

Inter-country Training Workshop on Management of Severe Malnutrition
11-22 December, 2002,
ICDDR,B Hospital, Dhaka, Bangladesh
Dr Sultana Khanum, NHD

Introduction

Severe malnutrition is one of the most common causes of morbidity and mortality among children under the age of 5 years worldwide. Many severely malnourished children die at home without care, but even when hospital care is provided, case fatality rates remain high. In South-East Asia mortality rates range from 5-40%. Substantial reduction in mortality is possible and has been achieved where basic principles of management of severe malnutrition using WHO guidelines have been followed (for example in ICDDR,B from 17% to less than 5% in Myanmar from 20% to 8%). Field training course used for the training workshop is the practical application of the WHO publication Management of severe malnutrition: a manual for physicians and other senior health workers. This training course on hospital-based care of severely malnourished children responds to the urgent need to reduce paediatric deaths related to severe malnutrition in many developing countries

The course contents are : 3 instructors guides (Course director, facilitators, clinical instructor) and seven modules:

- *Introduction*
- *Principles of care*
- *Initial management*
- *Feeding*
- *Daily care*
- *Monitoring and problem solving*
- *Involving mothers in care*

These modules are supported with a photo booklet, video, and support materials (laminated reference cards for field use, course exercises and answer sheets, examples of forms for record keeping)

Course methods

This course used a variety of methods of instruction, including reading, written exercises, discussions role plays, video and demonstrations and practice in a real severe malnutrition ward

Purpose of the training course:

The course is designed for senior nurses and doctors in hospitals that have or plan to have to have severe malnutrition wards for children in order to improve management scheme for severely malnourished.

Specific objectives:

- To improve skill and knowledge specifically needed for management of severely malnourished children in hospitals in order to reduce mortality and enhance recovery
- It is expected that participants will return to their hospitals and begin to implement practices learnt in the course and also organize national training for dissemination of best practices

Place and participants

The inter-country workshop on management of severe childhood malnutrition was held in ICDDR,B Dhaka from 11 to 22 December 2002. The workshop was organized and sponsored by the Training and Education Unit of ICDDR,B and the World Health Organization South-East Asia Regional Office.

The facilitators' training was for 3.5 working days (Annex 1) with. The participants' training was for 6 working days (annex 2a and 2b). Working hours were from 9 am to 5 PM. All participants completed the modules.

There were 21 participants (annex 3) from 6 countries including Bangladesh, Bhutan, Nepal, India, Indonesia, and Myanmar. Of the 21 participants, six were trained as facilitators for dissemination of training in their own countries.

Pre-training hospital inventory form:

The form was filled by 11 participants from 11 hospitals (see consolidated response in annex 4) which show that mortality among severely malnourished children ranged from 5-20% and in non-malnourished 2-5%. Although most hospitals are well equipped with basic supplies for general paediatric patients, they lacked most basic equipment and supplies for managing severe malnutrition, for example- weighing scales, length/height boards, kitchen scales, low reading thermometer, 50 ml Syringes for nasogastric feeding, therapeutic milk (F75, F100) vitamin mineral mix (CMV), appropriate blenders for mixing food ingredients, mixing bowls, measuring cups room heaters and shortage of staff and space. A basic equipment list with cost in US dollars is given in Annex 4

Course review

At the end of the course the participants were asked to comment on the course contents and their general impression tables 1 and 2 show specific comments on the modules and course methods. In addition some general comments are also noted . It appears that there are scope for appropriate modification in individual country situations.

Table 1
EVALUATION OF TRAINING COURSE BY PARTICIPANTS

	Very useful	Useful	Somewhat useful	Useless	No answer
Principles of Care	15 (71.4)	5 (23.8)	1 (4.8)		
Initial Management	17 (81)	4 (19)			
Feeding	15 (71.4)	6 (28.6)			
Daily Care	13 (61.9)	8 (38.1)			
Monitoring and Problem Solving	12 (57.1)	9 (42.9)			
Involving Mothers in care	9 (42.9)	12 (57.1)			
Video: Transformations	11 (52.4)	8 (38.1)	2 (9.5)		
Video: Emergency Treatment	13 (61.9)	6 (28.6)	2 (9.5)		
Video: Teaching about feeding	12 (57.1)	7 (33.3)	1 (4.8)		1 (4.8)
Video: Mental Development	16 (76.2)	5 (23.8)			
Photograph examples and	9 (42.9)	11(52.4)	1 (4.8)		
Clinical sessions	11 (52.4)	10 (47.6)			

Table 2
Course methods

	Time too	Time adequate	Time too long	No answer
Written exercises followed by discussions with a Facilitator	2 (9.5)	12 (57.1)		7 (33.3)
Photo exercises	1 (4.8)	18 (85.7)		2 (9.5)
Videos	2 (9.5)	19 (90.5)		
Role plays	1 (4.8)	20 (95.2)		
Group discussions	1 (4.8)	20 (95.2)		
Oral drills	2 (9.5)	19 (90.5)		
Clinical sessions	13 (61.9)	6 (28.6)	2 (9.5)	
Entire course	5 (23.8)	15 (71.4)	1 (4.8)	

General comments

Most difficult modules

Initial management, monitoring and problem solving, and feeding were the most difficult modules for the participants. The initial management module was difficult because the module teaching was different from what the participants practice. Most participants felt that monitoring and problem solving was difficult because it contained too much information that had to be assimilated over a very short period. Feeding module involved a lot of calculations which are difficult for some participants.

Good things about the course

Well designed modules; course easy to follow and well organized; lively and friendly atmosphere; good training materials; good training environment; appropriate clinical and practical sessions; course was very informative; close interaction between participants and facilitators; self reading; role play; video sessions especially on mental development.

Limitations of the course

Time too little for so much of reading; little clinical exposure; clinical sessions need more improvement; photograph examples are difficult to locate in the photograph booklet; little or no time for discussion among participants; lunch served was not good.

Any skills for managing severe malnutrition to be added to the course

Overall clinical skills; insertion of nasogastric tube; kangaroo care method for keeping the child warm; use of 1% potassium permanganate solution in the dressing of open skin lesions; preparation of solid diets during catch up growth phase.

Comments for improvement of the course

Modules on feeding and involving mothers in care should be revised; clinical exposure should be increased; training workshops should be organized outside Dhaka; the videos should have more explanation; prevention of malnutrition should also be a part of the course; the course duration should be increased.

**Inter-Country Training Workshop on Management of Severe Malnutrition
Organized by WHO and ICDDR,B
Dhaka December, 2002**

SCHEDULE FOR FACILITATORS' TRAINING

FACILITATOR DAY 1 (Wednesday, December 11, 2002)		
	Activity	Schedule
1.	Opening session A. Introductions B. Administrative tasks C. Review of purpose of the course	9:00-9:30 a.m.
2.	Introduction to facilitator training A. Context of facilitator training B. Materials needed C. Objectives of facilitator training D. Teaching methods E. Schedule for facilitator training F. Introduction of <i>Facilitator Guide</i>	9:30-10:15 a.m.
	TEA	10:15-10:30 a.m.
3.	Module: <i>Introduction</i> A. Review and demonstration B. Facilitator techniques: Working with a Co-facilitator	10:30-10:45 a.m.
4.	Module: <i>Principles of Care</i> A. Facilitator techniques: Introducing a module B. Reading and work on module C. Facilitator techniques: Leading a discussion D. Reading and work on module E. Facilitator techniques: Adapting for nurses' groups F. Facilitator techniques: Individual feedback G. Reading and work on module, practice group discussion H. Facilitator techniques: Oral drills I. Reading and short answer exercises J. Facilitator techniques: Video activity K. Facilitator techniques: Summarizing a module	10:45-3:15 p.m.
	LUNCH	12:30-1:00 p.m.
	TEA	3:15-3:30 p.m.
5.	Module: <i>Initial Management</i> A. Reading and practice introducing module B. Facilitator techniques: Conducting a demonstration	3:30-4:30 p.m.
6.	Assignments for the next day: A. Read and do exercises in Initial Management module and part of Feeding module B. Read corresponding facilitator guidelines C. Prepare for assigned activities	4:30-5:00 p.m.

SCHEDULE FOR FACILITATORS' TRAINING

FACILITATOR DAY 2 (Thursday, December 12, 2002)	
<i>HARTAL (country wide general strike)</i>	
<ul style="list-style-type: none"> A. Read and do exercises in Initial Management module and Feeding module B. Read corresponding facilitator guidelines C. Prepare for assigned activities 	

FACILITATOR DAY 3 (Friday, December 13, 2002)		
	Activity	Schedule
1.	Continuation of Module: <i>Initial treatment</i> <ul style="list-style-type: none"> A. Practice of facilitator techniques B. Facilitator techniques: Coordinating role plays 	9:00-12:30 p.m.
2.	TEA	10:15-10:30 p.m.
	TOUR OF HOSPITAL	10:30-10:45 p.m.
	LUNCH and JUMMAH PRAYER	12:30-1:45 p.m.
3.	Module: <i>Feeding</i> <ul style="list-style-type: none"> A. Introduction and Exercise A, preparing F-75 and F-100 B. Facilitator techniques: While participants are working C. Reading/work through Exercise B; practice of facilitator techniques D. Reading/work through end of module; practice of facilitator techniques 	1:45-4:45 p.m.
	TEA	3:15-3:30 p.m.
4.	Assignments for the next day <ul style="list-style-type: none"> A. Read and do exercises in <i>Feeding and Daily Care</i> module B. Read corresponding facilitator guidelines C. Prepare for assigned activities 	4:45-5:00 p.m.

SCHEDULE FOR FACILITATORS' TRAINING

FACILITATOR DAY 4 (Saturday, December 14, 2002)		
	Activity	Schedule
1.	Continue module: <i>Feeding</i>	9:00-10:15 a.m.
	TEA	10:15-10:30 a.m.
2.	Clinical practice session	10:30-12:30 p.m.
	LUNCH	12:30-1:00 p.m.
2.	Module: <i>Daily Care</i> A. Introduction of module, discussion of questions B. Practice of facilitator techniques	1:00-3:00 p.m.
	TEA	3:00-3:15 p.m.
3.	Module: <i>Monitoring and problem solving</i> A. Introduction and work on the module B. Practice of facilitator techniques	3:15-4:30 p.m.
4.	Assignments for the next day A. Read and do exercises in <i>Monitoring and problem solving</i> and <i>Involving Mothers in Care</i> modules B. Read corresponding facilitator guidelines C. Prepare for assigned activities	4:30-5:00 p.m.

FACILITATOR DAY 5 (Sunday, December 15, 2002) Half day		
	Activity	Schedule
	Continue module: <i>Monitoring and problem solving</i>	9:00-11:00 a.m.
	TEA	11:00-11:15 a.m.
1.	Module: <i>Involving Mothers in Care</i> A. Introduction of module B. Practice of facilitator techniques C. Facilitator techniques: Review	11:15-12:30 p.m.
	LUNCH	12:30-1:00 p.m.
2.	Practical arrangements for the course Closing remarks to facilitators Plans for first day of course	1:00-2:00 p.m.

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SCHEDULE FOR PARTICIPANTS' TRAINING

Day	Group A	Group B	Group C
Day 1 17 Dec Tues	9-9:45 am Opening & introduction 9:45-10:15 am Module <i>Introduction</i> 10:15-10:30 am TEA 10:30-11 am Clinical session: Ward tour Module <i>Principles of care</i> ~ 4 h 12:30-1 pm LUNCH 1-1:15 pm: Video on Transformations 3:15-3:30 pm TEA Module <i>Initial Management</i> ~ 1 h	9-9:45 am Opening & introduction 9:45-10:15 am Module <i>Introduction</i> 10:15-10:30 am TEA Module <i>Principles of care</i> ~ 4 h 12:30-1 pm LUNCH 1-1:30 pm Clinical session: Ward tour 1:30-1:45 pm: Video on Transformations 3:15-3:30 pm TEA Module <i>Initial Management</i> ~ 1 h	9-9:45 am Opening & introduction 9:45-10:15 am Module <i>Introduction</i> 10:15-10:30 am TEA Module <i>Principles of care</i> ~ 4 h 12-12:30 pm Clinical session: Ward tour 12:30-1 pm LUNCH 1-1:15 pm: Video on Transformations 3:15-3:30 pm TEA Module <i>Initial Management</i> ~ 1 h
Day 2 18 Dec Wed	9 am- Module <i>Initial Management</i> ~ 6 h 10:15-10:30 am TEA 10:30-11:30 am Clinical session: Clinical signs 11:30-11:45 am Video on Emergency care 12:30-1 pm LUNCH 3:15-3:30 pm TEA	9 am- Module <i>Initial Management</i> ~ 6 h 10:15-10:30 am TEA 11:30-11:45 am Video on Emergency care 12:30-1 pm LUNCH 1-2 pm Clinical session: Clinical signs 3:15-3:30 pm TEA	9-10 am Clinical session: Clinical signs 10-10:15 am Video on Emergency care 10:15-10:30 am TEA Module <i>Initial Management</i> ~ 6 h 12:30-1 pm LUNCH 3:15-3:30 pm TEA
Day 3 19 Dec Thurs	9 am- Module <i>Feeding</i> ~ 6 h 10:15-10:30 am TEA 10:30-11:30 am Clinical session: Initial Management 12:30-1 pm LUNCH 3:15-3:30 pm TEA	9-10:15 am Clinical session: Initial Management 10:15-10:30 am TEA 10:30 am- Module <i>Feeding</i> ~ 6 h 12:30-1 pm LUNCH 3:15-3:30 pm TEA	9 am- Module <i>Feeding</i> ~ 6 h 10:15-10:30 am TEA 12:30-1 pm LUNCH 1-2 pm Clinical session: Initial Management 3:15-3:30 pm TEA
Day 4 20 Dec Fri	9-10 am Module <i>Feeding</i> 10:15-10:30 am TEA 10:30-1 pm Module <i>Daily Care</i> ~ 2.5 h Day ends at 1 pm	9-10 am Module <i>Feeding</i> 10:15-10:30 am TEA 10:30-1 pm Module <i>Daily Care</i> ~ 2.5 h Day ends at 1 pm	9-10 am Module <i>Feeding</i> 10:15-10:30 am TEA 10:30-1 pm Module <i>Daily Care</i> ~ 2.5 h Day ends at 1 pm
Day 5 21 Dec Sat	9 am- Module <i>Daily Care</i> ~ 1.5 h 10:15-10:30 am TEA 10:30-11:30 am Clinical session: Feeding 11:30 am- Module <i>Monitoring and problem solving</i> ~ 4 h 12:30-1 pm LUNCH 3:15-3:30 pm TEA	9-10 am Clinical session: Feeding 10:15-10:30 am TEA 10:30-12:30 pm Module <i>Daily Care</i> ~ 2 h 12:30-1 pm LUNCH 11:30 am- Module <i>Monitoring and problem solving</i> ~ 4 h 3:15-3:30 pm TEA	9 am- Module <i>Daily Care</i> ~ 1.5 h 10:15-10:30 am TEA 10:30 am- Module <i>Monitoring and problem solving</i> ~ 4 h 12:30-1 pm LUNCH 1-2 pm Clinical session: Feeding 3:15-3:30 pm TEA
Day 6 22 Dec Sun	9-12 noon: Module <i>Involving mothers in care</i> ~ 3 h 10:15-10:30 am TEA 12:30-1 pm LUNCH 1-1:30 pm: Video on feeding and mental development 3:15-3:30 pm TEA 4 pm: Closing ceremony	9-12 noon: Module <i>Involving mothers in care</i> ~ 3 h 10:15-10:30 am TEA 12:30-1 pm LUNCH 1-1:30 pm: Video on feeding and mental development 3:15-3:30 pm TEA 4 pm: Closing ceremony	9-12 noon: Module <i>Involving mothers in care</i> ~ 3 h 10:15-10:30 am TEA 12-12:30 pm: Video on feeding and mental development 12:30-1 pm LUNCH 3:15-3:30 pm TEA 4 pm: Closing ceremony



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ANNEX 3. NAMES AND ADDRESSES OF PARTICIPANTS

SI #	Name of participant	Designation	Sex	Contact address with fax # & e-mail
1	Dr. Uma Devi Chhetri <i>Facilitator</i>	Medical Officer	F	Kanti Children's Hospital, Kathmandu, Nepal Tele: +977-1-427452, +977-1-414498 (Res) Fax: 977-1-427449 Residence: 12/512, Naghal Kwado, Kathmandu, Nepal E-mail: kantikch@mai.com.np Rkchhetri@healthnet.org.np
2	Dr. Paras Nath Sharma <i>Participant</i>	Paediatrician	M	Kanti Children's Hospital, Kathmandu, Nepal Tele: +977-1-268972/261936 Fax: 0977-1-411550 E-mail: doctorparas@hotmail.com
3	Ms. Yamuna Koirala <i>Participant</i>	Hospital Nurse Supervisor	F	Kanti Children's Hospital, Kathmandu, Nepal Tele: 977-1-415530, 414498 Fax: 0977-1-411550
4	Dr. Roedi Irawan <i>Facilitator</i>	Paediatrician	M	Dr. Soetomo Hospital, Sidosermo Indah XII/7 Surabaya, East Java, Indonesia Tele: 62-31-550-1011/550 1012 62-31-550-1693 (Hospital) 62-31-843-7189 (Res) Fax: 62-31-550-1680, 62-31-550-1748
5	Dr. Sri Sudaryati Nasar <i>Participant</i>	Medical Doctor Paediatrician & Lecturer	M	Dr. Cipto Mangunkusumo Hospital Jakarta, Indonesia Tele: 62-21-391 5717, Fax: 62-21-390 7743 E-mail: nutrika@cbn.net.id
6	Ms. Retno Cahyaning <i>Participant</i>	Nurse	F	Jl. Kembang Kuning Karamat I No. 10 Surabaya – East Java, Indonesia Tele: 62-31-550-1693 (Hospital) Fax: 62-31-550-1680, 62-31-550-1748
7	Ms. Dyah Puspita Sari <i>Participant</i>	Dietician	F	Pondok Tanjung Permai Blok D/10 Jl. Wonorejo Asri Rungkut Surabaya – East Java, Indonesia Tele: 62-31-550-1693 (Hospital) Fax: 62-31-550-1680, 62-31-550-1748
8	Dr. Thet Swe <i>Facilitator</i>	Paediatrician		Mandalay Children's Hospital, Myanmar C/o WHO Office, Myanmar 7 th Floor, Yangon International Hotel 330 Ahlone Road, Dagon, Township, Yangon, Myanmar Fax: 00-95-1-212 605
9	Ms. Daw Cherry Oo <i>Participant</i>	Nurse	F	Mandalay Children's Hospital, Yangon, Myanmar C/o WHO Office, Myanmar 7 th Floor, Yangon International Hotel 330 Ahlone Road, Dagon, Township, Yangon, Myanmar Fax: 00-95-1-212 605
10	Dr. Tandn Dorji <i>Facilitator</i>	Paediatrician	M	Mongar Regional Referral Hospital, Bhutan Tel: 00-975-4-641112 (Off), 00-975-4-641149 (Res) E-mail: dorjitaldi@hotmail.com
11	Dr. Chandralal Mongar <i>Participant</i>	District Medical Officer	M	Bumthang Hospital, Bhutan Tel: 00975-3-631189 Fax: 00975-3-631438 E-mail: chandramongar@hotmail.com

12	Mrs. Yeshey Zangmo <i>Participant</i>	Chief Nurse	F	District Hospital, Trashy Yangtse, Bhutan Tel: 00975-4-781143 Fax: 00975-4-781171 E-mail: yesheyz@hotmail.com
13	Dr. Nimai Chand De <i>Facilitator</i>	Paediatrician	M	Child In Need Institute PO Pailan, Via Joka, Kolkata-700 104, India Tele: 91-33-4978206, Fax: 91-33-4978241 E-mail: cini@vsnl.com
14	Dr. Subhamoy Pal <i>Participant</i>	Medical Officer	M	Child In Need Institute PO Pailan, Via Joka, Kolkata-700 104, India Tele: 91-33-4978206, Fax: 91-33-4978241 E-mail: cini@vsnl.com
15	Ms. Deepa Biswas <i>Participant</i>	Nurse	F	Child In Need Institute PO Pailan, Via Joka, Kolkata-700 104 Tele: 91-33-4978206 and 91-33-4978192 Fax: 91-33-4978241 E-mail: cini@vsnl.com
16	Prof. Chowdhury B. Mahmood <i>Facilitator</i>	Professor & Head	M	Department of Paediatrics Chittagong Medical College, Chittagong, Bangladesh Tel: 88-031-619594 (Off), 88-031-651965 (Res)
17	Dr. Farid Uddin Ahmed <i>Participant</i>	Associate Professor	M	Department of Paediatrics Chittagong Medical College, Chittagong, Bangladesh Tel: 88-031-619594 (Off), 88-031-651644 (Res)
18	Dr. Muhibbul Hasan <i>Participant</i>	Senior Medical Officer	M	Chinna Mukul-Bangladesh Chilmari Thana, Kuitgram District, Bangladesh Tel: 88-0581-61690
19	Ms. Juthika Rani Mukherjee <i>Participant</i>	Nurse	F	Department of Paediatrics Chittagong Medical College, Chittagong, Bangladesh Tel: 88-031-619594 (Off)
20	Dr. Baitun Nahar <i>Participant</i>	Medical Officer	F	Clinical Sciences Division, ICDDR'B, Mohakhali Dhaka-1212, Bangladesh Tel: 88-02-8811751~60, Ext 2304/2309 88-02-9343737 (Res) Fax: 88-02-8823116 E-mail: baitunnahar@yahoo.com
21	Dr. Mohammed Ali Azam <i>Participant</i>	Medical Officer	M	Clinical Sciences Division, ICDDR'B, Mohakhali Dhaka-1212, Bangladesh Tel: 88-02-8811751~60, Ext 2304/2309 88-02-8124700 and 8130563 (Res) Fax: 88-02-8823116 E-mail: azam169@yahoo.com
22	Dr. Tahmeed Ahmed <i>Course Director</i>	Associate Scientist and Coordinator, Child Health Programme	M	Clinical Sciences Division, ICDDR'B, Mohakhali Dhaka-1212, Bangladesh Tel: 88-02-8811751~60, Ext 2304 Fax: 88-02-8823116 E-mail: tahmeed@icddr.org
23	Dr. Ann Ashworth <i>Course Director</i>	Professor, Public Health Nutrition	F	London School of Hygiene and Tropical Medicine 49/51 Bedford Square, London, WC1B 3DP, UK Fax: 0044207 299 4666, E-mail: Ann.Hill@lshtm.ac.uk
24	Dr. Kazi M Jamil <i>Clinical Instructor</i>	Senior Medical Officer	M	Clinical Sciences Division, ICDDR'B, Mohakhali Dhaka-1212, Bangladesh Tel: 88-02-8811751~60, Ext 2333 88-02-9887088 (Res) Fax: 88-02-8823116 E-mail: jamil@icddr.org

25	Dr. Sultana Khanum <i>Resource Person</i>	Course coordinator for management of severe malnutrition	F	Department of Nutrition for Health and Development World Health Organization 20 Avenue Appia, 1211-CH Geneva 27, Switzerland Tel: +41 22 791 2624 (direct)/4342 Fax: +41 22 791 4156 email: khanums@who.ch
26	Dr. Rukhsana Haider <i>Course Organizer and sponsor</i>	Regional Advisor, Nutrition for Health & Development and Food Safety	F	World Health Organization Regional Office for South-East Asia WHO House, Indraprastha Estate New Delhi-110002, India Tel: 91-11-337 0804, Extn. 26313 Fax: 91-11-337 0197 E-mail: haiderr@whosea.org
27	Dr. Ahmed Nurul Alam <i>Course Organizer and sponsor</i>	Head, Training and Education Unit	M	ICDDR'B, Mohakhali, Dhaka-1212, Bangladesh Tel: 88-02-8811751~60, Extn. 2111 88-02-8826318 (Direct) Fax: 88-02-8823116 E-mail: analam@icddr.org

**TRAINING COURSE
ON THE MANAGEMENT OF SEVERE MALNUTRITION
IN HOSPITAL SETTINGS, 11-22 December 2003, Dhaka, Bangladesh**

Pre-training inventory Questionnaire

Hospital: 11 hospitals in 6 SEAR countries responded

Responders: 11 participants in the workshop

	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	5	6	
b) Special room	1	10	
c) Beds in paediatric department	5	6	
d) Others: specify			
2. Referred from:			
a) out-patient department/emergency	11		60-100%
b) Referred from MCH clinic (%)	-	-	-
c) Referred from other public health facility (%)	-	-	-
d) Coming directly to hospital (%)	-	-	-
e) Other: specify (%)	-	-	-
3. Admission criteria:			
a) Weight-for-height	5	6	
b) Weight-for-age	9	2	
c) Presence of oedema	8	3	
d) Other: (specify)			
4. Maximum MN children managed at the same time:	11		10-40
Constraints: shortage of beds and staff	8	3	
5. Doctors available at MN ward:			
a) Day time	9	2	5-10
b) Night time	9	2	1-2
6. Nurses available at MN ward:			
a) Day time	10	1	3-5
b) Night time	8	3	1-2
7. Current mortality:			
a) Malnourished (% or number)	9	2	5-20% ¹
b) Normal nourished (% or number)	11		2-5%
8. Current duration of recovery (days):	9	3 (INA)	15-40
9. Discharge criteria:			
a) > 80% weight-for-height	2	-	
b) Improvement in clinical conditions	9	-	
10. Equipment facilities/supplies:			
a) Normal thermometer	11		
b) Low-reading thermometer (25 degree C)		11	

¹ Mandalay, Myanmar(20%); Jakarta (15%); Nepal, Kanti (10%); ICDDR,B 5%; 4 (6-19%); 3 (INA)
INA = Information not available;

	Number of hospitals: Yes	Number of hospitals: No	Percent or numbers as applicable
c) Functional child weighing scale	10	1	
d) Board for measuring length	6	5	
e) Board (stadiometer) for measuring standard height:	9	2	
f) Hemoglobinometer	9	2	
g) Paediatric nasogastric tubes	11		
h) Supplies for IV (scalp vein, poles, tubing, etc.)	11		
i) Supplies for blood transfusion	8		
j) Syringes (50 ml for feeds)	8		
k) Syringes (2 ml for drugs)	11		
l) Syringes (5 ml for drawing blood)	11		
m) Syringes (10 ml)	11		
n) Sterile needles	11		
11. Cooking facilities:			
a) Cooking space (kitchen)	10	1 (Kanti)	
b) Refrigerator	10	1 (Kanti)	
c) Stove or any other cooking method			
d) Dietary scales with 5g precision	3	8	
e) Electric blender	2	9	
f) Manual whisks	2	9	
g) Large containers/spoons for mixing/cooking	9	2	
h) Feeding cups, saucers, spoons, etc	8	3	
i) Measuring cylinders for measuring ingredients	9	2	
j) Jugs (1 liter)	9	2	
12. Hygiene facilities:			
a) Source of running of potable water	11		
b) Toilet and hand washing facilities	11		
c) Wash basin for bathing children	7	4	
d) Place for washing bedding and clothing	11		
e) Any method for trash disposal	11		
f) Soap for hand washing	11		
13. Pharmaceutical equipment/supplies			
a) Pharmaceutical scales for measuring chemicals	6		
b) WHO ORS	11		
c) Commercial ReSoMal	0	11	
d) Mineral/Vitamin Mix without iron (CMV)	1	10	
e) Glucose or sucrose powder	7	4	
f) Vaccines (BCG, OPV, DPT, Measles)	11		
Do you have iron tables?	11		
h) Do you have iron syrup?"	3	8	
i) Folic acid	11		
j) High potency Vitamin A (100,000/200,000 IU)	10	1 (Jakarta)	
k) Sterile water for diluting: If no, how do you sterilize water	11		

	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.	6	5	
ii) Ringer's lactate sol. With 5% gluc.	6	5	
iii) Half-normal (0,45%) saline with 5% gluc.	10	1	
m) Electrolytes and minerals			
i) Potassium chloride solution	9	2	
ii) Magnesium chloride power	6	5	
iii) Zinc acetate solution	4	7	
n) Supplies for blood transfusion			
i) Blood packs	9	2	
ii) Bottles	2	9	
iii) Syringes and needles	9	2	
14. Drugs available:			
a) Amoxicillin	11		
b) Ampicillin	11		
c) Benzylpenicillin	11		
d) Chloramphenicol	11		
e) Cotrimoxazole	11		
f) Gentamicin	11		
g) Metronidazole	11		
h) Nalidixic acid	9	2	
i) Mebendazole or albendazole	11		
j) Tetracycline or chloramphenicol eye drops	11		
k) Atropin eye drops	9	2	
l) Gentian violet for skin	11		
m) Potassium permanganate	11		
n) Nystatin ointment drops (for Candidiasis)	9	2	
o) Parafine gauze (tulle gras)	10	1	
15. Access to the following laboratory resources:			
a) TB tests (x-rays, culture of sputum, Mantoux)	10	1	
b) Urinalysis	10	1	
c) Stool culture	6	4	
d) Blood culture	7	3	
e) Cerebrospinal fluid culture	7	3	
16. Do you have all the necessary equipment/supplies /drugs etc. for case management of severe MN?: list			
Items available: Most antibiotics, and laboratory procedures			
Items not available: Basic equipments and supplies: low reading thermometers, height/length measuring board, kitchen scales, electric blender or manual whisks, 1 litre jug, wash basin for bathing children, 50 ml Syringe for naso-gastric feeding, pharmacological scales, vitamin mineral mix, ReSoMal, F-75, F-100			

Inter-Country Training Workshop on Management of Severe Malnutrition
Organized by WHO and ICDDR,B
11-22 December 2002, Dhaka, Bangladesh
List of Basic Equipment and Supplies

Annex 5

TRAINING COURSE ON THE MANAGEMENT OF SEVERE MALNUTRITION							
		Basic training package					
Country:							
Hospital:							
Supplier	Quantity	Item	Unit price US\$	Amount in US\$			
M.E.G., NL		Office fan heater with 3 ventilation modes: cold air, 1000W & 2000W. Heat adjustable, with thermostat and overhead protection.	37.7				
idem		Length measuring mat, range 0-90/92 cm for babies/toddlers	38.8				
idem		Mechanical kitchen weighing scale, with large bowl, range up to 2 kgs, graduated per 20 g.	24.8				
idem		Infant scale, 13kh x 10g, metric, w/tray	16.1				
idem		Height measuring instrument 0-200 cm for wall mounting, direct reading	12.4				
idem		Clinical thermometer, oral/rectal, prismatic, 35-42 C +95-108 F	0.4				
idem		Clinical thermometer, sub-normal 25-40C for premature infants	1.2				
idem		Blood glucose test strip for Elite blood glucose meter, can/50	55.4				
COPACK, DE		WHO HB Kit, Hemoglobin colour scale, 1000 test strips/kit	19.8				
M.E.G., NL		Nasogastric tube CH4, 50cm, sterile, bx/100	81.3				
idem		Nasogastric tube CH5, 50cm, sterile, bx/100	40.9				

idem		Oxygen tube, nasal, paediatric, 200cm, w/curved tips, dispo, ster., spectacle type, bx50	145.3			
idem		Face mask, size 3 for children, transparent silicone, autoclavable, circular, open cuff	30.1			
		parrafinguaze				
IDA, NL		WHO-ORS sachet, pk/100 sachets	5.8			
France		Combined mineral mix (CMV)				
cont'd. to page 2						
Basic training package , page 2						
Country:						
Hospital:						
Supplier	Quantity	Item	Unit price US\$	Amount in US\$		
M.E.G, NL		Medicine cup, 30 ml, plastic graduated in ml, 1 piece	0.1			
idem		rotary whisk ("fouet"), stainless steel	3.8			
idem		Hypodermic syringe 20 ml, 2-part, luer, disposable, sterile, bx/80	9			
idem		Syringe 50ml, 3-part, luer, disposable, sterile, w/catheter tip, bx/60	45.2			
idem		Wash basin, 3L (31x12cm), PP, autoclavable	6.4			
idem		Bowl, lotion, 2L, graduated, reusable PP	4			
		Total amount:				
<i>Total estimated cost: US\$ 2 000 - 3 000</i>						

