

Recommendations

National Workshop on “Development of Guidelines for Effective Home Based Care and Treatment of Children Suffering from Severe Acute Malnutrition”

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A. Introduction

In India, as per the National Family Health Survey-II estimates, the burden of under-three children with severe acute malnutrition (SAMN), defined by the weight for height criteria, is 2.8%. The mortality amongst children with SAMN is high (typically 20-30%), and has mostly remained unchanged. According to the World Health Organization (WHO) Guidelines, children suffering from SAMN (weight for height below 3 SD of NCHS reference population), require management in hospital. Extrapolating the under-three years prevalence of SAMN to the current total population of India of 1100 million, it is expected that 2.6 million under-five children will be suffering from SAMN. In India, there are only 0.9 million total hospital beds. Admission of all children with SAMN is

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thus not operationally feasible, and hence home-based management is an unavoidable alternative for a proportion of these subjects. Preliminary evidence suggests that this alternative may be acceptable, cost-effective, and reduce morbidity and mortality.

In spite of a substantial burden, no guidelines are currently available for effective home based care and treatment of SAMN children. A National Workshop was therefore organized to develop possible guidelines that can be delivered by a team of Auxiliary Nurse Midwives (ANMs) of Health Department and Anganwadi Workers (AWWs) of ICDS Department for effective home based care and treatment of children suffering from SAMN. Deliberations were jointly organized by the Department of Human Nutrition, All India Institute of Medical Sciences, New Delhi and Indian Academy of Pediatrics (Subspecialty Chapter on Nutrition) from 11th to 13th November 2005 at New Delhi. The list of participants is enclosed as Appendix-I.

B. Conclusions and Recommendations

I. Malnutrition and Child Mortality

SAMN is an important contributor and underlying determinant of under-five mortality. Strong scientific evidence exists on synergism between undernutrition and child mortality due to common childhood morbidities including diarrhea, acute respiratory infections, malaria and measles. The risk of death is 20-60 times higher when severely malnourished children suffer from any of these morbidities. Despite improvement in economy, health sector, literacy, and health and nutrition indices, the prevalence of SAMN identified by anthropometry continues to be

unacceptably high, especially in under-three children.

II. Current Strategies for Management of SAMN Children in India

The current strategies for identification and management of children with SAMN through existing health system involving health functionaries such as AWW and ANM are inadequate and need standardization.

Integrated Management of Neonatal and Childhood Illnesses (IMNCI) strategy primarily identifies SAMN children by subjective clinical criteria of “*visible severe wasting*” or “*bipedal edema*”. For management, the IMNCI strategy advocates hospital referral for all SAMN children.

There is a need for formulating and testing standardized guidelines for domiciliary management of SAMN children who are unable to utilize the referral facilities.

III. Experience with Community based Management of SAMN Children

Review of global experience indicates that all 4 delivery systems, namely, (i) day-care, (ii) residential nutrition centers, (iii) health clinics, and (iv) domiciliary care can be effective for treatment of SAMN children. Interventions at the home level are more economical. Provision of ready to use therapeutic food (RUTF) for rehabilitation at home was effective in 5 of 7 studies but its cost, logistics of procurement and distribution, and sustainability of supply need to be carefully considered. Also, RUTF may at best be regarded as a short-term option for food-insecure households.

Indian experience is limited to management of SAMN children at Nutrition Rehabilitation Clinic (NRC)/ home following initial stabilization in the hospital. In one

center, children managed at NRC demonstrated earlier catch-up growth than those managed at home; however, the differences narrowed down in long term. Locally made (pre-packaged) or home-prepared energy dense foods have been successfully used along with nutrition and health counseling.

IV. Identification/ Diagnosis of Children Suffering from SAMN

Considering various desirable attributes including simplicity, acceptability, cost, accuracy, reliability, objectivity, age independence, functional consequences, prediction (sensitivity, specificity), and minimal modifications of the available programmatic criteria, identification of SAMN may be based on: (i) clinical criteria (presence of ‘*visible severe wasting*’ or ‘*bipedal edema*’) or (ii) mid upper arm circumference (MUAC) of <11 or 11.5 cm in children between 6-60 months of age. However, the suggested MUAC cut-offs are not based on Indian population, and need validation.

MUAC has predictive ability for mortality in newborns also. Possible use and cut-offs in infants <6 months of age needs exploration.

MUAC may not be useful for evaluating response to rehabilitation therapy for which serial weight recording is desirable. Severe malnutrition occurs over a long period, and hence weight recording as per current practice in ICDS should be continued.

The anthropometric criterion of “weight for height” for diagnosis of SAMN was considered complicated and operationally not feasible, as it requires use of many tools and complex calculation. This criterion may create confusion amongst the health workers and AWWs.

In spite of the ground realities of ongoing programs, the most peripheral child health

worker (AWW, ANMs) should identify severely malnourished children, and get them verified by higher level of functionaries wherever feasible.

Role of family members including mothers, Traditional Birth Attendants, link workers in the community (*Jagat Chachi/Tai, village adolescents, etc.*) in identification of SAMN children needs active exploration.

All available opportunities for identification of SAMN should be utilized so that maximum children are covered. All possible contact opportunities with children should be exploited including home visits, anganwadis, immunization outreach sessions, subcenter, PHC and CHC clinics.

Registered Medical Practitioners (RMPs) can be important stakeholders and be trained as a part of community involvement. Formal linkages between RMPs and government functionaries can be developed for identification and referral of SAMN children in the community.

For urban slums and migratory populations, a separate strategy based on future governmental initiatives for identification of SAMN children should be developed.

V. Categorizing SAMN Children as “Complicated” or “Uncomplicated” for Deciding about Home-based Management

Programmatically, it would be helpful to categorize SAMN children into “complicated” and “uncomplicated” cases based on simple clinical tools.

Uncomplicated cases: Children with SAMN above the age of 6 months should satisfy the following recommended criteria to be labeled as “uncomplicated”. Child should be (i) alert, (ii) with preserved appetite, (iii) clinically assessed to be well (absence of general danger

signs and severe anemia, cough and difficult/fast breathing, cold to touch and severe dehydration), and (iv) living in a conducive home environment. Home based management could be feasible, acceptable, and cost effective option for those children categorized as “uncomplicated”.

Complicated cases: All children below 6 months with SAMN should be presumed to be “complicated.” Those older than 6 months but not fulfilling the criteria for uncomplicated as above should also be considered to be “complicated”. Institutional care was considered mandatory for “complicated” cases because of high risk of mortality in poorly supervised and ill-equipped settings.

VI. Management of an Uncomplicated SAMN Child at Home After Screening

Facility based management of SAMN children, as per current WHO Guidelines (1999) is the best option. For subjects who cannot avail this option, alternatives need to be explored, which include: (i) initial stabilization at health facility followed by home based management; (ii) initial assessment at health facility followed by home based management; and (iii) community based evaluation by health workers followed by home based management.

The ensuing recommendations for home based care and treatments are primarily based on expert opinion and African experience as relevant scientific evidence is lacking in the Indian setting. These recommendations should be considered exploratory in nature pending validation, especially under programmatic conditions. The recommendations for home based care may act as a proxy for the recommended WHO Guidelines on health facility based management until evidence indicates otherwise. It is unlikely that a single system will suit all situations in the country.

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Experience indicates that home management of SAMN is likely to be successful in closely monitored conditions with standard protocols, motivated staff and parents. An effective home based care and treatment program should be comprehensive and simultaneously address nutritional, medical, social, and economical aspects.

Diet: Energy dense therapeutic diets with low bulk are essential in the initial phase of management. However, these should be economical, available, and acceptable. These diets could be (i) home based (prepared/modified from the family pot) or (ii) ready to use therapeutic food (RUTF). Feeding should be frequent (6 to 8 times per 24 hours), active, and hygienic. Commercially available international RUTF may not be suitable (acceptable, cost effective and sustainable) for Indian settings.

Multiple micronutrient and mineral supplementation should be provided orally as per the WHO guidelines for inpatient management of SAMN children.

Oral antibiotics (co-trimoxazole or ampicillin) should be administered for 7 days at initial enrolment to all SAMN children, if not received earlier.

Single dose deworming should be given (as per IMNCI guidelines) to SAMN children above one year of age.

Hypothermia should be prevented by maintaining environmental temperature and covering the child well, particularly during night.

Child should receive complete immunization schedule for his age as per National guidelines.

Children with diarrhea should be preferably assessed at a higher level of health care. Low-osmolarity ORS is to be used for

preventing and treating dehydration till ReSoMal is available.

Imparting health education, improving household food security, promoting community participation, motivation and nutritional counseling should be integral components of home based care.

There is an urgent need to develop and test indigenous and economical RUTF. There is also an urgent need to develop indigenous single formulations of: (i) multiple micronutrients and (ii) mineral mix, and make them commercially available for treatment of SAMN children.

VII. *Reaching the SAMN Children for Home Based Care through Existing Health Programs*

Broadly, the following programs (health worker) were identified for convergence of existing health and nutrition services to the SAMN child: (i) ICDS (AWW); (ii) RCH II including IMNCI (ANM); and (iii) National Rural Health Mission (ASHA).

It was realized that involvement of *Panchayat*, Health and Rural Development is essential for long-term solutions. After in depth discussions endorsing the limitations of ICDS, it was felt that ICDS is still the best option available for reaching the SAMN children.

There is a need to further empower ICDS worker by giving her full time status or by increasing their numbers per Anganwadi Center to allow them to undertake home visits for counseling of mothers of SAMN children.

VIII. *Nutrition Counseling to Mothers of SAMN Children*

Anganwadi worker should provide nutritional counselling to mother of a SAMN child. Health workers and doctors should

strengthen this counselling. Capacity building of AWW was considered essential. The Foods and Nutrition Departments and Medical Colleges in the states could share this responsibility.

Nutrition counselling should be primarily based on IMNCI guidelines. It should promote home based food. Small, frequent and energy dense feeds should be promoted.

There should be a uniformity and accuracy in the messages. Conducive environment needs to be fostered for counseling. Besides the primary care giver, counseling also needs to be done for other decision makers in the family.

Content of the message needs to be simple, appealing, logical, short, technically correct, culturally acceptable, and practical. These messages need to be backed up by appropriate services.

IX. Monitoring of SAMN Child by AWW/ ANM after Initiation of Home Based Treatment

Monitoring of SAMN child - following enrolment in home based care program - can be done by anthropometry (weight gain) and/ or clinical parameters (feeding patterns, appetite, lethargy, loss of edema and danger signs). Only the health workers should use anthropometry. The clinical monitoring tools for follow up of a SAMN should be similar for mothers and the health workers.

Frequency of follow up visits by the health worker/AWW should be: (i) first two weeks: 2 contacts / week separated by at least 48 hours; (ii) 3-8 weeks: once a week; (iii) from 8 weeks till 6 months: every 4 weeks (shift back to weekly follow up if any danger signs occur again); and (iv) end point: 6 months or MUAC of 11 cm and more, whichever is later.

The recommended anthropometric norms for satisfactory improvement are: (i) no further weight loss from the baseline in a non-edematous child: at first follow up visit; and (ii) weight gain of at least 100 g/week at subsequent visits, irrespective of age.

Outcome of treatment were defined as follows:

Non-responder (within first 4 weeks): Child does not lose edema in 4 weeks or does not start gaining weight in 2 weeks. If the child develops a danger sign at any time during first 4 weeks, the child should be referred to a hospital. If no danger sign develops - discuss with local health provides and decide on future management;

Relapse (after 4 weeks): Edema reappears or there is no weight gain in two consecutive visits or the child develops danger signs. The child should be referred to hospital;

Recovered: The child on a follow-up for a minimum period of 12 weeks is free of edema for at least 2 weeks, achieves mid upper arm circumference of 11 cm or more, is gaining weight regularly, is free of infection, and immunized for age.

Transferred to health facility: Non responders and relapsed;

Defaulter: Not traceable for at least 2 visits (take the help of *panchayat*, and local leaders to trace them); and

Death.

Epilogue

Home-based care for a substantial proportion of children with SAMN is an unavoidable alternative and recent experience has shown that it could be acceptable, effective and economical. The Workshop deliberations suggest a need to streamline the home-based management by strengthening community-

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based diagnosis, categorization, treatment, follow-up and timely referral of these children in order to reduce morbidity and mortality. These measures need to be integrated into the existing health set-up with coordination at all levels of health functionaries. There is an urgent need to test these recommendations in pilot operational trials within the existing health delivery systems.

Appendix-I

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