

TRAINING COURSE ON THE MANAGEMENT OF SEVERE MALNUTRITION

Banjul, The Gambia – 25 June – 5 July 2002

1. Introduction

Data from Southern, Western and Eastern Africa indicate that typically 30-50% of severely malnourished children die during hospital treatment. A high proportion of these deaths are considered preventable and result from mismanagement. Studies have documented detrimental practices in all African regions, and experience in rural South Africa has shown that when hospital staff receive in-service training based on the WHO treatment guidelines, the quality of care and child survival improve. Even where resources are limited, case-fatality rates have been halved following in-service training and support. In countries in Africa where chronic emergency persists, food security is worsening, severe malnutrition is increasingly a cause for hospital admission. Because of the current high case fatality rate, severe malnutrition accounts for the majority of paediatric deaths in many emergency settings and in hospitals.

In the short-term, there is an urgent need for in-service training of medical and nursing staff in order to reduce/prevent mortality and enhance recovery in severely malnourished children in targeted African countries. WHO in collaboration with London School of Hygiene and Tropical Medicine, with a contract of ACT international have developed the training modules to supplement the WHO manual on management of severe malnutrition: a manual for Physicians and other senior health workers. The 3 – day facilitator's orientation followed by 6-day participants' training course has been designed aiming to provide the knowledge and skills needed for correct inpatient treatment.

The Department of Nutrition for Health and Development (NHD) Geneva in collaboration with Gambia - based Medical Research Council (MRC), National Nutrition Agency, WHO Gambia office and African Regional Office (AFRO) organised a training workshop in selected Anglophone West African countries where malnutrition related mortality were high. The course content and the structure is given in the next page.

In an informal opening session speaking on behalf of WHO representative in the Gambia, Dr Joseph A Kamara and Dr Sultana Khanum from Geneva, Department of Nutrition for Health and Development reiterated that malnutrition remained one of the most frequent causes of morbidity and mortality among children in the developing world. WHO guidelines on management of severe malnutrition have proven evidence that with appropriate management, the unacceptable high mortality among children can be reduced to less than 5%. Dr Khanum urged the participants to take home the knowledge and skills and put into practice in the hospitals and other nutrition rehabilitation settings of their countries and also include the management of severe malnutrition in their undergraduate medical curriculum and post graduate paediatric training. Dr Kamara welcomed the sub-regional training workshop participants and assured them that the WHO country office will continue to collaborate with the state department of health, department of education, Medical Research Council (MRC), National Nutrition Agency, and world food programme, in addressing the problem of severe malnutrition. Dr Steve Allen of MRC assured assistance in continuing support to assist the countries in dissemination and follow –up of the activities.

1.1 Course structure

Location of course: *Royal Victoria Hospital, Banjul, Gambia*

Facilitator Training:

Dates of Facilitator training: *25-28 June 2002*
Number of full days: *4*
Total number of hours worked in course: *Twenty seven*
(excluding lunch hour)
Number of participants: *4*
(plus training for one clinical instructor who attended most of the
facilitator's course)

Course:

Dates of course: *1- 5 July 2002*
Number of full days: *5*
Total number of hours worked in course *thirty-nine*
excluding lunch hour)
Number of participants *twenty one(21)*

Clinical Sessions

Number of clinical sessions conducted *Five sessions per group*
Number of hours/group devoted to clinical sessions: *Four plus half*
an hour touring wards

Modules completed

Introduction: *All completed*
Principles of Care: *All completed*
Initial Management: *All completed*
Feeding: *All completed*
Daily Care: *All completed*
Monitoring and Problem Solving: *All completed*
Involving Mothers in Care: *All completed*

Manual

Did each participant receive a copy of the course and manual to take home?
Yes.

Number of facilitators serving at course: 4+ 2 international facilitators total= 6

Ratio of facilitators to participants: 1 to 3.5

Programme (Annex 1) and clinical sessions are given in Annex 1A and 1B, pictures in 1C, participants' list in Annex 2 and pre-training hospital inventory is given in Annex 3

2. Participants impression of the training workshop

A total of 20 participants attended the course, including 6 overseas delegates from Ghana, Liberia and Sierra Leone.

The participants consisted of 4 physicians, 14 nurses and 2 nutritionists (Annex 2)

2.1 General comments about the course

Generally the time spent on theory learning was felt to be sufficient. However, a substantial number of participants felt they would have benefited from more extended practical sessions to reinforce principals. It should be noted that although the video sessions were found to be the least useful (see Table 1), half the participants answering felt the time spent on them was too short. This suggests that the participants appreciated the format of learning using videos, but felt the videos themselves could be improved.

- The duration of the entire course was found to be too short by many participants. The one participant that found the course too long referred to the length of days as being 'physically and mentally fatiguing' and believed that an extended course with shorter days would be better.
- Overall, participants believed the course was successful in its aim. It gave new insight into the caring and monitoring of severely malnourished children and participants commented that they felt able to pass this new knowledge on to colleagues.
- The information given was found to be concise and the manuals well structured. The supplied literature was also felt to be beneficial in passing on information to other health care workers.
- Participants appreciated the expertise of the facilitators and found their teaching to be excellent. The interactive learning style, with an emphasis on small groups and individual feedback from facilitators was thought to be very helpful.
- The international aspect of the course was welcomed as it allowed participants to gain knowledge about how severely malnourished children are treated elsewhere.
- The main area for improvement in the course was seen to be time-scale. The number of days was thought to be too short for the amount of material covered, leaving little time to practice skills. The day length was also felt to be too long, with facilitators and participants reporting that they were exhausted after the third day.
- Participants also felt that a basic "starter pack" could be given to each participating institution, it should include: Rollameter, scales (infant and kitchen), tin of CMV, measuring containers, master copies of all the forms and charts and the WHO teaching video to allow them in initial implementation and also to help re-educate both fellow health care workers and the general public.

- All participants hoped education in the treatment of severely malnourished children would continue and several people expressed a wish to repeat the course in their own and in other countries
- Suggested additions to the course included;
 - A section on the diagnosis and treatment of diseases such as malaria in severely malnourished children.
 - A follow-up monitoring chart
 - A section on care at home involving both parents

2.2 Specific comments on the course modules and contents

a) Evaluation of Course Content

The following table shows the participants views on the different sections of the course:

Table 1.

	Very Useful	Useful	Somewhat Useful	Useless	No Answer
Principles of Care	16	3			1
Initial Management	20				
Feeding	17	2			1
Daily Care	16	4			
Monitoring and Problem Solving	16	4			
Involving Mothers in care	14	6			
Video: Transformations	10	8	2		
Video: Emergency Treatment	16	4			
Video: Teaching about feeding	13	6	1		
Video: Mental Development	9	8	1		2
Photograph examples and exercises	14	5	1		
Clinical sessions	16	4			

All parts of the course were found to be useful, however, the video sections were found to be least by some of them.

b) Comments on Difficulties of Individual Modules

This table shows the results of the question
‘Which module was most difficult for you and why?’

Table 2.

Title	Number of people	Reason
Initial Management	1	
Feeding	1	Very detailed module
Daily care	1	Very detailed module
Monitoring and problem solving	7	In all cases the CCP charts were found to be unfamiliar and therefore difficult. The length of time spent on the module was felt to be inadequate for thorough understanding

A number of facilitators made the comment that poor English skills resulted in some participants finding the detailed modules more difficult.

c) Comments on Course Schedule

Table 3.

	Time too short	Time adequate	Time too long	No Answer
Written exercises followed by talks	1	10	4	5
Photo exercises		19		1
Videos	8	8		2
Role plays	3	15		2
Group discussions	3	14	1	2
Oral drills	3	15	1	1
Clinical sessions	9	9	1	1
Entire course	9	9	1	1

3. Reflections from Gambia WHO Training (July 2002): comments from course leaders and suggested next step

Competence

By the end of the training, participants seemed reasonably confident and competent about the principles of treatment and about setting up the Critical Care Pathway (CCP), completing the various CCP forms, and taking appropriate decisions about treatment.

Action plans

Action plans for implementation were disappointing but not discouraging. We need to give more thought about facilitating and supporting implementation. A major concern is that if implementation is delayed, participants will forget what they learned and the task of implementation could become too daunting. Also participants are likely to get involved quickly in other workshops and other competing demands.

Planned actions were elicited by Steve; he asked each of the Gambian hospital teams and the Ghana, Liberia and Sierra Leone country teams to decide on 2 actions they would implement the following week based on what they had learned, and to identify 1 obstacle to implementation.

The first action all opted for was to report back either to their Ministry of Health, chief executive, or their colleagues. The second action varied, but only in two hospitals were the actions concerned with implementing something they had learned (Farafenni planned to start F75 and Sibanor planned to change their monitoring forms). Constraints identified were shortage of staff, milk powder, CMV, scales, equipment. No-one identified life-saving actions that could be implemented for which there were no constraints e.g. not giving IV fluids except in shock, slower rehydration + monitoring, antibiotics according to schedule, keeping children warm.

Possibilities to assist implementation in future

1. When selecting participants, make it explicit that there is an expectation that they will implement the guidelines immediately after the course, and be willing to help train national and/or local teams.
2. Timetable action plans as part of the training. Allow sufficient time.
3. Prepare a draft action plan to guide participants. This could highlight actions easiest to implement but would make a difference. For those more difficult to implement (e.g. electrolytes and minerals) we could provide these in a starter pack and/or suggest some alternative actions.
4. Provide starter pack (CMV, dietary scale or scoops, 50ml graduated medicine cup, litre jug, whisk, calculator, set of monitoring forms, instructions to carpenter for making length board + non-stretchable tape or rollametre, low reading thermometer). Consider sending out the WHO list of supplies/equipment before the course begins so we can see what is needed and have a strategy to fill these gaps.
5. Pre-arrange follow-up visits so participants know whom to expect and when.

Country focal point

Saye (Liberia) suggested that each country have a focal point. This was not discussed but it seemed a good idea and needs to be considered by the Regional office (WPRO)

Plans/suggestions for West Africa

1. *MRC (Fajara) ward to become a centre where best practice will be seen and training courses for West Africa held.*

2. *Recruit experienced person to be based at RVH but on LSHTM staff and attached to MRC (Fajara) and NaNA who would:*

- help implementation at RVH and follow-up Basse, Bansang, Sibamor and Farafenni
- follow up Ghana, Liberia and Sierra Leone
- help MRC and NaNA grow into their training role
- train NaNA in assessment and monitoring
- advocate adopting the treatment guidelines as national policy and establish standing orders in hospitals
- help set up national trainings
- help in needs assessment re medical/nursing curricula
- document the implementation process to identify difficulties and lessons learned and undertake other relevant operational research.

Ideally this person would be a paediatrician from the region. French-speaking would be an added bonus.

Longer term

- Consider how to give recognition to or accredit a) participants' training b) hospitals that implement correctly. One possible option re (b) might be to accredit the hospital as a place suitable for training medical students in treatment of severe MN. Perhaps this could be done in conjunction with the West African College of Physicians (Paediatric Group). Accreditation along the lines of BFHI is likely to be too demanding – would need to identify criteria and then appoint teams of assessors.
- Devise a distance-based (accredited?) course for doctors drawing extensively from the modules and exercises. Could incorporate photos of clinical signs, footage of making feeds, footage of 'spot the mistake' etc. Steve's new 'home' in Oxford is expert in distance learning.

Ann has agreed to:

- Devise F100 from CSB for Sibamor
- Send video to Sierra Leone
- Invest some time to see:-
 - if can devise a combination of standardised scoops that could go in the starter pack
 - prepare draft action plan for discussion.

Acknowledgements:

The WHO Department of Nutrition for Health and Development (NHD) and the WHO Country Office in The Gambia thankfully acknowledge the valuable contribution to the preparation of the training course by Dr Stephen Allen (previously MRC) and Professor Ann Ashworth-Hill (LSHTM). WHO would also like to thank Ms Sarah Prentice for her assistance in the preparation of this report.

WHO expresses sincere gratitude to Professor Andrew Prentice (MRC) for initiating the arrangements of the training workshop through MRC. Also acknowledged are the excellent arrangements made by the Director of the Royal Victoria Hospital and the staff - some times in difficult circumstances.

WHO also expresses its appreciation to all facilitators and participants for making the training a reality.

Annex 1

WHO TRAINING COURSE ON THE MANAGEMENT OF SEVERE MALNUTRITION

Royal Victoria Hospital, Banjul, The Gambia

July 1st - 5th, 2002

Programme

Day/Date	Time	Event
Saturday June 29 th	09.30	Participants arrive from Nigeria and Sierra Leone (Belle View); to Safari Garden Hotel. Read Module 1: Introduction and provide WHO manual
Sunday June 30 th	09.00 7pm	Participants arrive from Liberia (Ghana Airways); to Safari Garden Read Module 1: Introduction and provide WHO manual Welcome Reception; Buffet at Safari Garden Hotel. Invitees: Participants and all course support staff Introductions and name badges
Monday July 1 st Day 1	07.45 08.00 09.30 – 11.00 11.00 12.30 13.30 - 17.00	Bus collects from Safari Garden Break into Facilitator groups and review Module 1: Introduction Start Module 2: Principles of Care Opening ceremony: Conference Room; Royal Victoria Hospital. Chaired by Dr. Allen (MRC). Welcome addresses by: Dr. Khanum, Dr. Mwanzia, Mrs. Isatou Semega-Janneh and Dr. Esangbedo. Invitees: Director of Medical Services; Representative UNICEF; PNO; Dr. Otilio, Acting Head of Paediatric Department, CNO Royal Victoria Hospital; Sr. Pam N' Jie, Matron MRC; participants and all course support staff Module 2: Principles of Care Lunch Module 2: Principles of Care; Video: Transformations Clinical session: Tour of the wards and clinical signs
Tuesday July 2 nd Day 2	07.45 08.00 12.30 13.30-17.00	Bus collects from Safari Garden Module 3: Initial Management Lunch Module 3: Initial Management Video: Emergency Care and Clinical session: Initial Management

Annex 1 (cont'd)

WHO TRAINING COURSE ON THE MANAGEMENT OF SEVERE MALNUTRITION

Programme

Wednesday July 3 rd Day 3	08.00 12.30 13.30 – 16.00	Module 4: Feeding Clinical session: Feeding (2 groups) Lunch Individual work on feeding Clinical session: Feeding (2 groups)
Thursday July 4 th Day 4	08.00 12.30 13.30 – 17.00	Module 5: Daily Care Video and Observation session: Teaching mothers about home feeding (2 groups) Lunch Module 6: Monitoring and Problem Solving Video and Observation session: Teaching mothers about home feeding (1 group)
Friday July 5 th Day 5	07.45 08.00 12.00	Bus collects from Safari Garden Module 7: Involving Mothers in Care Video and Observation session: Malnutrition and mental development Closing Ceremony; Conference Room, Royal Victoria Hospital. Closing remarks by Dr. Khanum; WHO, Geneva. Presentation of certificates by Dr. Mwanzia, Mrs. Isatou Semega-Janneh and Dr. Esangbedo. Invitees: Participants and all course support staff Course Photograph
Saturday July 6 th		Participants leave for Sierra Leone and Nigeria

Annex 1 A:

Clinical Sessions Schedule

Clinical Session	Group A	Group B	Group C
Day 1 Tour of Ward Clinical Signs 1 hour Video: Transformation	15:30-16:30 16:30	13:30-14:30 14:30	14:30-15:30 15:30
Day 2 Initial Management 1 hour Video: Emergency Care	13:30-14:30 14:30	14:30-15:30 15:30	15:30-16:30 16:30
Day 3 Preparation of Resomal, F-75, F-100 Feeding 2 hours	14:30-16:30 (15:00 feed)	11:30-13:30 (12:00 feed)	8:30-10:30 (9:00 feed)
Day 4 Video:Teaching mothers about homefeeding Observation of teaching session 0.5 hour	11:00 11:15-11:45	11:45 12:00-12:30	13:30 13:45-14:15
Day 5 Video: Malnutrition and mental development Observation of play session 0.5 hour	11:00 11:15-11:45	10:30 10:45-11:15	10:00 10:15-10:45

Annex 1 B:

**Clinical Sessions Schedule
Ward Schedule**

TIME	2-hourly feed	3-hourly feed	4-hourly feed	Other Ward Activities/Comments Anthropometry: measurement of height, weight
8:00 AM				Shift change / cleaning
9:00	Feed	Feed	Feed	Review 24-hour intake and ward feed charts
10:00				Milk preparation
11:00	Feed			Ward round
12:00		Feed		Observation, medication (2-4 hourly)
1:00 PM	Feed		Feed	
2:00				Shift change , medication (3 hourly)
3:00	Feed	Feed		
4:00				Play / teaching?
5:00	Feed		Feed	
6:00		Feed		Observation, medication (4 hourly)
7:00	Feed			
8:00				Shift change
9:00	Feed	Feed	Feed	
10:00				Milk preparation, medication (3 hourly)
11:00	Feed			
12:00AM		Feed		Observation, medication (2-4 hourly)
1:00	Feed		Feed	
2:00				
3:00	Feed	Feed		
4:00				
5:00	Feed		Feed	
6:00		Feed		Observation, medication (2-3-4 hourly)
7:00				Weight, Bath

Annex 2

List of Participants

Course Leaders

Name	Best Mailing Address	Telephone Number	Fax Number	Email Address	Affiliated Hospital
Dr. Mohammed Alhaji	Dept. of Paediatrics, U.M.T.H.D.M.B 1414 Maiduguri, Borno State, Nigeria	234 76 233246 or 234 76 231300 (office)	234 76 232375	m_alhaji@hotmail.com	Univ. of Maiduguri, Teaching Hospital, Borno State, Nigeria
Dr. Stephen Allen	20, Liddon Road, Chalgrove, Oxford, UK OX44 7YH	+44 (0)1865 2200558	+44 (0)1865 222901	Sallen gm@yahoo.co.uk Khanums@who.int	John Radcliffe Hospital, Headington, Oxford, UK OX3 9DU
Dr Sultana Khanum	WHO/Geneva,switzerland 1211-CH	+4122 791 2624	+4122 791 4156		
Prof. Ann Ashworth	Public Health Nutrition Unit, London School of Hygiene & Tropical Medicine, Keppel Street, London, WC1E 7HT	+44 (0)207 2994700	+44 (0)207 2994666	a.hill@lshtm.ac.uk	
Dr. Tinh-Nhan Luong	519, Rue De Gaspé App 413, Montreal, Quebec, Canada H3E 1E9	514 761 1782		tnluong3@hotmail.com	1) MRC, Fajara 2) Maisonneuve-Rosemont Hospital, Montreal
Dr. Babafemi Oshin	c/o MRC Labs (Keneba Field Station), P.O. Box 273 Banjul, The Gambia	+220 938158 or +220 541021	+220 541022	baoshin@yahoo.com or boshin@mrc.gm	MRC Field Station, Keneba, Kiang West, LRD The Gambia
Dr. Elizabeth Poskitt	11, Hedge End, Woodstock, OXON OX20 1NP	+44 (0)1993 811590	+44 (0)1993 811 590	mopsa@emep.freeseve. co.uk	London School of Hygiene and Tropical Medicine, 49-51 Bedford Square, London, UK WC1B 3DP
Mrs Horeja Saine		+220 930966			Royal Victoria Hospital, Banjul, Gambia

Name	Best Mailing Address	Telephone Number	Fax Number	Email Address	Affiliated Hospital
Mr. Momodou Sanneh	PMB 54, General Post Office, Banjul, The Gambia	+220 901739		Momodou_sanneh@hotmail.com	MRC, Fajara, The Gambia
Dr. Chin Saw Sian	c/o VSO, P.O. Box 677, Banjul, The Gambia	+220 790810		sianchin@doctors.org.uk	Royal Victoria Hospital, Banjul, The Gambia

Participants

Name	Best Mailing Address	Telephone Number	Fax Number	Email address	Affiliated Hospital
Dr. Sampson Antwi	Komfo Anokye Teaching Hospital, Box 1934, Kumasi, Ghana	+233 27 888658 or + 233 51 34809 (home)		mala@ghana.com	Komfo Anokye Teaching Hospital, Kumasi, Ghana
Dr Donald Bash-Taqi	Children's Hospital, Fourah Bay Road, Freetown, Sierra Leone	+232 76 603256 or +232 22 231287		donbashtaqi@yahoo.com	Children's Hospital, Fourah Bay Road, Freetown, Sierra Leone
Mr Gibril Bass	MRC Laboratories, Fajara, P.O. Box 273, Banjul, The Gambia	+220 927708 or +220 495442/3/4			MRC, Atlantic Road, Fajara, The Gambia
Dr Saye Baawo	St. Joseph's Catholic Hospital P.O. Box 512, Monrovia,Liberia	+231 226207	+231 226461	sdbaawo@hotmail.com	St. Joseph's Catholic Hospital, P.O. Box 512, Monrovia, Liberia

Name	Best Mailing Address	Telephone Number	Fax Number	Email address	Affiliated Hospital
Mr Ensa Camara	Bansang Hospital, Head of Peadiatric Unit, Bansang, C.R.D, The Gambia	+220 796254			Bansang Hospital, Head of Peadiatric Unit, Bansang, C.R.D, The Gambia
Mrs Fatou Camara	c/o Momodou Trawally, P.O. Box 969, Serekunda, The Gambia	+220 392549 or + 220 910482		pammtouray@ yahoo.com	Essau Health Centre, North Bank West, The Gambia
Mr Bakary Darboe	c/o P.O. Box 1732, Banjul, The Gambia	+220 668233 or +220 928065		bbdabo@yahoo.com	Basse Major Health Centre, Upper River Division, Basse, The Gambia
Dr. Sally Hall	WEC International, P.O. Box 86, Banjul, The Gambia	+220 488040		sibanorprivate@ hotmail.com	Sibanor Health Centre, Sibanor, The Gambia
Mrs Pauline Jallah	Family Health Division, Ministry of Health and Social Welfare, P.O. Box 10-9009, 1000 Honroura, 10 Liberia			paulineknj2002@ yahoo.com	
Mr Bakary Jallow	National Nutrition Agency, 80 Oali Boulevard, PMB 162, Banjul, Gambia The Gambia	+220 202399 or +220 913326	+220 202407	bjallow65@hotmail.com or nana@ganet.gm	

Name	Best Mailing Address	Telephone Number	Fax Number	Email address	Affiliated Hospital
Mrs Istaou Jammeh		+220 931500			Royal Victoria Hospital, Marina Parade Banjul, The Gambia
Mr Ensa Jarju	c/o P.O. Box 3494, Serekunde, The Gambia	+220 228223 ext.374 or +220 376727			Royal Victoria Hospital, Independence Drive, Banjul, The Gambia
Mr Momodou Jarju	MRC Laboratories, Fajara, P.O. Box 273, The Gambia	+220 497114 or +220 375421			MRC Ward, Fajara, The Gambia
Mrs Fatou Jeng	Private Mail Bag 497, Serekunde Post Office, Banjul, The Gambia	+220 911330/ 668131/ 374859			Pneumococcal Vaccine Trial Basse Health Centre, MRC, Basse, The Gambia
Mrs Isatou Marenah	MRC P.O. Box 273, Banjul, The Gambia	+220 495880 or +220 497114	+220 495919	imarenah@yahoo.com	MRC, Fajara, The Gambia
Mrs Ajaratou Fatou Njie	Bansang Hospital, CRD The Gambia	+220 918022 or +220 674097		ajif2@yahoo.com	Bansang Hospital, CRD, The Gambia
Mrs Haddy Sanyang	AFPRC General Hospital, Farafenni, NBE, The Gambia	+220 735502	+220 735118		Paediatric Unit, AFPRC General Hospital, Farafenni NBE, The Gambia

Name	Best Mailing Address	Telephone Number	Fax Number	Email address	Affiliated Hospital
Ms Sylvetta Scott	Room E403, 4 th Floor Youyi Building, Brookfields, Sierra Leone	+232 240191 or +232 224715		sylscott@sierratel.sl	Children's Hospital, Fourah Bay Road, Freetown, Sierra Leone
Mrs Philomena Sencherey	P.O. Box R525, Kumasi, Ghana	+233 208111491	+233 5132652		Komfo Amokye Teaching Hospital, Kumasi, Ashanti Region, Ghana
Mr Thomas Sen ghore	No. 33B Allen Street, Banjul, The Gambia	+220 785802 or +220 735502		tsenghore@yahoo.co.uk	AFPRC Hospital, Farafenni, NBD, The Gambia
Mr Sidu- Muhammed Sibi	C/o Sibanor Health Centre, P.O. Box 86, Banjul, The Gambia	+220 488037 or +220 488036			Sibanor Health centre, Sibanor Village, Fonie Bintang Karanai, Western Division, The Gambia

Annex 3

TRAINING COURSE ON THE MANAGEMENT OF SEVERE MALNUTRITION IN HOSPITAL SETTINGS

Pre-training inventory Questionnaire

Hospital: 8 hospitals (Ghana, Gambia (3), Sierra Leone, Nigeria, Liberia)

Responders: 8 participants

	Number of Hospitals: Yes	Number of Hospitals: No	Percent or numbers as applicable
1. Special place for severely malnourished (MN) children:			
a) Separate malnutrition ward	2	6	
b) Special room		8	
c) Beds in paediatric department	4	4	
d) Other:(specify) <i>in adult ward</i>	2	-	
2. Referral of MN children to hospital (%):			
a) Referred from out patient/emergency clinic (%)	8		95%
b) Referred from MCH clinic (%)	-	-	2%
c) Referred from other public health facility (%)	-	-	2%
d) Coming directly to hospital (%)	-	-	-
e) Other: specify (%) <i>charitable/private hospitals</i>	-	-	1%
3. Admission criteria:			
a) Weight-for-height	5	3	
b) Weight-for-age	3	5	
c) Presence of oedema	7	1	
d) Other: (specify) : <i>visible wasting,</i>	7	-	
4. Maximum MN children managed at the same time:			
Constraints: shortage of beds, staff	8	-	100%
5. Doctors available at MN ward:			
a) Day time	8	-	2-3
b) Night time	7	1	1
6. Nurses available at MN ward:			
c) Day time	8		2-3
d) Night time	7	1	2
7. Current mortality:			
a) Malnourished (% or number)	4 *	4 INA	10-50%*
b) Normal nourished (% or number)	4	4 INA	5-10%
8. Current duration of recovery (days):			
9. Discharge criteria:			
a) > 80% weight-for-height	1	7	
b) Improvement in clinical conditions	7	-	
10. Equipment facilities/supplies:			
a) Normal thermometer	8	-	
b) Low-reading thermometer (25 degree C)	-	8	

INA = Information not available; Ghana: 40%; Sierra Leone: >50%; Ghana: RVH: 10-20%, Fajara: 25%;

	Number of Hospitals: Yes	Number of Hospitals: No	Percent or numbers as applicable
c) Functional child weighing scale	7	1	
d) Board for measuring length	5	3	
e) Board (stadiometer) for measuring standard height:	3	5	
f) Hemoglobinometer	7	1	
g) Paediatric nasogastric tubes	7	1	
h) Supplies for IV (scalp vein, poles, tubing, etc.)	8	-	
i) Supplies for blood transfusion	8	-	
j) Syringes (50 ml for feeds)	5	3	
k) Syringes (2 ml for drugs)	8	-	
l) Syringes (5 ml for drawing blood)	7	1	
m) Syringes (10 ml)	7	1	
n) Sterile needles	8	-	
11. Cooking facilities:			
a) Cooking space (kitchen)	8	-	
b) Refrigerator	8	-	
c) Stove or any other cooking method	6	2	
d) Dietary scales with 5g precision	1	7	
e) Electric blender	1	7	
f) Manual whisks	1	7	
g) Large containers/spoons for mixing/cooking	5	3	
h) Feeding cups, saucers, spoons, etc	5	3	
i) Measuring cylinders for measuring ingredients	4	4	
j) Jugs (1 liter)	5	3	
12. Hygiene facilities:			
a) Source of running of potable water	8	-	
b) Toilet and hand washing facilities	8	-	
c) Wash basin for bathing children	6	2	
d) Place for washing bedding and clothing	8	-	
e) Any method for trash disposal	8	-	
f) Soap for hand washing	8	-	
13. Pharmaceutical equipment/supplies			
a) Pharmaceutical scales for measuring chemicals	1	7	
b) WHO ORS	5	3	
c) Commercial ReSoMal	-	8	
d) Mineral/Vitamin Mix without iron (CMV)	-	8	
e) Glucose or sucrose powder	7	1	
f) Vaccines (BCG, OPV, DPT, Measles)	8		
Do you have iron tablets? <i>Fefol</i>	8		
h) Do you have iron syrup? <i>ferrous fumarate, sytron</i>	4	4	
i) Folic acid	8	-	
j) High potency Vitamin A (100,000/200,000 IU)	7	1	
k) Sterile water for diluting: If no, how do you sterilize water	8		

	Number of Hospitals: Yes	Number of Hospitals: No	Percent or number as applicable
l) IV fluids			
i) Half-strength Darrow's sol with 5% gluc.	4	4	
ii) Ringer's lactate sol. With 5% gluc.	5	3	
iii) Half-normal (0,45%) saline with 5% gluc.	2	6	
m) Electrolytes and minerals			
i) Potassium chloride solution	3	5	
ii) Magnesium chloride power	-	8	
iii) Zinc acetate solution	-	8	
n) Supplies for blood transfusion			
i) Blood packs	7	1	
ii) Bottles	5	3	
iii) Syringes and needles	8	-	
14. Drugs available:			
a) Amoxicillin	7	1	
b) Ampicillin	8	-	
c) Benzylpenicillin	8	-	
d) Chloramphenicol	8	-	
e) Cotrimoxazole	8	-	
f) Gentamicin	8	-	
g) Metronidazole	8	-	
h) Nalidixic acid	6	2	
i) Mebendazole or albendazole	8		
j) Tetracycline or chloramphenicol eye drops	8		
k) Atropin eye drops	3	5	
l) Gentian violet for skin	8	-	
m) Potassium permanganate	4	4	
n) Nystatin ointment drops (for Candidiasis)	7	1	
o) Parafine gauze (tulle gras)	6	2	
15. Access to the following laboratory resources:			
a) TB tests (x-rays, culture of sputum, Mantoux)	6 ¹	2	
b) Urinalysis	8	-	
c) Stool culture	7	1	
d) Blood culture	7	1	
e) Cerebrospinal fluid culture	7	1	
16. Do you have all the necessary equipment/supplies /drugs etc. for case management of severe MN?, list			
items mostly available: antibiotics, syringes, nasal catheters etc.			
Items not available: F 75, F100, CMV, ReSoMal, potassium, magnesium, zinc, low reading thermometer, board for measuring length/ height, kitchen scale, manual or electric blender			
Enough space for special care, and staff for patient care, particularly at night- typically one doctor and 2 nurses for all patients including the severely malnourished.			

¹ mantoux test not available