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Managing severely malnourished children in the community

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Childhood malnutrition continues to be a significant public health problem especially in Asia and Africa, and is recognized as the leading underlying cause of mortality among children in most developing countries. If the Millennium Development Goals are to be met, particularly the reduction in child mortality (MDG 4), effective interventions to address severe acute malnutrition (SAM) among under-5 children must be brought to scale alongside preventative measures. In Asia and Africa, acute malnutrition and more so, SAM among under-five remains a major embarrassment and impediment to optimal human capital development. WHO and UNICEF proposed diagnostic criteria for SAM in under-5 children include any of the following: (i) weight-for-height z- score <-3, (ii) visible severe wasting, (iii) presence of bipedal edema, and (iv) mid-upper arm circumference below 115 mm (WHO 2009). With any of these criteria globally close to 4% (~19 million) of all under-5 children are affected by this serious nutritional disorder (Black, Allen et al. 2008). The mortality associated with SAM is extremely high, ranging from 73 to 187 per 1000 (Black, Allen et al. 2008); (Pelletier 1994). Prevention and appropriate and prompt treatment of malnutrition are, therefore, crucial in reducing mortality and morbidities.

Children suffering from SAM and moderate acute malnutrition (MAM) can be treated at outpatient site or outreach site. A program which combines inpatient care for SAM with complications, outpatient care for SAM without complications and children with MAM is known as Community-based Management of Acute Malnutrition (CMAM). CMAM (formerly known as Community-based Therapeutic Care) was endorsed as the treatment of choice for SAM in the 2007 joint UN agency statement. This change in policy was one of the enabling factors for governments to start establishing and scaling-up CMAM programming at national level in Africa and parts of Asia, over the past few years. The scale-up of CMAM programming in developing countries is continuing at a rapid pace and has acquiring government and multi-donor support.

The primary components of CMAM are: i) community mobilization and case finding; ii) outpatient therapeutic care for SAM without complications; iii) inpatient therapeutic care for SAM with complications; and iv) the management of moderate acute malnutrition (MAM) where services are in place. CMAM also emphasizes its integration into existing health systems so it may be better sustained with government budgets over the longer term. Major constraints affecting CMAM scale-up reported were: a) financial constraints to purchase ready-to-use-therapeutic-food RUTF; b) government priorities and policies regarding CMAM, including lack of acceptance of importation of RUTF; and c) inadequate quality of existing activities, e.g. some countries stated the need for program reviews before deciding whether to scale up.

The nutritional component of SAM treatment is RUTF, an energy-dense, lipid-based paste, which is administered to SAM children ~ 200 kcal/kg/day until they become MAM (when they are supplied with or advised for a suitable supplementary food). RUTF contains ~ five times more macro and micronutrients than to F-100 (is a WHO-recommended fortified liquid milk-based diet for the nutritional rehabilitation of SAM children in a hospital setting). RUTF can be stored and administered at home with little risk of microbial contamination. It can be eaten directly from the package, with a shelf-life up to 24 months. The typical composition of the prototype RUTF (ingredient percentage of weight) is whole milk powder 30%, sugar 28%, vegetable oil 15.4%, peanut paste 25%, and mineral vitamin mix 1.6%. The case-fatality rates typically achieved with CMAM using RUTFs compare favorably with rates observed in facility-based management (Bhutta, Ahmed et al. 2008). The average cost of community-based therapeutic care per child was $203 (95% CI) $139-$274), of which RUTF cost was 36% (Bachmann 2009; Wilford, Golden et al. 2011). Further cost reduction is possible by using locally available RUTF. Another 34% cost would get down if we can use the existing government set up. To preclude the possibility of commercial exploitation of malnutrition an indigenously manufactured RUTF to be produced in partnership with industry and food technological institutes and tested on a programmatic scale. CMAM needs to be scaled-up particularly in Asia and Africa to save the children, and improve their health and potential, which would help the future of Asian and African countries.

Keywords: Severe acute malnutrition; Moderate acute malnutrition; Community-based Management of Acute Malnutrition.

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