malnutrition on the international agenda (MDG 1 & MDG 4)?

How to make it sustainable?
WHO Position re. Community based treatment of severe malnutrition

No official guidelines. RUTF use in the community not endorsed by WHO.

Developing recommendations on community based management of severe malnutrition considered as a high priority

These new guidelines should complete existing documents re. facility based treatment

Global informal expert meeting being organised by CAH and NHD Departments (21-23 November 2005) to formulate WHO recommendations