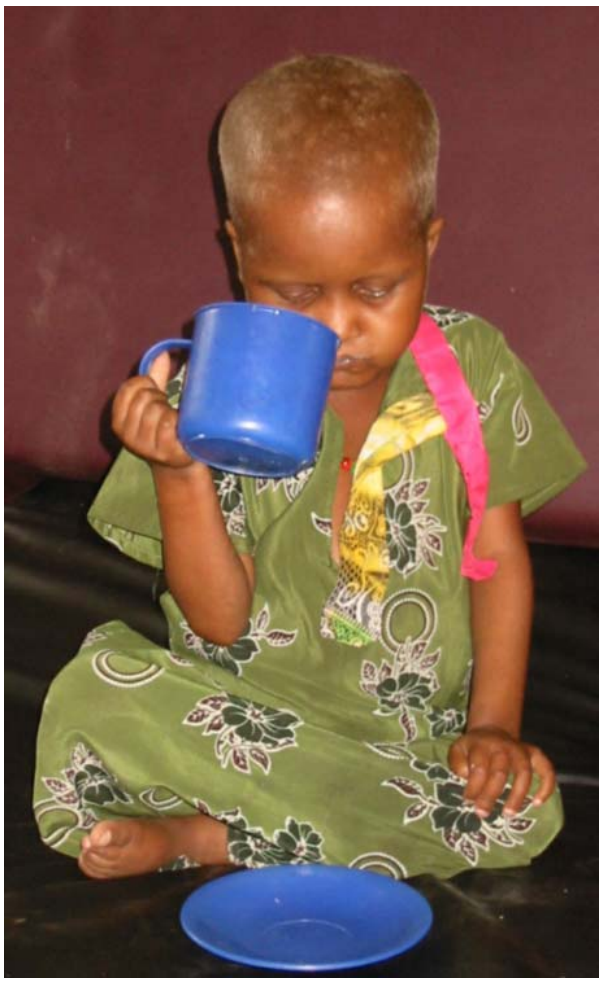
# MISSION REPORT

# THERAPEUTIC FEEDING PROGRAMME IN ETHIOPIA

## 11 APRIL TO 10 MAY 2006



**Mike Golden**

**Yvonne Grellety**

## Note

UNICEF Ethiopia hired Pr Michael Golden and Dr Yvonne Grellety as consultants to undertake an external review and evaluation of the Therapeutic Feeding Programme in the country. There are both known for their expertise in nutrition and in the management of severe acute malnutrition in particular.

The findings, interpretations, and conclusions in this report are those of the authors. They do not necessarily represent the views of UNICEF, its Executive Directors, or the countries that they represent and should not be attributed to them.

# Table of Content

## Acronyms

| | |
|---|---|
| ACF | Action Contre la Faim |
| ARV | Anti-Retroviral |
| CFR | Case Fatality Rate |
| CTC | Community Therapeutic Care |
| DPPB | Disaster Prevention and Preparedness Bureau |
| EOS/TSF | Enhanced Outreach Strategy/ Targeted Supplementary Food |
| EPI | Expended Programme of Immunisation |
| HC | Health Centre |
| HEW | Health Extension Worker |
| HIV | Human Immunodeficiency Virus |
| IMCI | Integrated Management of Childhood Illness |
| IV | Intra-Venous |
| LOS | Length of Stay |
| MDG | Millennium Development Goals |
| MUAC | Mid-Upper Arm Circumference |
| NG | Naso-Gastric |
| NGO | Non-Governmental Organisation |
| OTP | Out-patient Therapeutic Programme |
| PLW | Pregnant and Lactating Women |
| PMTCT | Prevention of Mother-to-Child Transmission |
| ReSoMal | Rehydration Solution for Malnourished |
| RHB | Regional Health Bureau |
| RUTF | Ready-to-Use Therapeutic Food |
| RWG | Rate of Weight Gain |
| SAM | Severe Acute Malnutrition |

| | |
|---|---|
| SC | Stabilisation Centre |
| SC-US, SC-UK | Save the Children US and UK |
| SP450 | Supplementary Porridge 450 |
| TB | Tuberculosis |
| TFP | Therapeutic Feeding Programme |
| TFU | Therapeutic Feeding Unit |
| VCT | Voluntary Counselling and Testing |
| WFH | Weight for Height |

## Acknowledgements

It is always a pleasure to come back to UNICEF Ethiopia. The staff are all most welcoming and the programs exciting.

We are particularly grateful to Sylvie Chamois. She is a tower of strength and is largely responsible for the massive expansion of the program, the support for training and institutionalisation and the saving of many thousands of lives that would have been lost without her efforts. This success and the fantastic job-satisfaction that comes with making such a difference, we know, is its own reward. Nevertheless, we feel very strongly that Sylvie Chamois's contribution should be widely recognised within UNICEF and her just rewards given by the organisation.

The representative, Bjorn Ljungqvist, has a fantastic vision and is making a tangible difference for the children of Ethiopia. And through the example of Ethiopia, the lessons learned can be applied elsewhere. We are grateful for his office accepting and supporting visits from paediatricians in other countries (notably Tanzania) to come and see the great progress and programs that are now operational in Ethiopia. His active support and advocacy has been crucial.

The nutrition team were wonderful travelling companions; in particular Tewoldeberhan Daniel, Rebekah Demelash and Samson Dessie were able to enrich our experience with their local knowledge and enthusiasm.

## Summary

There was an initial meeting where data was presented and suggestions made for the up-dating of the National Protocol. This was attended by NGO staff mainly and the local paediatricians within Ethiopia were invited but received the invitation letter too late to be able to attend. It was agreed that a new protocol would be written by Michael Golden and Yvonne Grellety that integrated in- and out- patient treatment and that this would be done after the present evaluation and take into account the actual findings of the evaluation.

An evaluation of the facilities and programs to treat severe acute malnutrition (SAM) in Ethiopia was conducted.

There has been remarkable progress with an enormous expansion of the programs for treating the severely malnourished. There are still a few technical problems but these are mainly related to inadequate training and organisation and are relatively easily rectified. Compared to other countries the mortality rate is very low and the best centres applying the current Ethiopian protocol are achieving about half the expected mortality rate from application of the 1999 WHO protocol (and derivatives). This is excellent. There are examples of MoH run facilities that are achieving results that are as good or better than those obtained by specialist well-resourced NGOs. These facilities should be both praised nationally and also used as examples of what can be achieved by the MoH and replicated elsewhere. Metastasis of such good practice is the way forward.

The introduction of out-patient treatment (OTP) has been a success and allowed many more children to access treatment than would have been possible with the old in-patient protocols only. This is an important innovation which has now been enshrined into the National Protocol. However, there are problems with the application of the OTP protocol as used in many places in Ethiopia. These derive mainly from the inability of the decision maker at the OTP site to properly decide the appropriate treatment course for an individual child. The introduction of a systematised appetite test and the expansion of training in Universities and Nursing Schools should address this problem to some extent.

There is a problem with the reliance of the SAM service on the input of the NGOs which are only operative in a few woredas of the country leading to a very low overall coverage. Great strides have been made in Jimma and elsewhere in creating a cadre of professionals who understand the problems of SAM – there has to be a progressive and measured hand over of responsibilities from the NGO to the MoH and such indigenous centres of excellence have to now be fully recognised, rewarded and used to spread nutritional knowledge and practice throughout Ethiopia.

A full debriefing was given to the UNICEF nutrition staff and then a formal debriefing with a major power point presentation giving the important findings was delivered to a full meeting which included all the NGO operating in Ethiopia that are active in treating SAM.

The new protocol was drafted immediately after the end of the evaluation and submitted to UNICEF and the Ministry of Health.

## Recommendations

1. The present focus of UNICEF in giving support to the Universities and training institutions is the correct way forward to provide Ethiopia with sufficient indigenous, properly trained staff to undertake the management and prevention of SAM in those areas not covered by the NGO (i.e. 5% of the country). There is no other way to generate sufficient impetus and sustainability.

2. It is strongly recommended that UNICEF and Ministry of Health should seek a meeting with the Minister and senior officials in the Ministry of Education to address the problem of the curricula. At the moment official documents, guidelines, policies, recommendations, and procedures that are endorsed, promoted and introduced by the Ministry of Health are not automatically taught in Medical or Nursing schools. The curricula are only changed after 3-5 years and then by a committee of the Ministry of Education. It not only affects the SAM protocols, but also IMCI, VCT, PMTCT, and all the other health programs that UNICEF is involved with. New graduates should always be taught from the latest material sanctioned by the Ministry of Health, and their introduction into the curriculum should be automatic. If the Minister of Health (Federal and Regional) officially endorses a guideline, protocol or other technical document then the introduction of this into the teaching curriculum should not have to await a committee of the MoE – the mechanism for upgrading the curricula in this respect should be automatic.

3. The Ministry of Health (and UNICEF) when they produce documents on medical management of any condition should automatically send sufficient copies of all the material to all the teaching institutions in Ethiopia.

4. Mekele University should be included in any program to involve Universities in UNICEF training and programs.

5. Awasa and other institutions that are at present teaching pre-clinical students should automatically be included in any formative initiative.

6. There is a lack of appropriate training and expertise in Addis Ababa. It is recommended that Zweditu hospital should be the main facility to run the SAM protocol in Addis initially. An OTP program should also be run from Zweditu (and outreach if possible) and all medical students should be taught about SAM and that it should be entered into the national curriculum.

7. That the HIV services that are available and set up in various hospitals throughout the country should screen all attendees for their nutritional status; treat those that are malnourished and collect data on the relative outcome of patients that do and those that do not receive nutritional supplementation.

8. It is clear that Jimma University has taken the lead in the management of SAM within Ethiopia. Jimma is now a source of expertise and best-practice. They should be fully supported to continue to expand and consolidate this expertise. Jimma University should be designated as a “centre of Excellence” and used to train and demonstrate to those from other regions/ hospitals and even internationally.

9. UNICEF should approach the regional office in Nairobi to seek special status for Jimma University as a regional centre of training for SAM. Those adjacent countries that come under the auspices of MENA region (Middle East and North Africa) could also use Jimma University until such time as a Centre of Excellence is established in the MENA region.

10. Jimma residents and student should be encouraged and supported to do operational research to answer many of the outstanding questions concerning the appropriate protocols to address SAM and other forms of malnutrition. Such studies could include: comparison of the type of recording, the functioning of the SAM unique number, the satisfaction of the mothers, the reasons for abandonment and non-compliance, the difference between having SAM-OTP clinics operating daily or weekly, the operation of the appetite test, sharing within the family and the effect of the instructions given, of a protection ration and of dispensing different amounts of RUTF, and many other questions that arise during operation of such a program.

11. Residents should be offered (at no cost to UNICEF) attachment to the UNICEF Nutrition staff as they visit various centres and do evaluations.

12. The staff of Dr Tsinuel's department (including residents) at Jimma should be used as a primary source of trainers.

13. That UNICEF staff who at the moment are doing in-service training should progressively hand over this function to Jimma staff and use their time for evaluation, support and follow up of operating centres and making assessments of the need for new centres.

14. In terms of understanding the need for support by UNICEF and the other implementers, it would be useful to have a collated record (database) that gives a rapid overview of all the visits that have been made, the action taken, and the contact people and the needs and commitments that have been made.

15. There should be a "hot line" or "support line" established – just as a company introduces a support system when it sells a new software for the computer - so that people in facilities that have already introduced the SAM protocol and subsequently have questions or get into difficulty and want advice can write, email, fax or telephone for support and, of course, receive this support in a timely and appropriate manner. If the questions cannot be addressed remotely then a site visit will be required to sort out the problems. The approach should be similar to a company marketing a new product that requires some skill to use successfully – such as software.

16. It is clear that most services cannot sustain 24h care for their in-patients with SAM, even those that have students and a full staff complement. It is important that the protocol be altered to provide a residential DAY-CARE regimen for most of the in-patients. If very few (one or two) patients need treatment at night, then this might be possible with the present staff, but it is quite impossible to give night-time treatment to all the SAM patients. 24h care should be implemented only on an individual basis decided by the physician in charge.

17. Many patients have to travel enormous distances to reach clinical facilities for appropriate in-patient care. It is clear that the introduction of SAM treatment,

following the national protocol, should be decentralisation as much as possible and treatment offered from health centres for in-patients using Kombolcha as a model program.

18. It is important to have a document that details “lessons learned” and that the mistakes that have been made are not replicated.

19. There is a major problem with the two different MUAC tapes. One with red until 125mm and the other with no numbers but red to 110mm. This has led to great confusion in the field. It is unclear how the new unnumbered tape has been introduced and disseminated without the agreement of the Ministry of Health. It is recommended that all tapes be withdrawn. And that a new tape with red until 110mm and yellow to 120 is introduced. The tape should be long enough to also be used to identify adults with SAM. At least one side should have numbers on it and both sides coloured. It should be WIDER than either of the currently used tapes (2 to 2.5 cm wide) as such tapes, used in South East Asia, are less likely to be pulled to tight and give a false reading. A wide tape will also help to differentiate these new tapes from either of the old tapes. The EOS/TSF program can take all children that fall into either the red or the yellow.

20. The training that is given for SAM should include BOTH the in-patient and out-patient components including the treatment of the complications. The training should also STRICTLY FOLLOW the NATIONAL PROTOCOL. Individual NGO and other organisations that give contradictory training should be encouraged to change. At the moment some of the trainers for the OTP program do not understand the management of in-patients or the recognition and care of patients with complications.

21. The introduction of a quantitative appetite test is critical to determine the appropriate treatment for individual children. At the moment the appetite test is being done differently by each organisation, centre and individual. Its is hopelessly inaccurate at the moment so that many children are treated inappropriately and either die as outpatients or are referred to in-patient care at a stag when their condition has deteriorated to a degree when they cannot be saved. What is happening at the moment is similar to assessing fever with the back of the hand on the forehead rather than using a thermometer.

22. Great care will have to be exercised before introduction of either Z-scores or the new WHO standards for the assessment of SAM, and it is recommended that the programs be examined to determine the impact such changes would have on the magnitude of the programs.

23. The NGO should be encouraged to expand their programs geographically.

24. The MUAC criteria for admission should NOT be used in children who are over 6 months of age but equal to or under 65cm in height.

25. There is an international need to devise methods of identifying the children who are less than 65cm and over 6 months who are malnourished and need treatment. The answer may be to use weight-for-age criteria for cross-sectional data or failure to grow if there is a functioning growth monitoring program in place (which takes

by definition longitudinal data on individual children). The answer to this question is not at the moment clear and no definitive advice can be given.

26. It is critical that the SAM unique number be introduced and used for all programs for an individual patient.

27. The nutritional support should be extended to adults and adolescents. It is unjust and unethical to deny patients, that are going to die from malnutrition, admission to a program that is operating in the area on the basis of their age.

28. Children with oedema ++ should initially be admitted for in-patient management if a properly run and trained TFU is available locally; if there is no local TFU with appropriately trained staff and organisation then they should be treated as outpatients, their outcome carefully recorded and the data used to advocate for up-grading of the local health centre.

29. The care of SAM should be part of the job description of the staff of all health centres and hospitals.

## Meeting to examine the National Protocol and suggest changes

Upon arrival we immediately went into a meeting that was designed to suggest revision to the existing National Protocol for the treatment of severe acute malnutrition (SAM). The participants were almost exclusively personnel from the NGO operating in Ethiopia. There were a series of presentations from Valid International detailing their own protocol.

The comments of the participants were all taken very seriously. There were several points where the participants disagreed with the Valid approach. Particularly, the registration of a patient when he is seen first at OTP but offered no treatment and referred directly to a TFU. This leads directly to double registration and inflation of the total number of children presenting with SAM.

It was agreed that Michael Golden would, after this evaluation mission, draft a combined protocol covering both in- and out-patients for the consideration of the Ministry of Health in Ethiopia. This was set as the number one priority for attention after the evaluation mission was complete. It was unfortunate that there was not a greater representation of the Ethiopian Ministry of Health or of the senior paediatricians within Ethiopia who would be taking responsibility for implementation of the protocol.

## Preparation of the updated Draft Ethiopian Protocol

After the evaluation mission (reported in this document), we spent approximately one month revising and integrating the protocols. This was necessary as the in-patient protocol was not specifically geared to prepare the children for discharge straight to phase 2 as outpatients. It was also necessary to evaluate the programs as they are currently operating in the country and to try to address any problems found in the updated draft protocol. There were indeed several serious problems encountered; mainly problems with registration and reporting and also with the failure to give adequate instructions for deciding upon the appropriate line of treatment for children first seen at an OTP site. This was in most places perfunctory and largely left to the individual judgement of the person at the font line.

## Evaluation of the facilities

### *Zweditu Memorial Hospital, Addis Ababa*

We were shown the hospital by Dr Wondwossen Desta, paediatrician and sec of Paediatrics Association of Ethiopia.

The outpatients department was packed with patients, some of which were malnourished.

The staff had had a training by Mohamed Foh (UNICEF) and two of the paediatricians had attended national workshops. They had the materials but were not applying protocol. Clearly, with the knowledge and resources present, to fail to apply the protocol is something that needs to have the underlying reasons addressed. The basic problem was resistance from the nursing staff. It transpired that two trained nurses had rotated to other wards and their replacements had not been trained, did not understand the protocol and resented extra work involved. I was not clear whether or not they considered this part of their job. In particular, there was great difficulty in applying, making up and dispensing the diet at night. This was found to be a general problem in all the clinical facilities that we visited.

It is clear that there are two factors that need addressed:

First, it would be better if the protocol allowed for the definitive treatment to occur during the day only for any child for which this is possible, even in referral hospitals and relatively well resourced centres the problems of treatment at night and staff turnover appear to be intractable. It is better to have most of the treatment given during the day than half treatment during the day and none (or dangerous treatment) at night.

Second, there is definitely an on-going problem with staff attitudes to severe malnutrition. They seem to perceive this not so much as an illness, and do not realise the very high mortality rates of the malnourished. This will only change with sustained learning and teaching at pre-service level.

In the ward there were severely malnourished children, many with HIV. ARV are being given; however, there is a very high rate of side effects from ARV; there is no appreciation that the toxicity of the ARV is related to the malnutrition of the patients. No food is being given to the severely malnourished HIV+ patients, and certainly not the therapeutic foods required. It is ironic that the staff can spend such care on VCT, ARV administration and ignore the one factor which leads to the treatment being ineffective. Most of the malnourished patients had IV infusions (for example with crystalline penicillin in ½ strength saline). We observed one malnourished child in heart failure caused by this treatment; his shortness of breath was ascribed to anaemia/pneumonia.

Although daily weights are taken, the patients are weighted with all their clothes on, so that the data are largely meaningless and cannot be used to guide treatment. Height is not taken and the nutritional status of the child not assessed.

**Figure 1 Weighing with clothes on**

There is a new HIV testing and ARV distribution centre; but none of the patients have their nutritional status assessed.

Nevertheless, there are very good physical facilities at the hospital and very good motivation of the medical staff. They teach medical students.

Recommendations:

1) Zweditu hospital should be the main facility to run the SAM protocol in Addis initially,

2) An OTP program should be run from this hospital (and outreach if possible),

3) All medical students attending Zweditu should be taught about SAM,

4) The HIV service should screen all attendees for their nutritional status; treat those that are malnourished and collect data on the relative outcome of patients that do and those that do not receive nutritional supplementation.

## *Axum Hopsital, Tigray*

Axum hospital had recently started the treatment of SAM. The protocol was not being properly applied, probably due to poor pre and in-service training. Sixteen of 26 SAM patients had had an IV infusion (10 of whom had oedematous malnutrition); all the children we saw were being fed with NG tubes whilst taking food from the mothers. There were 7 deaths (27%), all these children had received inappropriate IV infusions (5 had +++ oedema). However, it was difficult to judge as there were no clinical notes to document the course of the individual children's condition. These patients were very severely ill –the expected mortality using the old protocol (WHO) was 20% and with the new protocol we would have expected about 10% mortality.

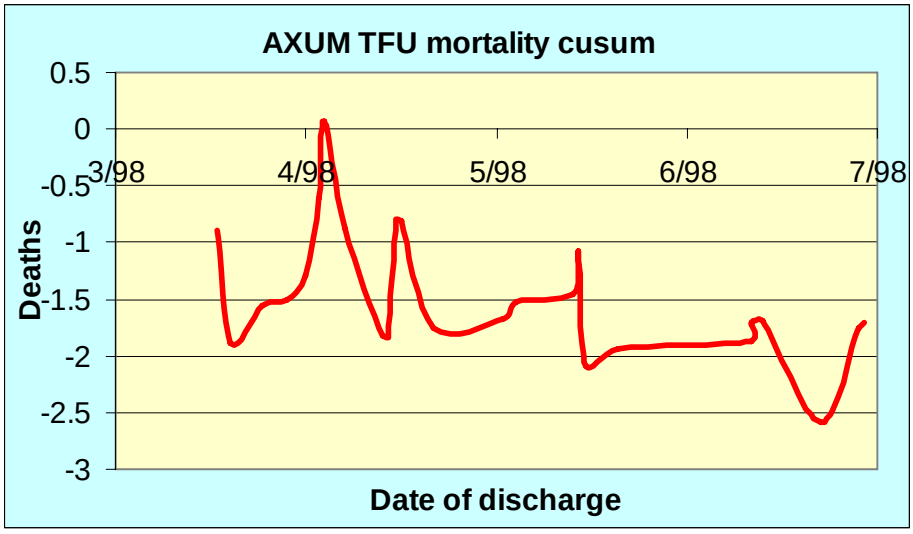
No treatment was being given at night (reported not observed). The ward was overcrowded. There was no testing of either mothers or children for HIV.

Three quarters of the adults in the medical ward had a MUAC of <180mm and were severely malnourished. Only, 10% of those in the surgical ward were severely malnourished. The treatment of the adults (mothers and fathers) was ignored.

**Comment**: There is clearly a problem with introduction of SAM treatment into such facilities when the whole team within the facility has not been properly taught how to manage such patients. Merely giving an orientation to one doctor at regional level and then supplying the products will not reduce the unacceptable mortality rates (although it is clear that these patients have been receiving such treatment for before the supply of the products). It again emphasises the importance of understanding the provisions of the protocol and not thinking that the giving of F100, F75 or RUTF will solve the main problems of malnutrition in such facilities. It is equally clear that the nurses and doctors should have been trained in medical and nursing school, and the situation will not have a sustained improvement until this training is fully institutionalised.

The cusum is a way of examining the data to determine if there are more or less deaths than expected when the WHO protocol is used (Using the Prudhon index). The line goes up if there are fewer deaths and down if there are excess deaths. As the lines are plotted against time, this technique is used to determine when changes in the mortality rate occurred; these can be related to changes in the protocol, personnel, organization or other modifications to the management of the children. The index, in effect, compensates for changes in the severity of the malnutrition so that units that admit more severely affected children can be compared with those that admit less severely affected children as the absolute mortality rate is expected to be different

**Figure 2 Cusum of mortality at Axum Hospital. A decreasing slope indicates excess death**



## *Axum Nursing School, Tigray*

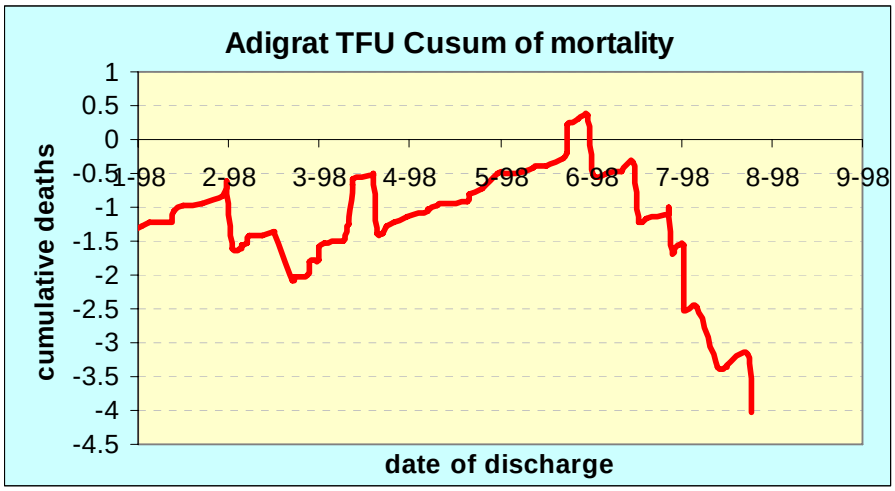
Muiugeta Chernet Demiew the director kindly received us. This school teaches clinical nurses and environmental health officers. There are about 360 enrolled students (120 per year). To teach these students there are 11 tutors for 8 classes. The tutors do not have clinical attachments and do not seem to do ward teaching (only class-room teaching), for this they have chalk boards. There are 3 overhead projectors and no other teaching aids. Of the enrolled students there are only 60 females (and 300 males).

Nutrition is not yet in the curriculum. They plan to address this problem by having a 5 day "workshop" just before graduation for the departing students. As the curriculum is set at federal level the director states that he has no power to introduce nutrition into the curriculum without federal approval, even though he recognises the need.

## *Adigrat hospital, Tigray*

This is a referral hospital. There are 2 doctors, 25 nurses and 28 other staff for 150 beds (and about 200 outpatients per day). The treatment of SAM had been introduced about 8 months before our visit. There had been 85 admissions for SAM with 10 deaths.

**Figure 3 Cusum of outcome in Adigrat Hospital**




The cusum shows that Adigrat had been doing reasonably well until two months before our visit – since that time there was a definite change with most of the excess deaths occurring during that time. This appeared to be related to staff turnover. The director said that the nurses were exhausted and were asking for additional incentives to work at night. Night cover was mainly by unsupervised student nurses and the malnourished children were not attended to at night.

There were few cannulae in the TFU and the patients did not have drips that we observed. One patient (with kwashiorkor) had been put onto ReSoMal and was in incipient heart failure.

VCT, PMCTC and ARV had been introduced to the service, this treatment was free for the patients – all other treatments had to be paid for.

The MUAC was taken on 31 patients in the adult wards. Of these 16 had a measurement of <180mm and only 6 had a MUAC of >210mm. The lowest adult MUAC was 135mm! No dietary treatment at all was being offered to these patients.

**Recommendation**: It is clear that the service cannot sustain 24h care for their in-patients with SAM. It is important that the protocol be altered to provide a DAY-CARE regimen for most of the patients. If very few (one or two) patients need treatment at night, then this might be possible with the present staff, but it is quite impossible to give night-time treatment to all the SAM patients. 24h care should be implemented only on an individual basis decided by the physician in charge.

Many patients have to travel enormous distances to reach Adigrat (100 km etc.), there are no facilities to treat SAM closer to these patients homes. It is clear that decentralisation and treatment from health centres is a priority if most of the children in need are to be treated.

## *Regional Health Bureau, Tigray*

The Director of the Regional Health Board for Tigray presented us with the 5 year strategic plan. This was mainly directed towards the MDGs; maternal mortality reduction, child mortality reduction and HIV/AIDS being the main focus. There was agreement to change the organigram to include nutrition.

The Director reported that there were plans to further decentralise control and that most of the hospitals in the region have much more autonomy in future. This could complicate the sustainable introduction of the treatment of SAM and also result in rapid changes of quality of care as hospital directors turn over; a good example of this latter problem is Sodo hospital (SNNPR) where there was a very good centre that was closed and all the F100 sent to the kitchen for blending with patient food, when the hospital director changed.

The question of the facilities and teaching in the nursing school was raised. The director stated that the curricula for both medical and nursing schools came under the Ministry of Education. I asked about curriculum policy and what happened with other policies, guidelines and protocols introduced by the Ministry of Health. It was stated that these official documents from the Ministry of Health were not distributed to medical and nursing schools and that there was no obligation on the part of the pre-service trainers to teach or inform the students of the guidelines issued by the Ministry on Health until the Ministry of Education officially informed the schools – indeed, until informed there would be no time or facilities, training or up-grading of the teaching staff of the nursing schools or medical schools and this would normally take one to five years. He circumvented this problem because the RHB was responsible for registering the nurses. He stated that he had informed the nursing schools that unless they taught, for example, the HIV guidelines that he would not register the new graduates. This seems to be a major problem in all the teaching facilities. Directors of RHB who do not take such a firm attitude would have newly qualified students in the health facilities who were unaware of the guidelines that they should be following.

**Recommendation**: It is strongly recommended that the Ministry of Health and UNICEF seek a meeting with the Minister and senior officials in the Ministry of Education to address this problem. It not only potentially affects the SAM protocols, but also IMCI, VCT, PMTCT, and all the other health programs that UNICEF is involved with. New graduates should always be taught from the latest material sanctioned by the Ministry of Health automatically – indeed, if the Minister of Health (Federal and Regional) officially endorses a guideline, protocol or other technical document then the introduction of this into the teaching curriculum should not have to await a committee of the MoE – the mechanism for upgrading the curricula in this respect should be automatic. The Ministry of Health (and UNICEF) when they produce documents on medical management of any condition should automatically send sufficient copies of all the material to all the teaching institutions in Ethiopia.

### *Mekele University, Tigray*

We were not able to make a formal visit to the University. We entertained a delegation in the evening: the Dean, Dr Sadike, and professors of Biochemistry (Dr Mefita), physiology (Dr Geremew) and anatomy (Dr Ameri). They were very enthusiastic about nutrition, the new protocol and teaching and committed themselves both to introducing the full protocol into the curriculum and to using the example of malnutrition when teaching the pre-clinical subjects.

**Recommendation**: that Mekele University be included in any program to involve Universities in UNICEF training and programs.

### *Mekele Health Professional Training School, Tigray*

The institution trains clinical nurses, midwives, pharmacists, physiotherapists and laboratory technicians. There are 550 students (410 of them male). They do two months public health in the community over the 3 years of training.

There are 17 classes with 21 tutors. They have 3 overhead projectors and one LCD projector (one old laptop). There are 15 computers in the computer room, but they are not networked and there is no internet access or central server. There are no scales, length-board or documents to teach about nutrition. The library does not receive any regular publications. There is no communication with either the Carter Centre of Linkages.

The curriculum is updated every 3-5 years by the Ministry of Education. The director stated that he is not “mandated” to put any new material into the curriculum but will do so if he receives “instructions” from the RHB for the introduction of “suggested guidelines”. There is no communication between the nursing school and the ministry of health facilities. None of the staff or student had visited any therapeutic feeding program and none of the staff of the nutrition programs come to teach or orientate the students – there is simply no communication between the teaching institution and the service providers of different types of program.

**Comment**: it is difficult to see how, with the facilities, intellectual isolation and out-dated curricula (3-5 years) that such an institution can properly prepare students to work competently within the health services of the Region. This is not a criticism as the staff and

students are all enthusiastic and are coping as best as they can under the circumstances within the rules that have been set. High quality pre-service training appears to be an area that has been overlooked, in terms of teaching materials and training of trainers.

### *Mekele Hospital, Tigray*

The hospital is about to move into completely new premises. The present hospital has 35 paediatric beds. The protocol has been in operation for about 6 months. The paediatrician was trained at Adama.

There is a major problem with staff turnover – the new staff not having been trained. There has been introduced a system whereby with staff turnover at least 2 nurses are retained to teach the incoming nurses.

There are nevertheless problems. All children are weighted with their clothes on. Most children have NG tubes (mothers like them) and stay for a long time in Phase 1. A large number have a diagnosis of persistent diarrhoea. There is no effective treatment at night.

There are a large number of malnourished adolescents.

It would really be useful to have a day-care protocol and to have those in Transition Phase/ Phase 2 on RUTF in the hospital so that there is no need for the staff to make up and dispense F100.

This is the main referral hospital for the whole region. Many of the patients travel long distances to attend (up to 200 km). It is critical that a decentralised OTP program is put in place and that there is good communication between the hospital and the health centres/ peripheral hospitals. Such communication and logistics are the weakest part of the health system at the moment.

**Comment:** the national protocol has been changed to allow for this modification.

Recommendations:

- It is important that an OTP program is introduced as soon as possible.

- Night feeds should be avoided using the day-care protocol and RUTF should be used in Transition Phase/ Phase 2 so that there is no need for the staff to make up and dispense F100.

- All staff should be trained on the national protocol.

### *Jimma Health Centres, Oromia*

The OTP program has just started at several health centres around Jimma. The teams were trained by Valid and Concern staff. On starting the program it was found that two children who had been sent home for out-patient treatment died. This led Dr Tsinuel Girma (Jimma University) to take a much closer interest in the OTP program, and to personally alter some of the protocol that had been introduced.

In particular:

1) it was thought important to standardise the appetite test so that the staff were clear about what constituted a "poor" appetite and what constituted a "good" appetite. The teaching did not address this problem at all and left it up to the nurse to form a general impression. Some thought that taking any of the diet constituted a good appetite, others thought that the children should take the diet "greedily", most were somewhere in-between. It was clear that the application of this test to the children would be at best haphazard and at worst dangerous – it would be a complete lottery whether a child was admitted to in- or out-patient treatment depending upon the particular staff member on duty.

2) it was clear that having an outcome as "defaulter" did not differentiate those children who had died from those that had abandoned treatment. A home visiting program was not yet in place. It was considered essential to add another category of outcome – "unknown" – to the register and records.

3) the teaching advocated that a register should not be used and that the patients cards should be retained within the health centre as the only record of the child's illness. In the NGO programs it was envisaged that the OTP would all be in close contact with a controlling person (at the NGO base) and that this person would collect and collate the data, the control of the program would be at OTP level and the in-patient facility would be "used" as a subsidiary service. In Jimma it is clear that the control of the program should be in the hands of Dr Tsinuel's team and that the control should be at the level of the hospital/ university. This requires that there be a registration book and a system for referral. The system used by the HIV and TB services is familiar to all the staff in the centres and hospital and it is strongly propose that the same system be used for SAM. There has to be a unique SAM number that is recorded by the fist facility to TREAT (not see and refer) the patient and that this unique SAM number must follow the patient to all subsequent services.

4) it is essential for the centre staff to have a registration book for recording the patients. The staff are used to and familiar with this process and do not have the space and facilities to securely store the OTP cards without loss.

These modifications were discussed extensively with Dr Tsinuel and their introduction was considered in terms of the other health facilities and OTP sites that were evaluated during this mission. It was decided that these changes were essential for implementation of the protocol in the MoH health structures of Ethiopia.

The staff of the health centres is enthusiastic and very well motivated. In the centres the children were being weighed with their clothes on, the only scale in one of the clinics was an adult scale weighing to the nearest one kilogram. Height was not being taken accurately. Nevertheless, the centres were popular and functioning and with the correct equipment would be doing a good job.

## *Jimma University Hospital, Oromia*

Jimma has continued to maintain its very high standards. The mortality rate is about half of that predicted by using the Prudhon index. The data are given in the table below.

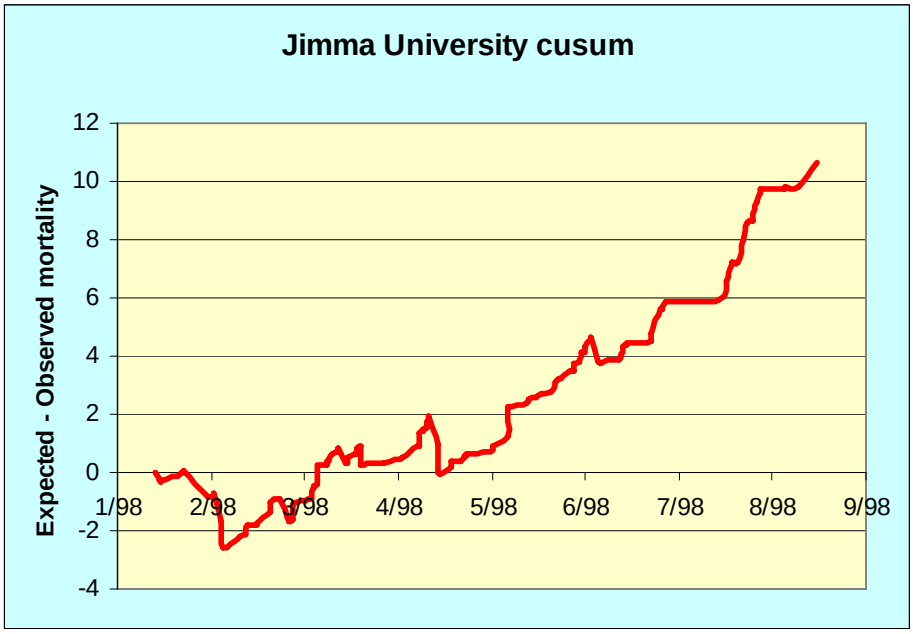
**Table 1 Observed and expected deaths from Jimma TFU**

| OED | SUB# | OBS# | EXP# | SIG |
|---|---|---|---|---|
| 0 | 41 | 4 | 8 | <0.05 |
| 1 | 16 | 0 | 3 | <0.02 |
| 2 | 25 | 1 | 3 | NS |
| 3 | 72 | 5 | 6 | NS |
| ALL | 154 | 10 | 21 | <0.01 |

Interviews with the junior staff show them to have a deep understanding of the metabolic problems of malnutrition and each is capable of managing malnutrition without senior help. The quality of teaching is very high and the pride and moral of the staff exceptional. This comes from leadership.

The mothers are happy and content with the service that they are receiving. There were no drips, no NG tubes and one cannula (only). A large proportion of the children had TB and many with +++ oedema. Surprisingly many of the patients were older children.

**Figure 4 The cusum from Jimma: the mortality rate is about half of that predicted from application of the WHO protocol**



The HIV clinic for adults and children has started to measure MUAC and to dispense RUTF (BP100) to all malnourished adults. The impression of the staff is that the program is very successful indeed, however the effect of the RUTF supplement has not yet been analysed. We emphasised that these data were of very great importance and interest not only for Ethiopia, but for the whole of Africa.

The adults in the hospital were examined. Of 50 adult in-patients 8 had MUAC values of less than 180mm. It is not clear why the proportions of adults with SAM should be so different from one centre to another. There were also a number of adolescents with very low MUAC values.

Extensive discussions were held with Dr Tsinuel. The following were agreed:

Jimma is willing to accept people from other regions/ hospitals and even international and to function in this respect as a demonstration centre.

Residents will be encouraged to do operational research such as: comparison of the type of recording, the functioning of the SAM unique number, the satisfaction of the mothers, the reasons for abandonment and non-compliance, the difference between having SAM-OTP patients attending daily or weekly, the operation of the appetite test, sharing within the family and the effect of the instructions given, of a protection ration and of dispensing different amounts of RUTF.

Residents could be offered (at no cost to UNICEF) attachment to Dr Tewoldeberhan or Rebekah or one of the UNICEF staff who is going round different centres doing evaluations.

Recommendations:

- That the points agreed with Dr Tsinuel be implemented

- That the staff of Dr Tsinuel's department (including residents) be used as a primary source of trainers

- That UNICEF staff should move from a teaching role in Southern Ethiopia, (which should be progressively taken over by Jimma University), to a stage of evaluation of operating centres and opening new centres.

## *Hiwot Fana Hospital, Harare*

The Hiwot Fana TFU is in a separate structure in the car-park outside the paediatric ward. The results are excellent. Out of 582 admissions they have had 21 deaths (3.6%). Patients are referred from Goal, IMC, Care and Save the Children – the admissions tend to be complicated cases that the NGO cannot themselves deal with. To achieve such a low mortality is very gratifying. The full protocol is being implemented. The staff of the unit are permanent and do not rotate.

A group of student nurses attending the paediatric ward were interviewed. They had not heard of the protocol, had not been into the TFU and were completely ignorant about severe malnutrition. This is a great opportunity lost – it is not at all clear why the organisers of the nurse training and curricula exclude the management of severe malnutrition when the nurses are being taught a few yards from the TFU and walk past the TFU.

The patients and mothers are happy, and many of the mothers from the main paediatric ward visit the TFU to "socialise". It is clear that the mattresses on the floor and the general atmosphere of the tent are much more conducive to social contact than the normal hospital ward.

There were few malnourished adults in the adult wards in marked contrast to the situation in 2004. Only 5 of 22 adults had a MUAC of less than 180mm.

## *Kombolcha Health Centre, Oromia*

This is a typical health centre. In-patients are accommodated in the centre and an active OTP program is in operation. They have treated 100 patients so far and have had one death (from pneumonia).

Analysis of the expected mortality from the Prudhon index is that there should have been 10.1% mortality.

These are exceptional results.

The service is being run by one nurse who clearly has been very well trained, is highly motivated and is doing a superb job. Congratulations, Nurse Tsehay Tadese. When she is absent Tamrat Kassa looks after the patients.

The following pictures show aspects of the health centre.

**Figure 5 Kombolcha TFU + OTP. This is a typical health centre. One room is used for the patients who will remain in the centre as residents and one for registration and seeing the OTP patients. The materials are all clean and in good order, the registration and charts properly kept and the patients happy.**






Not only are the results exceptional, but the patients are all very happy with the treatment they are receiving, there is a fully integrated OTP service and the patients are offered the

choice to either stay in the centre or go to OTP and attend weekly at the centre. The average rate of weight gain was 12.9g/kg/day which is well within the Sphere guidelines.

We went to see the local Kebele administrators. They were having a meeting with an NGO. We reported that the centre was doing a superb job and we wished the kebele to give it all the support that it could. The kebele leader was surprised, he had thought that the nurse was "only feeding children" a job that could be done by anyone and did not require the services of a nurse! We emphasised that what she was doing here in Kombolcha was one of the best jobs being done anywhere in Ethiopia, and that we would very much like to use Kombolcha as an example for the rest of Ethiopia of how things should be done.

It is so nice to be able to report a real success story, being conducted entirely by the Local Health Authorities without the intervention of a NGO.

If the service being provided in Kombolcha could be replicated in the rest of Ethiopia, indeed in the rest of Africa, then we would be well on the way to tackling the problem of malnutrition.

Well done Kombolcha, Harare Region, Ethiopia and UNICEF. If it can be done in Kombolcha why not everywhere – it is an absolutely typical health centre with staff under the same terms and conditions of service as elsewhere.

**Comment**: The out-patient management of severe malnourished patients (OTP) has considerably increased the length of time of the treatment; the number of different structures following patients suffering with complicated severe acute malnutrition (OTP sites – TFU at health centre level – TFU at hospital level) and the absence of link between the HC/ hospital multichart and the OTP card. Just to record a name and facility number is completely inadequate to get the complete history of the patient care during his/her disease. Such is the case in most of the programs in Ethiopia and it is very difficult to obtain complete reliable verified data from any source.

The second problem faced was that the HC multicharts in the HC structures were often missing. This was because any child transferred used to take his/her multi chart to the hospital to get free treatment in the hospital. This was the only way (according to SC-US supervisor) to ensure free treatment for the child. On arrival the OTP registration number was not recorded in the hospital or health centre registration books and the patient was treated (and reported) as a new admission.

In order to properly evaluate the treatment, we would have to make a special request at least one week before arrival to all the partners to collect the discharged children from the HC over the past 6 months and determine their actual outcome. This is not a realistic possibility as the outcome of many children could not be determined. Most centres use the euphemism "abandoned" or "defaulter" from an OTP site when in reality the outcome is completely unknown. The children may have died, or frequently, because of dissatisfaction with the service sought treatment elsewhere. Even when complete data for the movements back and forward for individual children is know the analysis is very complicated. To do a full analysis would have taken much more time, effort and cooperation than we actually had at our disposal. It is clear however, that much of the data presented in reports is partial data because of failure of the different facilities and programs to collate their data.

### *TFP in Amhara region*

Amhara region has 114 woredas, 16 hospitals, 6 nursing schools, 1 medical university and 5000 health extension workers. There are NGOs present in 3 of the 114 woredas. Concern are active in Dessie and Kalu woreda. SC-UK is in Dehana, Sekota, Ziquala woredas. Their programme was implemented 6 months after they did the survey and found significant malnutrition. Their admissions have recently increased from 700 to 1000 because they changed to using MUAC criteria for admission (all children of 6 months or more with a MUAC<110mm). There are many children of more than 6 months who are less than 65cm (the height below which MUAC is not used). There is also a program in Sekota woreda run by the MoH (at THM hospital).

### *Dabat Health Centre, Amhara*

The Health centres in the Dabat area that were running OTP had major problems. The admission criteria were WFH of <80% of a MUAC of <11.5 (figure 6), or a MUAC of <12.5 (in one centre).

**Figure 6 Wall chart Dabat**

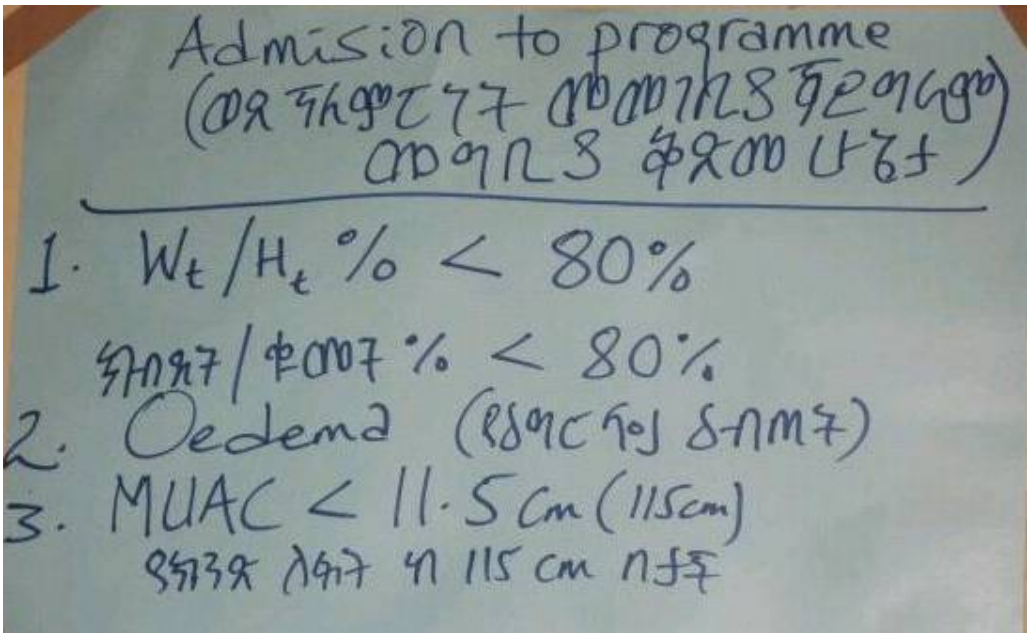
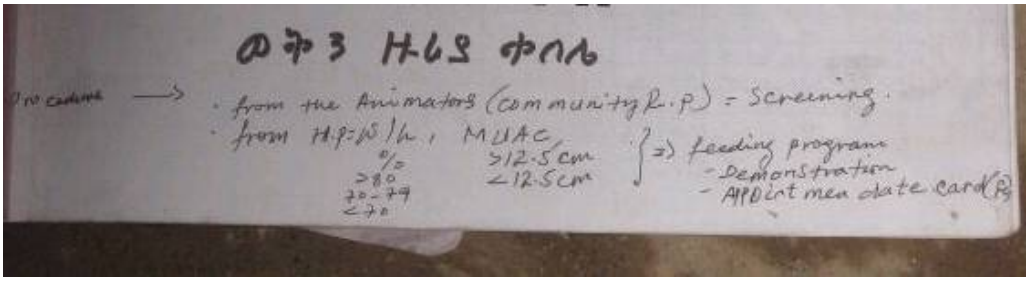


**Figure 7 Wall chart Dabat**



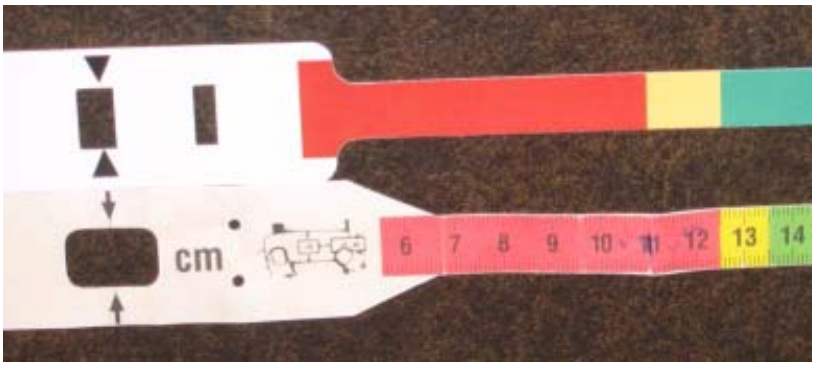

In Wagenr health post only 4 out of 23 admissions satisfied the established criteria for admission. In the second health post 20 of 38 were probably appropriate admissions. Many of the patients admitted on MUAC criteria were less than 65cm in height (when MUAC is an inappropriate criterion).

In Dabat health centre itself weight for height was recorded in the register. The weights were taken with clothes on to the nearest 1kg (and for some to the nearest 500g). Despite this 35% of children were recorded as <60% WFH and 10%<50%WFH – the lowest was 39% WFH. These figures are biologically impossible, especially as the weights will have been inflated by the weight of the clothes.

We spoke to one of the community leaders who stated that the community could not understand why one child was admitted to the program and another excluded when to the community they all appeared to be equally thin.

Part of the problem appears to be a confusion between the EOS/TSF criteria (and MUAC tape) and the SAM/ OTP criteria. There are two MUAC tapes in circulation in Ethiopia with quite different cut-off points indicated by the “red” zone.

**Figure 8 two different MUAC tapes in use in Ethiopa**




In one health post there were enormous quantities of RUTF stored.

**Figure 9 RUTF stored in Dabat woreda**

In this health post there were no charts so the responsible person used the growth monitoring weight-for-age charts to plot the course of the child's growth on RUTF. Remarkably there was considerable catch-up in weight-for-age for 8 of the 10 children. As most of these children's low weight-for-age will be dominated by stunting, this appears to show that RUTF causes a marked and quite rapid catch up in height. This experience could usefully be carefully documented in a research setting to determine whether stunting can be reversed by adjustment of the nutrient intake of the children. If this is so it is direct evidence that half of Ethiopian children are stunted primarily because of nutritional deficiency – and if the nutrients in their diet could be increased to approximate to those of RUTF then stunting would be greatly alleviated.

**Figure 10 Example of catch up growth in terms of weight for age with RUTF**


We have not seen any children being weighed without clothes in any of the centres that we have visited. In Amhara region it is the firm belief of the population that sunlight is dangerous for young children. The place where weighing is done MUST be indoors in a relatively dark room if the clothes of the children are to be removed. In one health post the person responsible herself weighed the clothes of several children and removed this weight from the recorded weight. This is the same person who on her own initiative used the growth monitoring charts – she is to be highly commended for her initiative and attention to detail – she clearly understands her role.

The picture below shows the weighting apparatus in one health centre – it is in the open air close to the road – it is quite inappropriate to set up this type of structure when the population is afraid of direct sunlight.

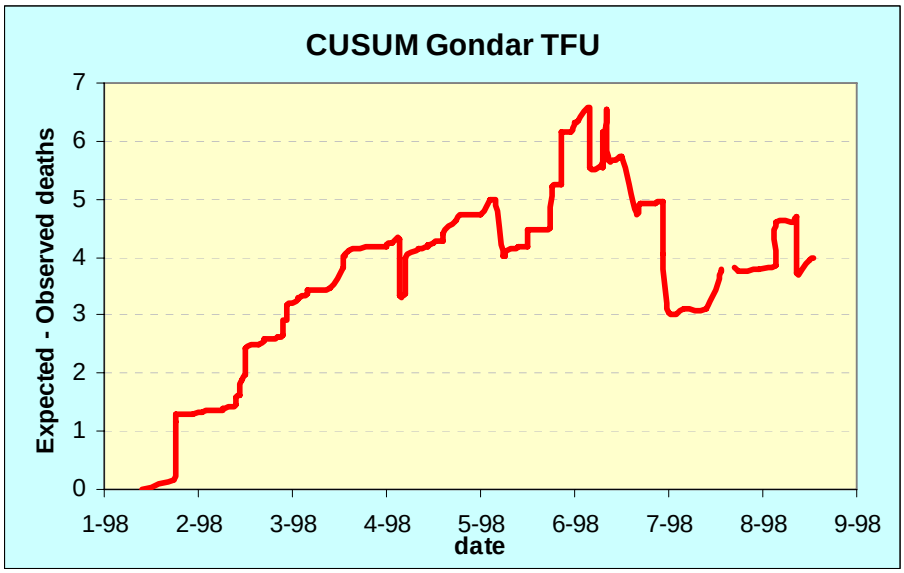
**Figure 11 Weighing installation**

**Comment**: It is clear that there OTP program in Dabat region has been started without the appropriate training of the staff. This appears to be because the training for OTP treatment was given as an "orientation" and not as a proper workshop. The outcome is that large numbers of patients have been admitted to the program inappropriately and the reported returns from this program are wrong and should not be used in any statistics. A large amount of RUTF has been distributed and the community is confused and apprehensive about the program. There is a major problem with the MUAC tapes being used for SAM screening and for EOS/TSF.

## *Gondar University Hospital, Amhara*

The competence of Dr Solomon (paediatric ward) at Gondar hospital is undoubted and when he is active in the ward the results are good. We did a ward round with one resident and he appeared to know little about SAM, the answers to questions were in many cases incorrect and potentially harmful if applied to a SAM patient.

**Figure 12 Cusum of patients admitted to Gondar**




The data from the register were entered into the computer for analysis. The results show that the centre was doing very well from 1-98 until 6-98. (with modern management about half the deaths expected from the Prudhon index are recorded). Then there was a period of about one month when there were excess deaths. This was reversed more recently. Inquiry about the changes that had occurred at that time was made. It transpired that Dr Solomon had been engaged in IMCI training and was not attending the ward at that time. We would speculate that the good results coming from Gondar are dependent upon Dr Solomon's personal oversight of the service and that when he is not present the quality of care is deficient.

There are still problems with double registration and record keeping.

The number of children abandoning the service is excessive.

**Table 2 Outcome of patients admitted to Gondar TFU**

| OUTCOME | % |
|---|---|
| Abandon | 31 |
| Cured | 59 |
| Dead | 8 |
| non respond. | 2 |
| total | 100 |

The reason for the very high abandonment rate has not been investigated. Elsewhere a high abandonment rate is evidence that the patients are not satisfied with the service been offered. In Gondar it may be more complicated because these disappearances of patients result in the patients not being billed for much of the stay. They may go prematurely to avoid payment.

The mean rate of weight gain for the discharged children is 7.2 g/kg/d which fails to meet the Sphere standards and will prolong the stay in hospital. It is likely that this prolonged stay and slow progress is likely to be the main cause of the abandonment. The corresponding rates of weight gain for the other groups of patients are: Abandoning: 7.9g/kg/d, Marasmus 8.8g/kg/d and Kwashiorkor 4.7g/kg/d.

There is a Professor on Nutrition in Gondar – Dr Melkie Edris. He is very engaged but seems not to be involved in the teaching or training of the students.

**Comment**: Although Gondar seems to be functioning satisfactorily in terms of mortality, questions remain about the quality of care because of the low rates of weight gain, very high abandonment rate and the quality of understanding of some of the junior staff. It is unclear why the understanding of the junior staff should be less than one would expect.

**Recommendations**: The introduction of a functioning OTP system in the region is very important. This will require retraining, ongoing evaluation, supervision and active support of the staff in the health centres and health posts. Gondar Hospital should be used as a referral centre for severe cases.

## *Debre Berhan hospital, Amhara*

**Figure 13 Debre Berhan OPD**

The management of severe malnutrition was introduced in Debre Berhan hospital in March 2006.

There are photocopies of the feeds and the WFH charts in the wall of the OPD (see in Figure 13). The photo shows the examination of the child. In the Paediatric ward, 2 children had recently been admitted. One had a drip and naso gastric tube (see figure 14). We did not have time to make further investigation but it was clear that the correct protocol

was not being followed and in-practice training is needed; this is important because the neighbouring College of Nursing uses this hospital complex for teaching.

**Figure 14 Child in the Paediatric Ward, Debre Berhan Hospital, May 2006**

Severely malnourished child with IV infusion plus NG tube. This was commonly seen in most MoH facilities that we visited throughout Ethiopia.

**Mother feeding a child with injera, hospital, May 2006**

This is again a typical picture seen frequently in all the facilities we visited. Children being given the mother's food or injera, frequently with a naso gastric tube in place. The child then refuses F100 but continues to take injera from the mother.

**Figure 15 Table used for the feeds with the photocopies of the feeds and protocol, Hospital, May 2006**

Volumes for 6 feeds were written in green using simple division for the amount of 6 feeds per day.

On our way to Tigray, we stopped (for 30 min) in a hospital where the treatment had been introduced 3 weeks previously. The data showed 12 cured children, 7 deaths (CFR: 28%), and 6 defaulters (abandonment rate: 24%). The nurse was desperately asking for more in practical training. There were many details that she needed help with such as how to prepare small quantities of F100 and F75; she was calculating the amount of powder in a very complicated and unnecessary way.

This not only confirms the necessity of ordering F75 and F100 in smaller sachets (for 500ml of additional water) and also to use the RUTF table for transition phase.

Recommendations:

1) It also will be good to have a collated record (database) that gives a rapid overview of all the visits that have been made, the action taken, and the contact people.

2) The people doing the implementation at hospital level should be clinical and capable of answering the sort of queries put by doctors and nurses.

3) There should be a “hot line” or “support line” so that people in facilities that get into difficulty and want advice about implementation can write, email, fax or telephone for support.

## *Dessie hospital, Amhara*

Dessie hospital introduced the treatment of severe malnutrition at the beginning of 2003 with the help of Concern. One year after, Mohamed Foh (UNICEF) conducted an “in

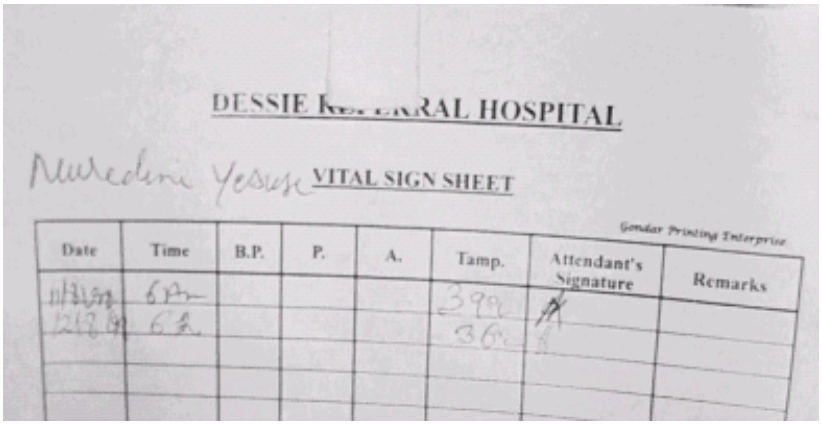
service training" at their request. The 2004 assessment report showed a need to improve the quality of care.

Samson Dessie (UNICEF) and Yvonne Grellety were received by the director of the hospital. He was not in favour of the programme. He complained about the additional workload on the paediatric ward, the lack of trained nurses and doctors and finally the lack of nutritionists. The hospital did not benefit from any renovation since it was built 45years previously. They were planning (hoping) to rehabilitate the paediatric ward the help of Concern and the Regional Health Bureau. His major complain was that the budget had been reduced by half in 2006. "My hospital is full" and we do not have the staff or resources for the patients.

In contrast, the matron was very happy and motivated with the programme and agreed that "there was a lot of benefit in running such programme". She told us that she assigned a person from the kitchen to prepare the feeds and they were giving six feeds per day (including at night). We were unsure why with 6 feeds there needed to be night feeds as the 6 feeds can be easily given during day time only.

The head of the paediatric ward seemed to be very motivated and was giving lectures on the protocol in the nursing school and the TFU. This was very positive, however, he himself had not been trained on the management of SAM. He had worked with SC-US in Yirgalem (which has never had satisfactory results).

**Figure 16 Vital signs forms at each bed of the children, Dessie Hospital, May 2006**




Outpatients department: The patients admitted to the paediatric ward were not checked properly. The scale used to weigh the children was an adult hospital scale and not a child scale. There were large discrepancies of weight from OPD and after admission.

Other services:

**Figure 17 The adult TB ward, Dessie hospital, May 2006**

Adults were not treated at all. There were malnourished adults in the TB ward; one with a MUAC of 135mm and many below 180mm. The matron stated that this problem was a major preoccupation of hers. There was a nice room for the ART programme well resourced with a data collector permanently collecting data. According to this person, patients on ART frequently were loosing weight and he wanted an urgent collaboration with the nutrition department. This was the case in all the hospitals we visited with the exception of Jimma. This lady will die without nutrition support; her ARVs will be toxic and ineffective; it is a humanitarian imperative to give to these patients the treatment that we know is effective, prolongs life and makes these patients active and caring parents once more.

**Recommendation**: that nutritional support be extended to malnourished adults (both with and without HIV). And that part of the budget allocated for HIV treatment be used to purchase and supply therapeutic foods (RUTF).

The accuracy of anthropometric measurements were not verified; this was because we spent time on other points such as the surveillance and monitoring and strengthening the link between the OTP and the hospital.

Feed preparation: because there were few children a tea cup was being used as a measurement. The preparations of the feeds were made in a special room. The recipe being used was:

1) F75: 6 buna cups + 1l of water 2) F100: 7cups and ½ + 1,25l of water. The origin of this recipe is obscure and its accuracy not verified.

There was no surveillance of the feeds intake of the children or their appetites.

No therapeutic products were missing and we thought that there was real progress compared to last visit. The storeroom was not visited.

There were no IV infusions, but most children had an indwelling cannula. This is a major problem in all the hospitals visited. A section should be written into the up-dated protocol to explain the reasons why cannulae use should be reserved for those few children where it is absolutely essential.

Monitoring: As elsewhere, both the multicharts and the standard hospital reporting forms were used (resulting in double documentation and excessive un-necessary work for the staff). The hospital number was not recorded on the chart or the registration book so that it was not possible to link the two sets of records if they became physically separated. Further, the OTP number was not recorded anywhere (notes, chart or registration book); the outcome of most children will thus be unknown in terms of the hospital records and report; all the children that are discharged and subsequently reported from the OTP sites will be recorded twice. The staff of the OTP also have great difficulty in determining the outcome of patients sent to the hospital, (unless they returned) – proper registration and numbering was not being used for referral slips. Nevertheless, at present, it was only possible from the OTP side to find out what happens to these children.

We had no way to know, at hospital level, if children were referred by Concern or SC-UK or were coming from another woreda where no programme exists. This is critical as children from the NGO woredas would be getting Phase 2 treatment when they returned to the OTP site. Those from the other woredas, who completed Phase 1 in hospital, were now being discharged with no Phase 2 treatment at all, no follow-up and no record of their survival or death. There was also no hospital registration number in the registration book.

**Comment**: if there is such difficulty in communication and coordination between well resourced, dedicated and focused NGO and the local referral centre whose operation has been established and procedures directed by the same NGO then the chances of a smooth operation within the MoH using the same procedures is remote. The present system of recording and reporting as used by the NGO cannot be used nationwide.

In contrast to research projects run by NGO where charts are usually carefully filled in and preserved, it is normal to find, at service level, that individual charts “go missing”. This is one of the reasons for having a registration book so that the basic details of all admitted patients can be analysed. Of more importance, children that die normally have their charts gathered together, as these children will no longer require clinical services their charts are frequently regarded as “finished” by the staff. Such “dead charts” are more likely to “go missing” than the ones for children who did not die. This often leads to grossly inaccurate reporting of mortality and other outcomes if there is not a complete record kept in the registration book.

Small beds were used in the paediatric ward, where mothers had to sit on a chair or on the floor near the cot of their children; further the SAM children were not separated but were mixed with children who had other conditions. This organisation did not facilitate the management but there are plans to move the SAM children in two months time to 2 rooms reserved for SAM.

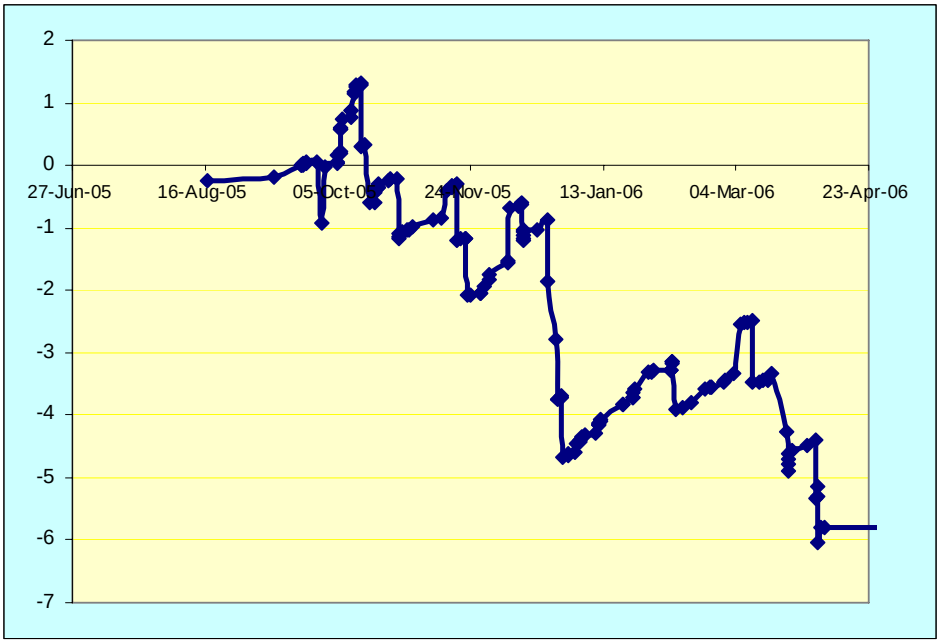
The following table gives the observed to expected death rate in Dessie Hospital if the standard WHO (1999) protocol were applied. It should be emphasised that with the Ethiopian Protocol about half this number of deaths should be seen.

**Table 3 Risk of death, Dessie hospital, May 2006**

| Oedema | Case Fatality Rate % | Expected fatality rate % | N |
|---|---|---|---|
| None | 13.7 | 8.7 | 68 |
| 1 | 5.9 | 12.8 | 17 |
| 2 | 5.5 | 5.1 | 18 |
| 3 | 12.5 | 5.2 | 48 |
| All | 11.4 | 7.6 | 151 |

The actual death rate is much higher than expected (150%). This is not a good result. It is however, not surprising given the quality of care. The graph shows the cusum of the expected minus the observed deaths from Aug 2005 to May 2006. Since Oct 2005, the mortality was unacceptable until Jan 2006, From January until Mar 2006 there was an improvement. Following this there was again an excess mortality. It was not clear during our visit what changes had occurred from Jan to Mar 2006. Usually, we find that such dramatic changes in mortality are related to turnover of staff and changes in attitude by the staff. We have no reason to believe that this is the case here in Dessie. Nevertheless, we recommend that UNICEF and RHB should try to identify the changes that happened in these periods and discuss the data with the matron, the head nurse, the doctors in charge and the Director of the hospital, to demonstrate to them the effect of changing organisation on whether their patients live or die. They could also be shown the graphs obtained from Jimma, Kombolcha and other centres that are getting good results. This should not be done in the form of a criticism, but rather to encourage the staff to up-grade their care and eliminate bad management practices.

**Figure 18 Cusum of mortality, Dessie hospital 2006**




**Comment**: Dessie hospital should be getting better results, especially with the presence of NGO that are referring the patients to this hospital. It is important to determine the reasons why the results are so poor so that the causes can be addressed here, elsewhere and the lessons learnt entered into the National Protocol.

## *Yirgalem hospital TFU, SNNP*

Yirgalem hospital serves the area where the majority of the OTP sites and HC/TFU are/were managed by SC-US; Boricha woreda has a HC in Yirba where there is in-patient care; it is close to Yirgalem hospital. The doctors at Yirgalem report that a lot of children are sent to their hospital in very bad condition and died at or soon after their arrival (see below).

Structures:

**Figure 19 Yirgalem TFU, May 2006**

Since Feb 2006, SC-US was responsible for the TFU new building at the hospital. This structure was built with the objective of being a training centre. Only two children were in this huge structure when we visited. The unit is a separated building, 50 meters from the paediatric ward. It is not clear how often the paediatric nurse or doctors actually visit the TFU.

Human resources:

The matron head nurse was very concerned by the programme and had assigned 3 health assistants to the TFU to manage all the routine care. It was integrated into the hospital's structure. The nurse in charge in the paediatric ward, recently graduated from her nursing school, was trained on the management of severe malnutrition. The doctors had trained in Gondar paediatric ward hospital and had recently graduated from Gondar University. They were clearly demoralised because of the high death rate in the TFU.

Monitoring and evaluation:

**Figure 20 Aid nurse in charge of the TFU & the storage of the charts, Yirgalem TFU, May 2006**

All the multicharts were kept by alphabetic order. We took a photo of the filled registration book pages and then entered the data in the computer. The charts did also not have any information about OTP numbers, health centre reference number, referring agency or even the OTP site that the patient came from. It was impossible to link the multicharts with the HC TFU or with the OTP charts. It was even impossible from the multichart to determine the date the child came to the hospital and whether he/she was admitted with the HC chart. There was no indication on the charts, the only source of information was the date of admission in the registration book of the hospital.

**Figure 21 Table for the preparation of the feeds, Yirgalem TFU, May 2006**

Admission criteria:

Of a total of 45 children, 24 were severely wasted: 20 of them had a MUAC<110mm (of whom only 8 had a WFH<70%), 2 had a WFH<70% with a MUAC>=110mm; 2 had a MUAC and WFH more than the criteria of admission. The rest of the children (n=21) were oedematous cases.

Risk of death:

The risk of death was again calculated using the Prudhon index. It shows that there were three times as many deaths as expected. The case fatality rate was 31%, which is the highest we have recorded in Ethiopia. From the registration book it appears that 26 of the 45 had been transferred from the HC TFU (57.8%). Unfortunately we were unable to find out 1) how long they had been in the TFU/OTP before they were transferred, 2) the date of the "transfer in" to the hospital or 3) the clinical condition of the child on arrival. However, if we look at the time death occurred, only one child died the first day of admission, another one the second day of admission, and the rest later after admission (if the day of admission entered on the TFU registration book is the day of admission to Yirgalem hospital?).

Six came from Yirba HC, 9 came from Leku HC and 4 from other centres (Sidama)

Fourteen of the children died; seven of them were referred from TFUs HC (2 from Yirba, 2 from Leku and 3 from the other HC). Three from the HC abandoned the hospital. It was not possible to find out what happened to these children. We did find out that about half of these children were first admitted to OTP, then went from OTP to HC and were sent to the hospital.

The management in Yirgalem hospital is illustrated by the graph of the cusum of expected – observed deaths and shows the continuous excess deaths throughout the period of observation. There situation was not so catastrophic between October 2005 and February 2006; from February 2006 most of the deaths occurred. It appears that this increase in mortality rate coincided with the change in medical staff at the hospital.

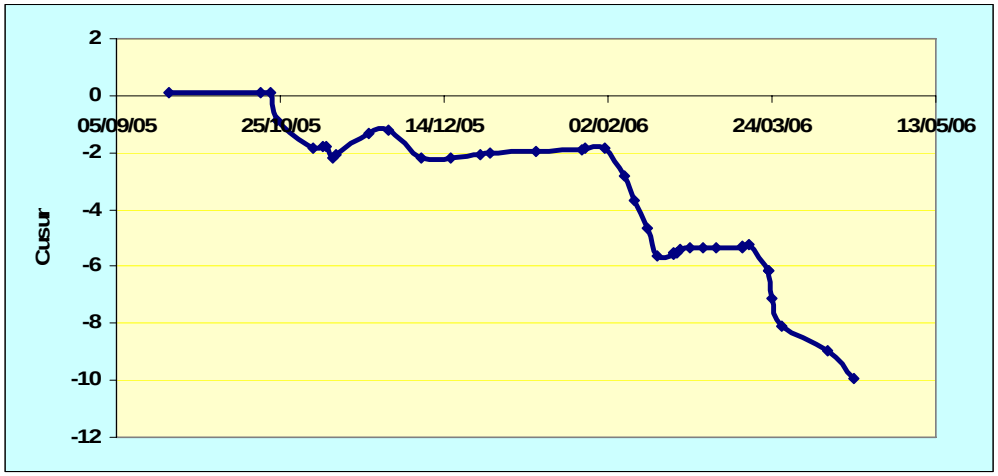
The rate of weight gain of the cured children is 15.6g/kg/d +/-6.7g/kg/d. This is a very satisfactory rate of weight gain and shows that the nutritional part of the treatment (by the nursing assistants) was very satisfactory.

The length of stay is 27+/-12.2days. Children were not returned to the OTP for continuation of phase 2 – once they entered the hospital their total care was by the hospital.

**Table 4 Yirgalem TFU observed and expected deaths, May 2006**

| Oedema | Obs. death | Exp death | Obs. Death rate % | Exp death rate % | N |
|---|---|---|---|---|---|
| No | 7 | 4 | 29.2 | 16.5 | 24 |
| 1 | 1 | 0.1 | 50 | 4.2 | 2 |
| 2 | 1 | 0.6 | 16.7 | 10.5 | 6 |
| 3 | 5 | 0.4 | 38.5 | 3.2 | 13 |
| All | 14 | 5 | 31.1 | 11.1 | 45 |

**Figure 22 Yirgalem TFU cusum of mortality, May 2006**




**Comment**: It is clear from out observations that the record keeping in the hospital was sub-standard and that the knowledge of the medical staff on the management of SAM was

inadequate; this lack of medical understanding of SAM was probably the cause of much of the excess death rate.

Nevertheless, the question arises as to whether the high death rate is due in part, as the doctors claim, to children being transferred in very bad condition, having been kept in the OTP too long or having been inappropriately sent to OTP and then transferred to the hospital in a moribund condition having deteriorated significantly under OTP care. The data as far as we could determine would support this point of view although the children died a few days after admission. In view of our finding in Fadis/ Bushulo, it is very likely that inappropriate referral or retention in OTP was part of the reason for the massively high mortality in Yirgalem hospital (one third of children died – and the mortality was about 6 times as high as in the better centres in Ethiopia). We later found (in Niger in November 2006) that this problem is a general problem with OTP training and a common cause of an exceptionally high mortality in the TFUs (were up to 60% of deaths occur in children first admitted inappropriately to OTP).

There is another more important point. Whatever the reason for the problems with Yirgalem and whether they are directly related to the training of these doctors, it emphasises the critical role that universities and other teaching institutions play in determining the quality of care in the health structures of Ethiopia. Each year graduates are released to treat the desperately ill of Ethiopia, often in district hospitals and frequently working without senior supervision. It is essential if the management of SAM is to be institutionalised that every doctor is properly trained before they graduate. If the pre-service training is not adequate, the in-service quality of care will always be poor. This again emphasises the critical importance of involving the Ministry of Education and of having a mechanism to automatically adjust the curricula when new policies or guidelines are introduced by the Ministry of Health.

It is clear that there was no effective co-ordination between the hospital and the HC or OTP programs, despite the fact that the whole treatment was meant to be under the auspices and support of a NGO. If this cannot be achieved with a focused, well resourced NGO then it is unlikely to function as needed within a health service that is not focused upon SAM but upon all the other diseases and programs of the population.

It is unfortunate that the quality of record keeping and the lack of a link between the OTP, HC and hospital data do not allow an unequivocal and accurate over-view of the total quality of care in the woredas under consideration. To get this information would require visiting every OTP site, HC and hospital, getting all the records without having any missing data, and being able to examine the course for each child. This would need a lot more time than we had at our disposal, and it may well be that the quality of the records is such that the true data for this period could never be determined.

### *Busholo hospital, SNNP*

Sister Isabelle was here during our visit. She usually had children referred by Goal. These children, she said, were refusing to eat the RUTF and much preferred F100. This is the first report we have had of such preference by a large number of children. It may be related to self-selection of the children who in the OTP program would not, for one reason or another, take the RUTF. It should be recognised that such children do occur and different treatment has to be offered if they are to recover. She has not tried them with BP100, which

would be an alternative RUTF for those children who refuse to take the Plumpy'Nut. She was doing studies on zinc and selenium in malnourished children.

### *Butajira hospital, SNNP*

Two visits were made in Butajira hospital; in the first visit, we met the director of the hospital who was acting director and the head nurse of the hospital during the second visit.

The previous director had been trained on the protocol. He left the hospital and had been replaced two weeks before our visit by an acting director who is a pharmacist and knew little of SAM. No doctor was assigned to the unit and the nurse in charge was on holidays.

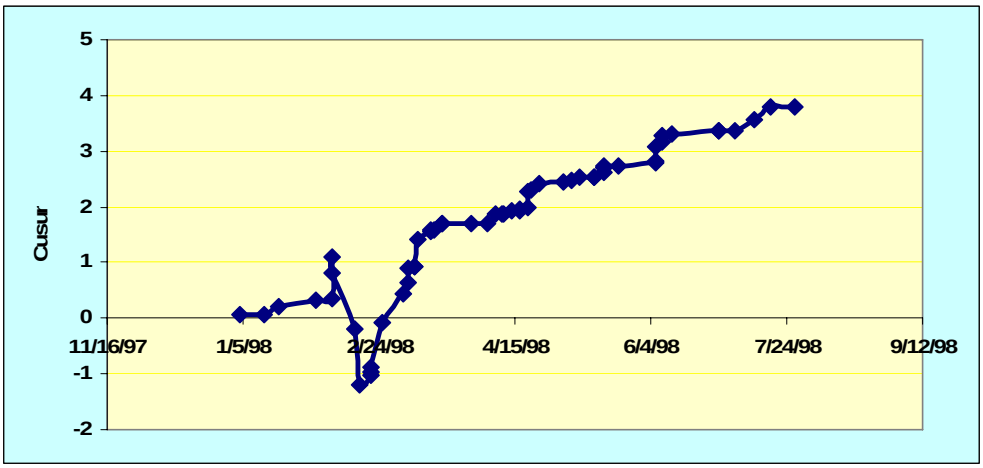
Two training workshops took place: 1) a theoretical training in Oct 2005, conducted by Juan Carlos Martinez Bandera (UNICEF): 12 health professionals assisted in the 2 days training: the different subjects such as the protocol, charts and reporting were addressed. 2) Rebekah Demelash (UNICEF) came back and met with a woman doctor who was doing a good job. The TFU was running well and the analysis of the records of this period, as was reported by Rebekah, supports this quantitatively. The table below shows that the observed death rate (WHO 1999) was less than half the expected death rate. This is excellent and what is expected with the proper application of the 2004 Ethiopian protocol. The cusum graph confirms this and shows a steady upward slope from inception (Ethiopian calendar), with a aberration in the data for one week around the second month of 1998 – the reason for this is not clear.

At any rate, over the period of the data the staff was clearly doing a good job – then everything changed.

**Table 5 Butajira TFU observed and expected deaths, May 2006**

| Oedema | Obs. death | Exp death | Obs. Death rate % | Exp death rate % | N |
|---|---|---|---|---|---|
| No | 1.3 | 2.7 | 5.4 | 11.2 | 24 |
| 1 | | | | | 0 |
| 2 | 0 | 2.5 | 0 | 13.1 | 19 |
| 3 | 1.3 | 1.2 | 8.7 | 8.0 | 15 |
| All | 2.6 | 6.3 | 4.5 | 11.01 | 58 |

**Figure 23 Butajira hospital TFU cusum of the expected – obs deaths, May 2006**




However, these were the only data we could collect from the registration book.

During the first visit, we saw the store room where all the products and material are kept and during the second visit that we were able to meet the nurse in charge and the matron.

We advised the matron that the rotation of staff can have dramatic consequences if untrained staff is put in charge of the TFU.

**Figure 24 Butajira TFU, with non-trained nurse, May 2006 (all the trained nurses had been assigned elsewhere)**

**Figure 25 Butajira multichart, May 2006**

At the time of our visit the charts (see figure 25) were not filled in except the daily weight (which were not plotted). It was impossible to know which treatment a child received. The next photograph shows how the feeds were delivered; the previous feed had not been taken so the feeds simply "mounted up" without any encouragement of the patients to take the feed, or any record being taken.

There is a real need that the RHB come to discuss the problem with the director of the hospital and the matron, because all the surroundings have critical rate of severe malnutrition and there is a real need to have a good reference hospital.

**Comment**: this again shows how the change of a matron or hospital director can destroy a service that is functioning well. The service in Sodo hospital which at one time was exemplary collapsed with the change in Director. It is critical that the care of the SAM patient becomes part of the job descriptions of the hospital staff and that they are assessed upon this aspect of the care of their patients.

**Figure 26 Cups of milk from 2 different feeds**

**Figure 27 Typical patient in Butajira hospital – May 2006**

UNICEF is clearly not able to intervene every month to retrain every body and retrain staff every time they are rotated. The contrast between the care and interest given to patients with HIV and those with SAM, at a grass roots level is quite marked and needs to be understood and addressed. Training alone is not the solution, but there needs to be a person in authority who takes responsibility for the unit. The NGO should not intervene directly and conducted re-training again and again, because this is a chronic problem and it needs to be tackled by the authorities at Zonal and RHB level with the support and collaboration of UNICEF. The subject must be made "interesting" by teaching the pathophysiology etc. at pre-service level. It is important that Butajira hospital is able to treat SAM because there are a lot of children in very bad condition (see photograph of a typical child from Butajira ward) who are unable to be treated in OTP or HC TFU.

### *Goba hospital, Bale region, Oromia*

The only training was undertaken by UNICEF 2 years ago. The hospital is near the nursing school. In the registration book, they admitted only 28 SAM patients over 8 months. Again we found a need for continuous in-service training in conjunction with the nursing school. There was no special registration book for severe malnourished children, no SAM patients were in the hospital at the time of our visit. They were using F75 and F100 as we saw the products in the nursing room. We could not find any guidelines, wall charts, look up table or other aids used in the treatment of SAM with the exception of the F75 look up table, which was hanged on the wall.

Concern gave RUTF to the hospital according to the director and they were training the surrounding HC and health station on OTP programme. It appears that they only wanted the hospital to take care of referred Phase 1 children who needed 24h care. It is unclear

what training had been given for the in-patient management of SAM children and whether it was appropriate or not.

**Comment**: If guidelines are given then they seem to disappear with each staff rotation and quickly the service has no written information upon which to guide the treatment of SAM patients. It is critical that the information is also presented in the form of wall charts and posters that are hung on the wall of the each of the nurse's, doctor's and treatment rooms. Whether they are read and followed is another matter.

## *Bissidimo hospital, Oromia*

We visited Bissidimo hospital in order to see if the TFU was still functioning. This was because most of their patients used to come from the area around Fadis and Goal had started an OTP program to cover this whole area. The data were photographed from the registration book and subsequently entered into the computer and analysed.

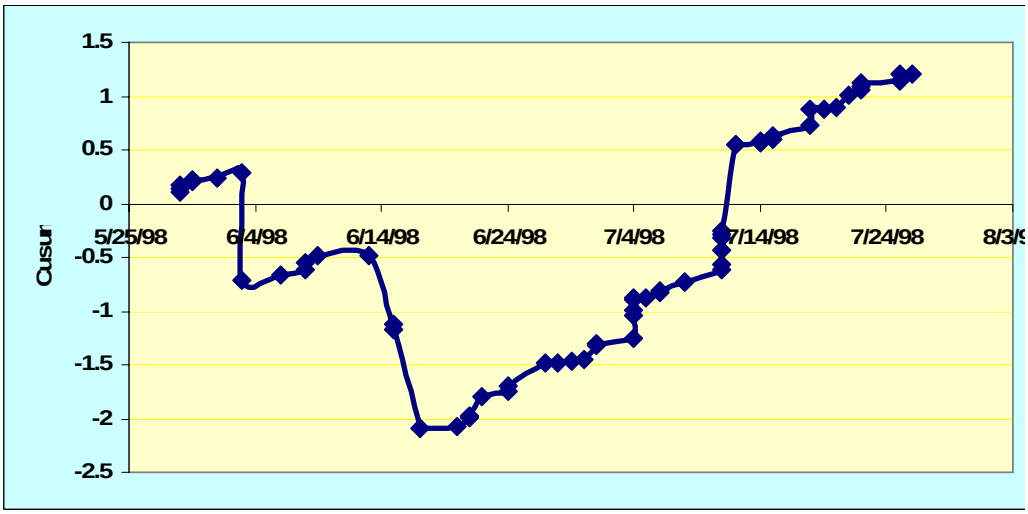
We met briefly with the previous director of the hospital who was in the first training in Jijiga. He was no longer the director but was in charge of the TFU. We met the nurses and the staff of the TFU who recognised us from our previous visit, there was little turnover of staff. In Bissidimo they had not changed for several years. It was a great pleasure to see them if only briefly.

The table shows that there are fewer deaths than expected; the quality of the treatment in Bissidimo has been maintained throughout the years.

**Table 6 Bissidimo hosp, TFU Observed % expected deaths, May 2006**

| OEDEMA | OBS. DEATH | EXP DEATH | OBS. DEATH RATE % | EXP DEATH RATE % | N |
|---|---|---|---|---|---|
| NO | 1 | 2.9 | 4 | 11.5 | 25 |
| 1 | 0 | 0.9 | 0 | 6.3 | 14 |
| 2 | 1 | 0.5 | 5.9 | 2.8 | 17 |
| 3 | 1 | 0.08 | 14.3 | 1.2 | 7 |
| *ALL* | *3* | *4.3* | *4.8* | *6.9* | *63* |

**Figure 28 Bissidimo TFU, Cusum of the expected – observed deaths, May 2006**




The graph shows that there were two excess deaths in the early weeks of 6/98 and since then has been a steady increase. Unfortunately the graph is not based upon a great deal of data. Nevertheless, it is clear that the results remain objectively good.

**Figure 29 Bissidimo TFU, May 2006**

**Figure 30 Child escaped from OTP the day before, May 2006**

The mothers were very happy to see us. We were surprised to see still so many admissions in the TFU, which was functioning as before.

I thought that the TFU will be closed because Goal had opened both an TFU and OTPs sites in Fadis. The doctors explained that shortly after they opened the OTP program there was a slight diminution in patients coming from the Fadis area, but this was very short lived and the numbers of admissions quickly returned to the previous number.

The child in the photograph above was admitted to Bissidimo shortly before our visit. He had been in the OTP program at Fadis for 3 visits (2 weeks); at each visit he was sent home with the ration of Plumpy'Nnut. The child did not have any of the classical IMCI type signs of acute illness. The mother decided that the child's treatment was inappropriate and so she herself crossed the valley to Bissidimo. This is NOT an isolated case (although we happened to be there and took this photograph for this particular admission). A similar story was told by many of the patients already in the ward and this was confirmed by the Doctor in charge of Bissidimo.

The staff of the Goal TFU had been ordered to stop treating the children in the TFU (called a "stabilisation centre") after a maximum of 7 days in the TFU notwithstanding the choice of the mother.

**Comment**: This example is very worrying. It shows that the OTP programs and associated TFUs (stabilisation centres) are being run in a dogmatic way, without regard to either the clinical state of the children, the actual needs of the children or the choice of the mother. If there was not a convenient hospital with a reputation for giving good treatment for the malnourished in the vicinity then these patients would not have had access to appropriate treatment despite the running of a full OTP program in their area. During one of the first evaluations of an OTP program in Darfur (before the present war) run by SC-UK, a similar situation arose. No program was mounted in Fashir the local town, as it was assumed that

malnutrition was a rural problem and that the patients would prefer to be treated at home (as indeed, most do). The TFU is Fashir Town was full of patients coming from the very areas where the OTP program was in operation. The patients admitted to the TFU were much worse clinically than those admitted to the OTP program. So much so that the expected mortality in the OTP program (assessed in the same way as in this document – the Prudhon index) was very low and that in the TFU around 10%. It is one of the stated aims of the OTP program to "get the children early before they get complications". This is laudable; however, it is quite inappropriate to impose this treatment on patients that are much more severely ill. They do not usually show the classical IMCI complications, but are usually relatively anorexic. The failure to introduce a proper systematised appetite test is the main reason for these problems.

## *Chiro hospital, Oromia*

Chiro hospital was using RUTF in Transition Phase in order to see their results and to demonstrate, by collecting the data, that RUTF could be used in transition phase as well as F100. The children that we examined seemed to be taking RUTF in Transition Phase satisfactorily.

In fact the in-patient facility was full of children. We met the nutritionist engaged by IMC to look after the children in the ward collaboration with the hospital nurses and doctor. During a ward round there were 12 children with very severe malnutrition (see photo) and one case of Pott's disease and one with ascitis (probably TB).

**Figure 31 Some very severe children in Chiro hospital**

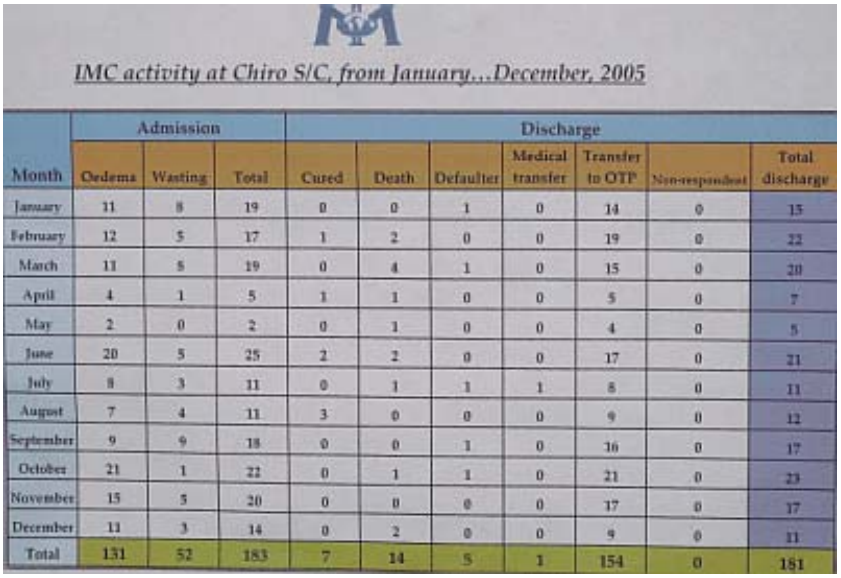
We asked to analyse the data of 2005 to be able to see their results in terms of in patient care but again only during the in-patient period but without the possibility of analysing the complete treatment. We borrowed the charts to enter the data into the computer, however, there appeared to be several charts missing.

**Table 7 Chiro hospital TFU, observed and expected deaths, May 2006**

| Oedema | Obs. death | Exp death | Obs. Death rate % | Exp death rate % | N |
|---|---|---|---|---|---|
| 0 | 4 | 4.2 | 10.8 | 11.4 | 37 |
| 1 | 1 | 0.2 | 50.0 | 11.2 | 2 |
| 2 | 4 | 1.6 | 18.2 | 7.2 | 22 |
| 3 | 5 | 0.9 | 12.5 | 2.3 | 40 |
| unknown | 0 | 0.0 | 0.0 | 0.2 | 1 |
| All | 14 | 7.0 | 13.7 | 6.8 | 102 |

The registration book records 14 deaths; from the anthropometry/oedema one would have expected 7 deaths. The wall graph showed that there were actually 14 deaths were out of 181 discharges (note that the Prudhon index predicts that with the WHO protocol we would have expected 7% mortality which is lower than the analysed mortality – with the Ethiopian protocol we would expect about half this number of deaths). The discrepancy is clearly related to the number of missing charts. If the actual number of discharges is 181 and the missing charts have the same risk of death as the charts that are present then, we would expect 13 deaths and observed 14. This mortality rate is the same as that predicted if the WHO protocol is used and about twice that seen in the better centres in Ethiopia where the Ethioian protocol is being used.

**Figure 32 Activity at Chiro TFU in 2005**



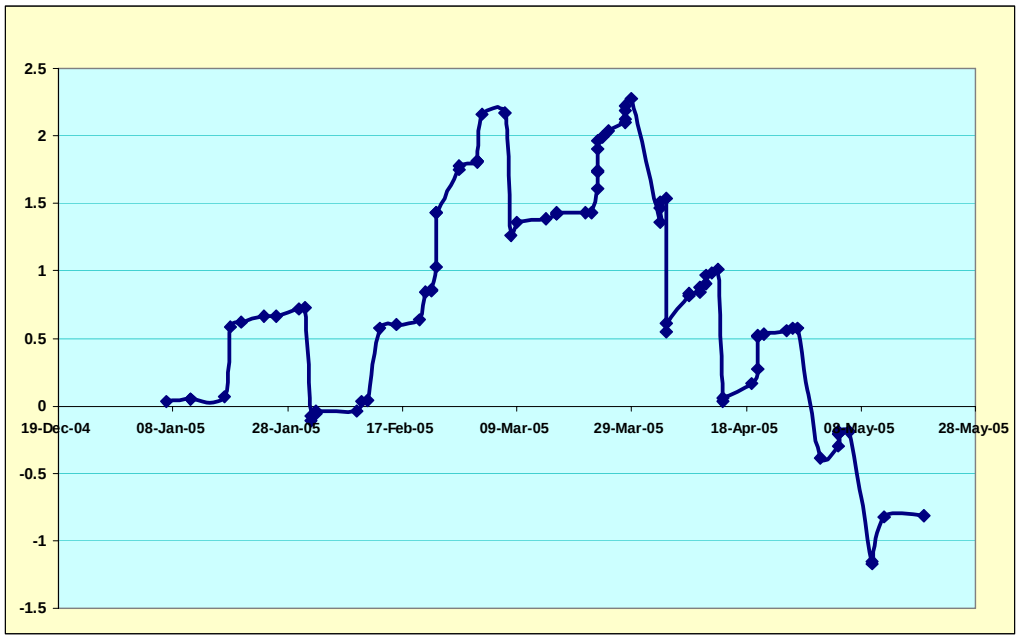
*IMC activity at Chiro S/C, from January…December, 2005*

| Month | Admission | | | Discharge | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Oedema | Wasting | Total | Cured | Death | Defaulter | Medical transfer | Transfer to OTP | Non-respondent | Total discharge |
| January | 11 | 8 | 19 | 0 | 0 | 1 | 0 | 14 | 0 | 15 |
| February | 12 | 5 | 17 | 1 | 2 | 0 | 0 | 19 | 0 | 22 |
| March | 11 | 8 | 19 | 0 | 4 | 1 | 0 | 15 | 0 | 20 |
| April | 4 | 1 | 5 | 1 | 1 | 0 | 0 | 5 | 0 | 7 |
| May | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 4 | 0 | 5 |
| June | 20 | 5 | 25 | 2 | 2 | 0 | 0 | 17 | 0 | 21 |
| July | 8 | 3 | 11 | 0 | 1 | 1 | 1 | 8 | 0 | 11 |
| August | 7 | 4 | 11 | 3 | 0 | 0 | 0 | 9 | 0 | 12 |
| September | 9 | 9 | 18 | 0 | 0 | 1 | 0 | 16 | 0 | 17 |
| October | 21 | 1 | 22 | 0 | 1 | 1 | 0 | 21 | 0 | 23 |
| November | 15 | 5 | 20 | 0 | 0 | 0 | 0 | 17 | 0 | 17 |
| December | 11 | 3 | 14 | 0 | 2 | 0 | 0 | 9 | 0 | 11 |
| Total | 131 | 52 | 183 | 7 | 14 | 5 | 1 | 154 | 0 | 181 |

The table shows the observed deaths and the calculated expected death rate from the Prudhon index by degree of oedema.

The Cusum analysis shows that the mortality has not been evenly distributed throughout the time period. At the beginning there were fewer deaths than expected but from the third to fifth month there were more deaths than expected. This type of analysis should be related to the changes in the organisation and staff present at the centre. In particular it would be important to determine when the protocol was changed from using F100 in Transition Phase to using Plumpy'Nut. If this change were to correspond with the change in mortality experience it would require to be confirmed elsewhere, or by changing the protocol back and observing if the trend changed direction. However, these statements have to be taken with caution because of the missing data in the analysis.

**Figure 33 Chiro hospital TFU, Cusum of the expected – observed deaths by time, May 2006**




The TFU was bright and clean, the diet appears to have been made up correctly. The patients in the facility appeared happy and we were very pleased to see some fathers with their children. There were mosquito nets, no drips and it appeared as if the protocol was being followed.

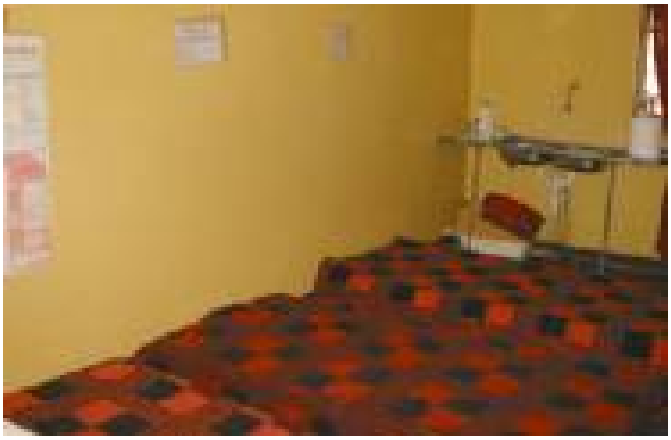
**Figure 34 the clinical TFU at Chiro hospital**

### *Dire Dawa Regional Health Bureau*

We met the regional health bureau and the head of the RHB. She was very happy about the progress made on the implementation of the treatment of severe malnutrition in Dire Dawa region with the help of Care International. They implemented the treatment in Arbalent Rural Kebele HC and also opened an SFP with community mobilisation. The admission number was 500 which exceeded the anticipated number of 300. There was a close referral link between the hospital and the HC although separate numbers were being used. She recognised that it would be good that the child suffering from severe malnutrition had a unique number to allow good follow up.

### *Dire Dawa hospital*

**Figure 35 TFU near the paediatric ward, Dire Dawa Hosp, May 2006**



The picture shows the TFU which was not being used at all because of a shortage of staff during the night and holidays. Although there is a nice room for severely malnourished children, the patients are all in the paediatric ward intermingled with the normally nourished sick children. In the paediatric ward the correct protocol was not being implemented. The next picture shows a child with F100 mixed with BP100 being infused through an NG tube. In the following picture is a child with a NG drip of F100 and an intravenous infusion of normal saline (the reason for this infusion was obscure even if there had been a misdiagnosis).

**Figure 36 Feeding drip of F100 mixed with BP100**

**Figure 37 Mother with a child in a cot, a IV and feeding drip, Dire Dawa Hosp, May 2006**

The children were not permitted to stay for more than 7 days in the hospital no matter their clinical condition.

Fortunately, one person from the RHB was with us during this visit and understood that an updated in service training was needed.

The tools like registration book and multi-charts were missing.

Anwar, the UNICEF nutritionist, had not visited the centre for one year largely because of the Gode emergency and also because he thought that Care international would be able to oversee all aspects of management satisfactorily.

In conclusion, the programme was implemented because of the help of Care international proposal but there is still a lot of improvement to be made for in patient care with a close follow-up of the Phase 1 complicated cases. The help of the regional bureau with the close collaboration of the staff of the hospital should make quickly a big difference and I must say, I would like to congratulate the RHB team for their motivation and willingness to improve the care of the malnourished children. More frequent visits and close collaboration with UNICEF team is clearly necessary with in service training.

However, the present practices within the hospital are completely unacceptable. It is not appropriate to have a non-clinical person doing the training and supervision of hospital clinical assessment and procedures. It is completely unacceptable to impose a rule for a completely arbitrary length of stay on the clinical staff of Dire Dawa Hospital. Indeed, in our view the imposition of a 7 day limit on the in-patient stay is unethical. Imagine a desperately ill moribund patient being thrown out of hospital to their own devices because someone has set this as a "policy".

## *Mobile clinics in Gode, Somali*

We were not scheduled to visit the mobile teams however we managed to fit it into the time available. In Denan we visited 3 children who were being followed using MUAC measurements. We found the children, but they did not appear to be malnourished and had MUAC values of >110mm. The registration book was not with the mobile team and we had to wait until the day before our departure to check the children in the registration book.

The criteria of admission was: MUAC<110mm for children>= 6months of age or presence of oedema; the criteria of discharge was up to 15 - 20% gain of weight. Ten of 33 children (30%) were reported to have had oedema. It is possible that this was exceptionally mild oedema, however, when we visited the household of a child just admitted to the program on the basis of oedema the child did not have oedema. There seems to be a problem with the clinical assessment of oedema. This is something that is not easy to teach in the classroom – the nurses and assistants have to actually examine children with unequivocal oedema (a common problem with surveys is over-diagnosis of oedema when none has been seen during training).

From the registration book, there were only 33 beneficiaries admitted. The table below shows an average Rate of Weight Gain (RWG) which is very high with a high Standard Deviation (SD) and Standard Error Mean (SEM).

**Table 8 RWG, Length of stay, Pct of weight gain, children 6 to 59 months, Mobile teams, Gode, May 2006**

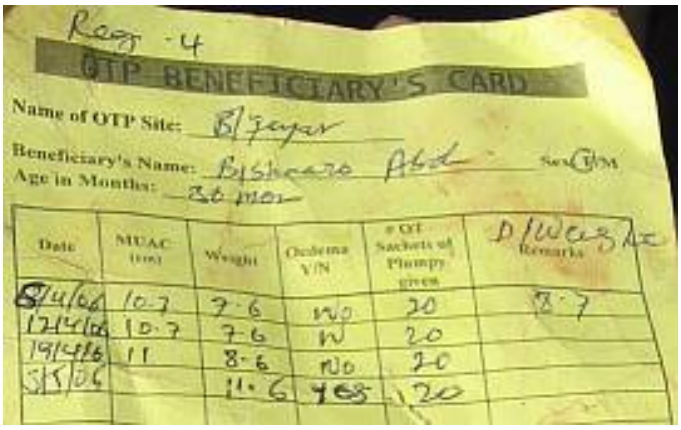
| | OED | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| RWG | No | 15 | 107.0g | 68.8 | 17.9 |
| | Yes | 3 | 64.3g | 22.4 | 12.9 |
| Length of stay | No | 15 | 25.7d | 3.4 | .9 |
| | Yes | 3 | 21.0d | 7.0 | 4.0 |
| % of weight gain | No | 15 | 8.3% | 3.8 | 1.0 |
| | Yes | 3 | 6.7% | 2.1 | 1.2 |

The reported rate of weight gain amongst all the children were clearly in error when we calculated the rates from the registration book: 8 of 33 (24%) were more than 100g/kg/d, a further 7 of 33 (21%) were more than 50g/kg/d; only 11/33 (33.5%) had rates of weight

gain less than 50g/kg/d – but the values were still biologically impossible. The data were clearly simply wrong. The reason was not determined. The 3 children visited at home did not have any oedema and had a MUAC>110mm – they should not have been admitted to the program.

According to the RWG and the home visit, we think that the data are of such poor quality that they cannot be relied upon. Inflation of the numbers admitted by taking non-malnourished children into the program has the effect of artificially lowering the mortality rate, and increasing the cure rate and the size of the program.

**Figure 38 A child who "jumped" from 8.6 to 11.6 kg and developed oedema (on examination there was no oedema)**




## *Gode Hospital, Somali*

We did a round ward with the Doctor newly in charge of the TFU. The doctor and the team were complaining about the lack of space in the TFU. They requested UNICEF to give funds to build a completely new TFU outside the paediatric ward.

In fact, the number of patients in the centre were inflated by wrong admissions, according to the registration book 20% (15/76) of the children admitted with a diagnosis of SAM were not malnourished a further 12% had missing data. We checked the heights of several children and found them to be in error, so that if the measurements had been taken correctly there would have been even more wrong admissions. If only correct admission had been taken into the ward then there would have been plenty of space. In fact the other ward of the hospital (photograph) were completely empty. On the other hand the water used for making up the feeds was heavily contaminated and taken from an open water source.

**Figure 39 One of 4 empty rooms in Gode hospital**

**Figure 40 The water in Gode hospital – used for making up the feeds**

**Figure 41 Gode TFU, weighing a child, May 2006**

**Figure 42 Gode TFU, the severely wasted child and the mother holding the other healthy child, May 2006**

The charts were used but the daily weights were all rounded to the nearest kilogram. We then checked the children' height/lengths: one child had a 66cm length on his chart and when we took the measurements again, we found 61.5cm only (he was able to be discharge the same day) One child with a recorded MUAC of 110mm was actually 135mm. Two children said to be oedematous, but they did not have any oedema.

The data in the hospital were mainly wrong. Thus the false admissions recorded in the registration book could easily be doubled because of the inaccurate measurements recorded in the book and charts.

There were no deaths in the registration book, neither on the charts.

The data were not worth entering into the computer for analysis.

The water used to prepare the F100 was not boiled or chlorinated: it was taken directly from the river and was filthy.

Phase 2 F100 was simply suppressed from the protocol, only Transition Phase and Phase 1 were kept with 8 feeds each. Phase 2 was suppressed because they wanted to have only 8 feeds per day as the standard regimen. Iron was added to the F100 using 2 tab instead of 1 tab per sachet in the Transition Phase. F75 was diluted using scoops. F100-diluted was wrongly diluted.

Children were given ReSoMal if any diarrhoea no matter whether they had lost or gained weight. When we observed the feeds, we saw the F100 was partly given for the SAM children and the rest for the many normal children that accompanied the mothers. One mother fed and nursed her normal child whilst neglecting the severely malnourished one (see photo). The mothers did not have any water to drink and had to buy it. Children were

not put in any order with the sick ones in Phase 1 mixed with the normal accompanying children and the recovering ones. We advised them to use the basin to weight the sick children.

Comments:

The mobile team needs to be supervised at actual field level. There seems to be a problem with both the identification of oedema and also taking anthropometric measurements (MUAC, weight and height) by both the mobile team and by the hospital staff. This has resulted in a gross inflation of the numbers of patients reported as being malnourished.

Nevertheless, it is important to be able to react as quickly as possible for nomadic population as the nutritional status in such peoples can change very quickly. We know that SAM in nomadic population is not as lethal as in non Sahelien countries. This may be partly explained by the different body habitus of the ethnic groups that live in the Sahel, particularly marked in the Dinka and Nuar, but probably also present in the Somali and other ethnic groups from such geo-climatic regions. Oedematous malnutrition is rare in such regions and when it occurs it is usually very mild oedema without skin lesions. The major problem in the hospital, as it is for the families, is water and the need of water and one advantage of the RUTF is that it allows small children to differentiate their thirstiness from their appetite which is not the case for F100. RUTF should be used in preference to avoid thirsty children to drink more F100 instead of water when they are too young to differentiate thirst from appetite.

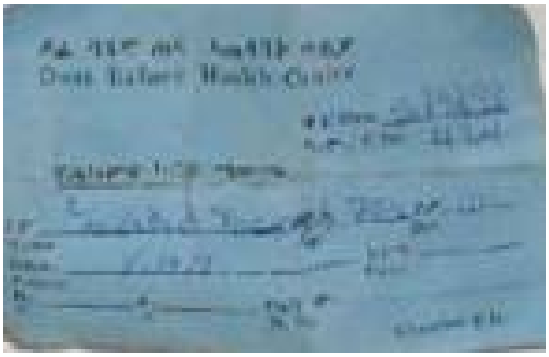
### *Boricha OTP, SC-US, SNNP*

SC-US has 5 feeding programmes in Lamfro, Dalocha, Konso, Hula and Boricha woreda with associated health centre-TFU (except Darara HC-TFU is not functioning). We visited the HC at Yirba and one of the OTP sites with the help of Dr Hailu Tesfaye, the supervisor of SC-US in SNNPR.

Yirba is the administrative centre of a feeding programme run by SC-US with screening, community mobilisation, out-patient care in 12 OTP sites and in-patient care in the HC of Yirba. Severe cases are transferred to Yirgalem Hospital. There is also an SFP to complete the blended food distribution undertaken by DPPB for the EOS/TSF programme.

Community mobilization and screening

**Figure 43 Screening Card given to the patient for referral, SC-US, May 2006**



James Lee from Valid International was conducting an evaluation on the social mobilisation undertaken by SC-US. They have mobilised, since January 2006, around 5000 persons within the community. Community Visitors (CV) go house by house with their MUAC and screen the children. The referrals are given a small referral slip. If they don't have this slip, they are not able to access the SFP area. Community mobilisation is part of the CTC programme to allow the community to be aware and understand such programme. A lot of persons were waiting near the gate of the centre who were refused entry because they did not have this blue slip.

**Figure 44 Waiting area in Felussa SFP with health education**

**Figure 45 1 SFP card paediatric ward & PLW & children, Felussa SFP, SC-US, May 2006**

The community women are paid by DPPB for one month and SC-US pay them an additional incentives (150 to 200 birr per women) for the 2 coming months. They give 9kg of CSB plus 900g of oil for a month to each malnourished children & PLW. There were around 2016 moderately malnourished cases. The beneficiaries are followed using a red card for children and a yellow card for paediatric ward discharges & PLW.

Out Patient Care

Around Yirba, SC-US opened 12 OTP sites in the health posts or advanced EPI sites and in Yirba itself.

**Figure 46 Waiting area of the OTP of Felussa, SC-US, May 2006**

**Figure 47 Nurse taking the respiration rate**

Fulassa OTP site

I had the opportunity to visit Fulassa OTP and was impressed by the number of persons waiting to be admitted or followed. Certainly, the change of criteria, using the MUAC for all the children from 6 months of age has completely changed the scenario of severe malnutrition.

**Comment**: Before most of the children were wasted (and appropriate for nutritional rehabilitation), now the majority of patients are small babies who are not wasted but are stunted and have the height (and thus expected body shape) of a normal infant much less than 6 months, such stunted children are expected to have a low MUAC. In fact MUAC is also a problematic index for a normal child between 6 months and one year (that is between 65 and 75cm height). Reduction of the height criterion from 75 to 65 cm has already had a major effect on the admission rate of children who have a MUAC <110mm but are over 70% weight-for-height. The extension to all children over 6 months greatly exacerbates this problem. This not only dramatically increases the numbers of children that are enrolled in the program, but also, by inflating the denominator with children at very low risk of death will reduce the mortality rate (and the expected mortality rate). Nevertheless, the treatment is undoubtedly beneficial for these individual children – but they do not have SAM (by conventional definitions) and it is unclear whether this is the best use of limited resources or whether these children can be satisfactorily managed with other less expensive programs or foods. Distribution of RUTF is not an appropriate treatment for stunting (half of all Ethiopian children) even if it is effective.

The analysis of Fulassa OTP data was not easy because, first there was no clear information on the charts of children absentees (if the child was absent or not was not recorded and no notes at all for any reason for absence); second, there is no link between the HC TFU data and the 12 OTPs except on the charts themselves, if details of the transfer are not written on the charts, there is no way to link the transfers from the OTP to the HC and vice versa; the registration book of the health centre (the only register in the whole programme) does not record the ID number of the OTP site or child. Some children go directly to the hospital in Yirgalem (bypassing the HC) and can be effectively lost from the database. In the hospital there is no record of the past experience of the child in the OTP of HC programs.

Criteria of admission

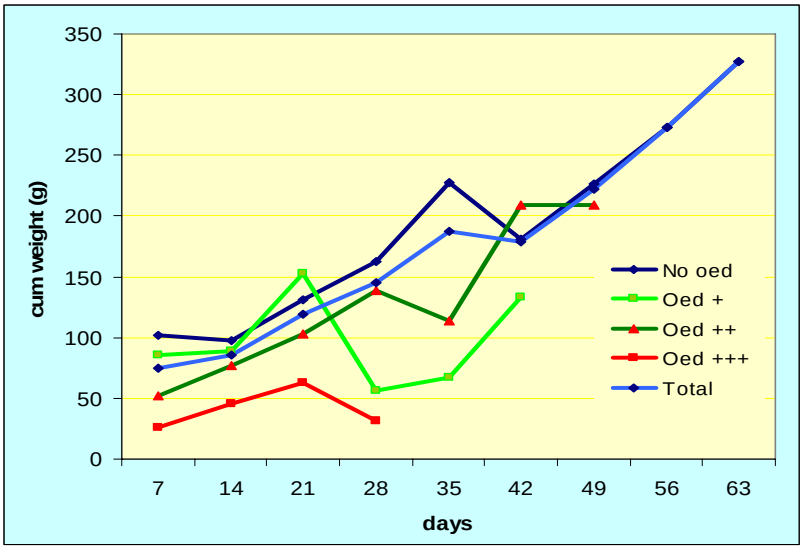
When I looked at the criteria of admission, only 4 of 48 children admitted with "marasmus" had a WFH<70%, the rest of the children were admitted with a MUAC<110mm or with oedema, but were above 70% weight-for-height. Thirty percent (14/48) of the children with marasmus had a length of less than 65cm (the average height-for-age was minus 3.6+/-1.97 Z-scores). There is a high degree of stunting in most regions of Ethiopia including SNNPR. These children would not have been admitted if the criteria of admission as MUAC<110mm with a length >65cm. and is an explanation of why there is a disjunction between the MUAC and the weight-for-height determination.

**Comment**: the derivation of using a MUAC value of <110 mm was meant to be a way to approximate those children who were severely wasted and there should be a proportionate relationship between the numbers identified using the two criteria weight-for-height of <70% and MUAC <110mm. In fact, 92% of the children who are being admitted would NOT have been admitted using weight-for-height criteria. This is an enormous discrepancy and has major implications in terms of resource allocation.

Outcome

132/133 children were discharged with only one discharged as "unknown", these are very good results; only 31/ 132 were discharged at 80% WFH the rest being above this value.

**Figure 48 Cumulative weight gain (g/kg), Felussa OTP, May 2006**




Cumulative weight gain (g/kg) - RWG – LOS – Length of loss of oedema

The figure shows the cumulative weigh gain in g/kg body weight with 225g/kg in 35days (6.4g/kg/d over the first 35 days). The average rate of weight gain until discharge was 5.4g/kg/d. – length of stay: 30+/-12days; time to loss of oedema 10+/-10days.

These results are very satisfactory.

Organisation:

Two nurses were doing the consultation; the mothers came with their bucket probably given when the child is admitted.

Yirba TFU in HC :

Yirba HC agreed to open a TFU with the help of SC-US. Children with no appetite and complications are treated as in-patients in a room of the HC for the period of phase 1. They are registered in the registration book with a TFU-HC number but not with their OTP number. Therefore, it is not possible to link this number with the OTP number. In fact, to find out what happens to the children in the HC, one would have to look at all the children from all the different OTP sites, check whose went to the HC around the time you want to collect the data from the HC and match the child by name; this would be a long and cumbersome process. But the children who have secondary malnutrition or other failure to respond to treatment are then sent to the nearest hospital, in this case Yirgalem. If he/she is sent to the hospital, he/she then has to take his/her TFU multichart to avoid the admission hospitalisation cost and the chart and record is lost from the system and artificially lowers the reported mortality rates.

It was impossible to undertake this kind of analysis with SC-US because we did not find the supervisor after we realised the problem (the cards were scattered throughout the HC, the 12 OTP sites and the hospital).

We tried to enter the data from the HC but for the children discharged within the past 2 months, but this was a failure. 1st the children were still in the OTP programme and the charts were in the field (it was impossible to find them in the different sites), 2nd because there was no number which can help you to know where they went as the OTP number is different from the number entered on the NC chart and is not written in the registration book.

**Comment**: Although the results appear to be very good. These data have to be taken with caution because -1) there were a large number of children included in the analysis who would not be included in conventional definitions of SAM and 2) The data have to be combined with the health centre and hospital data to get an overall picture of the outcome of the patients and their care.

**Recommendation**: This kind of analysis has to be undertaken (although it is time consuming and will be much easier with a SAM unique number) because, first, these children that are transferred are the ones with severe anorexia or gross oedema at high risk of death; second, as soon as the children takes any of the RUTF, they are discharged (back to OTP) whatever their nutritional status often when they have lost weight and are at minimum weight (a satisfactory intake should be confirmed with a weight gain before transfer); third, the ones who don't recover after being successively in OTP, Yirba HC and then Yirgalem hospital are effectively excluded from the analysis. The reported data are thus highly biased.

The personal of the HC is not paid by SC-US (as they were previously). They were nurses of the HC who worked in the TFU of the HC. I recognised one of them from my last evaluation mission, who was very motivated, 2 years ago, to learn about "the management of severely malnourished patients". He was, according to the supervisor of SC-US, one of the best nurses of the HC. For compensation, SC-US repaired the water tank of the centre. This was, of course, much appreciated by the head nurse and certainly helped to maintain a

good collaboration. I must say that the supervisor of the programme used to work as a doctor in the region and knows very well the context.

The number of children in the TFU did not reach more than 10 to 15 children (maximum at any one time) and this number was tolerated by the HC supervisor. In this way extra buildings or tents around the centre were not required. The supervisor stated that the care of these children did not increase the workload of the health staff excessively. To prolong the stay of these children would have increased the number of children in the centre, increased the workload and staff resources needed.

Transfer from the OTP to the HC

The transfer from the OTP to the HC is noted on the OTP card with a special number. However, a different number is written on the registration book of the HC and this HC number is not written on the OTP card.

Transfer from the HC to OTP

This is also not recorded appropriately in the registration book of the HC. There was no indication which OTP the patients came from or were discharged to.

Transfer from HC to hospital

The HC gave the multicharts to the patients who were transferred to the hospital to allow free fees for their hospitalisation. I only discovered this after I left SNNPR. This means that the charts that I collected in the HC were not complete and the missing charts will have been for children who were most ill, this will bias the data. Some of the missing charts could have been found in Yirgalem hospital (where there was a very high mortality rate (31%), ascribed by the doctors to patients being transferred in a moribund state). However, when we examined the charts in Yirgalem, there was no information about the transfers from Yirba HC.

The other potential problem when the charts are given to the mother is that there is no record at all if the patients do not attend Yirgalem hospital and the charts can be lost.

To trace the beneficiaries and be sure of the outcomes, in order to properly evaluate the programme, you need to take 1) retrospective data from 6 months ago when the outcome will have been determined, 2) copy the registration book and take all the charts. Then collate the data by name one by one.

F75 was used for the Phase 1 patients and then they were moving to Plumpy'Nut. As soon as the patient was taking some (any?) Plumpy'Nut he/she was discharged. This is metabolically threatening because the patient were discharged when their trajectory of weight change was still falling and they had not shown any indication of a weight gain (by which one could judge a satisfactory intake even if it is for only one or two days). We did not discover the outcome of any of these patients who returned to the OTP (or not).

They only had Cotrimoxazole for a while but had Amoxicilline tablets at the time of the evaluation. Tablets are not easy for the mother to give to children at OTP level. This complaint was general. ACF is cutting the Amoxicilline tablets into 4 and give them to the mother. So it is not the mother who has to cut the drugs. The HC did not have any Nystatin or Ketoconazole in the drugstore.

**Table 9 Pct of weight loss from admission to discharge, Yirba TFU, May 2006**

| OED | Pct Weight loss | N | Std. Deviation |
|---|---|---|---|
| 0 | 3.3 | 9 | 6.8 |
| 2 | 4.6 | 2 | .9 |
| 3 | 11.5 | 40 | 7.6 |
| Total | 9.8 | 51 | 8.0 |

Table 9 shows the weight loss of the admitted children in the TFU of Yirba; children with marasmus had a substantial weight loss in the centre; most of the children had severe oedema.

## *Koche OTP, ACF, SNNP*

Background

Koche HC received help from UNICEF to start SAM treatment after a large number of children were seen to be severely malnourished. Rebekah went there and gave them specific and clear advice to use OTP treatment to start the program and introduce the full treatment later. ACF accepted to open in Koche and implemented OTP sites. As soon as they opened their OTP, they found children with an absolute need for admission. The nearest centres were Butajira hospital and Koche HC. They quickly identified the need for training. Rebekah advised ACF to not conduct any training at HC or hospital level. She told them that UNICEF would take responsibility for the training for the following reasons: 1) the MoH structures need to know that it is part of their responsibility to treat these children and not as a favour to the NGO (this is a major problem which initial NGO involvement can exacerbate); 2) any "false" or "gauche" approach could have consequences for the sustainability of the programme, even such seemingly trivial things as having the ACF logo on the registration book; 3) the teams can ask for some per diem for training; and, 4) the need to be sure that the training is along the lines of the National Protocol and not a specific agency protocol.

**Comment**: Each of these reasons we completely agree with – they demonstrate the great difficulty that NGO can have in integration with a National Health Service – it is better if this is done under the auspices of UNICEF or MoH itself.

Organisation

The figure 50 shows the TFU. We asked the 3 mothers present, if they received their F75 and they agreed. However, it was a day off for the staff of the HC. Abraham, the health officer, knew that the sachet had to be diluted in 2 liters of water. But he told us that they have water problem.

The HC did not have Amoxicillin or Folic Acid. The registration book and charts were in the office but were not being used. The nurse in charge of the HC during the week end was not trained. There was no link between the OTP and the HC. Hopefully, these problems will be addressed.

**Figure 49 A mother and her child**

**Figure 50 The product and table for preparation of the feeds, Koche HC TFU**

**Figure 51 Waiting areas of the OTP, ACF, Koche woreda, May 2006**

We then went to one OTP, the HEW who was supposed to open the centre did not come because it was a day off and ACF had to run the OTP from a room in the health post. The children all got sugar water on arrival and water to drink before they had their Plumpy'Nut. ACF gave us the name of a child who had been brought to Butajira hospital, but we could not find him there. The treatment in the hospital and the health centre needed much more input before they could be usefully used as referral centres; in the interim it would be best to treat all the children as out-patients pending the training and implementation of the correct protocol in the in-patient facilities. But as UNICEF have taken on the responsibility

for training, there are urgent need for this undertaking to be discharged in Koche and for a meeting to be is conducted to solve the attitudinal problems of Butajira hospital.

### *Alaba HC and OTP, SNNP*

We visited Alaba health centre, an MoH centre. There were 10 children in the centre with very severe SAM. In addition, to the TFU there was an adjacent OTP for those patients who did not need in-patient management. Both were run by a nurse trained by Rebekah.

**Figure 52 A kwashiorkor, Alaba TFU, May 2006**

**Figure 53 Mothers and their SAM children, Alaba HC, May 2006**

**Figure 54 The nurse in charge of the OTP and the TFU, Alaba TFU, May 2006**

For milk preparation, one person was assigned by the woreda for this task and was paid 120 birr per month (for 4 months). The food for the caretakers was given through the EOS/TSF program by DPPB. The nurse in charge had some very small babies and was unable to give 8 feeds a day for these babies. He asked if it would be possible to have a table for 6 feeds instead of 8 feeds for the small babies.

Of 38 patients, there were 7 adults (with HIV and TB) – the outcome was 15 cured, 1 died and 1 transferred.

The importance of UNICEF support, not only in terms of material and products, but also good training and supervision is a major factor in the success of the programme. On going in-service training with regular evaluation and retraining in all the MoH structures should be managed by UNICEF staff to reach the aim of sustainability of the programme, until such time as sufficient staff graduate from the Universities and the knowledge becomes firmly embedded in the system. Even more important is the avoidance of clinical errors for both out- and in-patient care.

**Recommendations**: It is important that the key teachers/ evaluators speak Amharic/ Oromifa; that they have personally, themselves, have successfully looked after SAM patients using the Ethiopian protocol, that they keep updated with best practices and that they command the respect of the staff that they interact with. Doctors are more capable to teach about the complications and nurses capable of teaching about care practices and organisation. We would not advise use of nutritionists for this kind of clinical programme. I would certainly advise NGO to let UNICEF or Jimma staff, take over the in-service and supervision of the management of SAM and the NGO to be primarily involved program operation and supervision. However, an updated database on the visits made, evaluations and training given to the different centres did not appear to be used. This is a pity as it would give an overall view of the level of the program's maturity and impact and an overview of the task of UNICEF supervisor .

### *Taza HC, SNNP*

We then visited Taza private HC TFU, which is a centre run by catholic sisters. Three years ago, they were about to abandon the National Protocol, but during our visit, they realised that UNICEF was continuing the program and that they would be able to get therapeutic products if they followed the protocol, they changed their mind. Now, the protocol is being followed, except that the sister in charge was giving ReSoMal freely without the proper indications; we had to tell her that this could lead to a bad outcome and that this was made clear in the protocol. She then realised her mistake. They had 4 patients in TFU and 46 in OTP.

### *Fetucha HC TFU, Oromia*

We visited the centre with the international nurse of Goal who was assigned to re-train the personal of the centre. There was only one health personal assigned in this centre and the nurse from Goal wanted to discuss with Dr Tewoldeberhan the sustainability of this health centre using Health Extension Workers.

The expatriate was very worried that the high number of children admitted on MUAC alone will increase the admission numbers to an unsustainable level and that the workload of the staff would increase to a level where less attention would be paid to the very sick children. In her view, this increase in numbers of "borderline" SAM children could have a major negative effect upon the quality of care delivered to the more needy SAM children.

She was also worried about the criteria for transfer of children from HC to OTP. She was afraid to send them (as she had been instructed) after taking "any" Plumpy'Nut from a sachet (even if they were still loosing weight). Taking ANY Plumpy'Nut has been taught as the criterion for a "good" appetite for all the programs using Valid International teaching. "If they take any of the Plumpy'Nut they can go home", "Don't keep the child too long in HC, they must go home as quickly as possible", "They must be discharged after a maximum of 7 days" and similar teaching is the policy promulgated. She was so traumatised by these rules which went against all her clinical training. She started to introduce RUTF as soon as possible even if the child was still on F75. She decided that she would increase the RUTF and decrease the amount of F75 and transfer the children to OTP when they were able to take 75% of the RUTF. If they had a bad appetite, they were switched to F100 in Transition Phase.

**Figure 55 The nurse expatriate of Goal training the nurse of the HC, May 2006**

She was also urgently questioning, and worried about, the criteria used for the definition of relapse. If we used MUAC for admission and WFH for discharged, what are our criteria of relapse and how to measure the relapse rate? It is quite possible to have children (particularly those around 65cm) who fulfil the criteria for admission (MUAC <110mm) and discharge (WFH 85%) simultaneously. These are real questions that need to be carefully looked at and resolved. The mean length of stay was 7.3 +/- 4.9 days.

The rate of weight gain is very high for wasted patients and less for oedematous cases which is normal.

**Table 10 Outcome from HC in Fetucha HC TFU, May 2006**

| Outcome from the centre | N |
|---|---|
| Card not traced | 3 |
| Cured | 5 |
| Default | 2 |
| Default after Disch. | 2 |
| Died in SC | 3 |
| Died on OTP | 1 |
| Still in SC | 6 |
| Still on OTP | 16 |
| Transfer to hospital | 4 |
| Total | 42 |

**Table 11 RWG by degree of oedema, Fetucha**

| OED | RWG Mean | N | Std. Deviation |
|---|---|---|---|
| 0 | 14.6 | 17 | 11.5 |
| 1 | 3.9 | 8 | 3.6 |
| 2 | 4.3 | 4 | 6.4 |
| 3 | 2.7 | 2 | 3.9 |
| Total | 9.7 | 31 | 10.4 |

The table shows the outcomes of the children. It is interesting that in a focused centre with a dedicated, highly trained expatriate nurse that 3/42 cards went missing. This is not a criticism of the nurse, but rather an indication of how easy it is to loose children and data in centers that are not run as well as this. Within the Government health service, where the staff have many other jobs to perform, the loss of loose cards will be commonplace, particularly for cards that the staff think will no longer be used by the patient (i.e. the charts from dead children). This calls into question the veracity of the data where there is no registration book and the ability to "cross-check" for data completeness.

The data presented was only possible because of the willingness of this expatriate nurse who herself kindly checked all the charts after my visit, entered the data in the computer and sent me the data by email. Thanks again for her kindness and dedication, for her helpful suggestions and for expressing her great concern at what she considered to be unethical "rules". She was extremely concerned with the children's welfare and her own conscience. She is one of the unspoken heroines that we met.

## *Gooro health centre, Bale region, Oromia*

The Figure 56 shows what we found in the HC TFU at Gooro during our visit; an OTP program was implemented by Concern in the area

**Figure 56 The door of the pharmacy is locked and unavailable (notice the RUTF inside) Gooro TFU, May 2006**

The pharmacist of Gooro HC had been absent for 15 days and took the key of the pharmacy where all the materials and products were kept "safely". The products were unavailable and the head of the HC had not yet seen the pharmacist as he was newly nominated having just graduated from nursing school. This is a common problem we encountered elsewhere. The pharmacist is "responsible" for the stock, during his leave he simply closes the pharmacy and leaves because, from experience he knows that if anyone from the staff can take drugs "on trust", the stock is depleted and he is held responsible. He would prefer not to be held responsible for missing drugs than for patients failing to get treatment. In most places even the head of the centre cannot obtain drugs from the pharmacy in an emergency.

The good news for this centre is that the new chief was trained on the management of SAM at the nursing school of Assela in Oromia. His teachers did not know every thing but gave some information about the treatment. He was therefore already familiar with the importance of SAM and considered SAM treatment to be part of his job and not a specific UNICEF programme; this is one of the very important aspects of pre-service training – that SAM is not seen to be a special program of the NGO or UN agencies, but part of the normal work of a nurse and doctor. But the nurse was stymied because the pharmacist had left and did not tell anybody about the OTP. The problem of communication and passing information is very serious in Ethiopia; we encountered this problem at each level during our assessment mission. One of the drawbacks of the OTP program is that it depends largely upon staff working in an unsupervised way and on having good logistics, communication and co-operation. These are the aspects of the health service that are weakest.

Ten children came the day before for the OTP but nobody was there and they left without having been seen and with no RUTF. Some had come from up to 90 km away. The OTP visits were only every 15days and not every week. According to the results of Concern at Kalu, we would not recommend 15 day visits (there are much worse results); but certainly there should be facilities closer than 90km for treatment – if the distances are like this then the patients cannot come every week.

The health stations with OTP were as followed, 1- Melkabouha (17km) 2- Sofumar (42km) 3- Bale (14km) 4-Boutar (17km).

Signs of butock atrophy (baggy pants) was criterion of admission for all as well as MUAC<110mm for a length of >65cm. They were in shortage of water in the HC.

### *Melkabouha health station, Bale region, Oromia*

**Figure 57 The aid nurse taking the length of a child, OTP of Melkabouha, May 2006**

We visited the health station after the training by Concern. The personal informed us that they were in the 2nd stage of the training program with Concern, which consisted of "strengthening the program". Over 4 months they had had 8 visits. But still in-service training was clearly needed. There were big differences with length measurements (71cm length taken by us and 67cm recorded on the chart). The photograph shows the way that height was being measured – it is clear why the values were in error as the correct technique was neither known nor followed. Of 19 children, 5 children had their length taken every 15days and their length varied from 4cm to 11cm from one measurement to another; the average discrepancy was 7cm. The reason for defaulting was not checked because of workload (and so the outcome of the children recorded as defaulting is actually "unknown", a proportion of them could easily have died). Defaulter tracing was meant to be done by the HEW. The relapses for MUAC were not recorded because the criteria of discharged was WFH and not MUAC. I have not idea how we know that a child is relapsing with baggy pants, it is a very subjective judgement.

**Figure 58 OTP card, Melkabouha OTP, May 2006**

The OTP did not distribute Vitamin A because of the EOS/TSF distribution. The major complaint of the staff was about the introduction of other activities on the top of this one; growth monitoring; they stated was simply too much for them, and if imposed then the OTP program could not be run. Two months ago, before our visit, they were 3 persons at the centre and now they were only 2 persons to undertake all the different programs, one nurse and one clinical senior nurse. The area is subject to malaria outbreaks. They have 8 outreach areas, that take 3 to 4 hours to reach, for EPI. The motorbike does not function.

Since the beginning of the programme, they had 20 wasted children, all admitted with MUAC criteria or baggy pants. From the charts, they discharged one, had no deaths and no defaulters, 13 are still in the programme (it is not clear what happened to the other 4 children). We would really advise that the OTP program should be weekly because the length of stay is far so long and the progress is very slow. They have enough Amoxicillin syrup. The different programs running in this health stations were 1) EPI, 2) Growth Monitoring, 3) OTP site with 2 HEW. However the storage was very dirty; the health post was closed because the supervisor had to go by motorbike to a meeting. The average RWG is only 2.8g/kg/d using min weight, which is very low for an average length of stay of 51days.

## Health centre TFU and OTP, overall

A consolidated analysis of OTP the cumulative weight gain percent by degree of oedema (from minimum weight) is shown in the figure 60 below. The cumulative weight gain for wasted children over an average of 14 weeks was 30% of body weight (at 10 weeks they had gained 23% cum body weight).

An analysis of cumulative weight gain by region shows that SNNPR has a good weight gain (20% in 5 weeks, following which the number of patients remaining was very low); Amhara region had 23% in 10 weeks and Harare 20% in 11 weeks (see figure 61). Graph 62 shows the cumulative weight gain percent for SAM treated with RUTF and for with SP450 (data from Rwanda), SP450 and Unimix and with Unimix alone. The cumulative weight gain after 2 weeks was 8% for RUTF, 13% for SP450 and SP450&Unimix and 7% for Unimix.

**Figure 59 Cumulative Pct of weight gain by degree of oedema, discharged children, OTPs, May 2006**

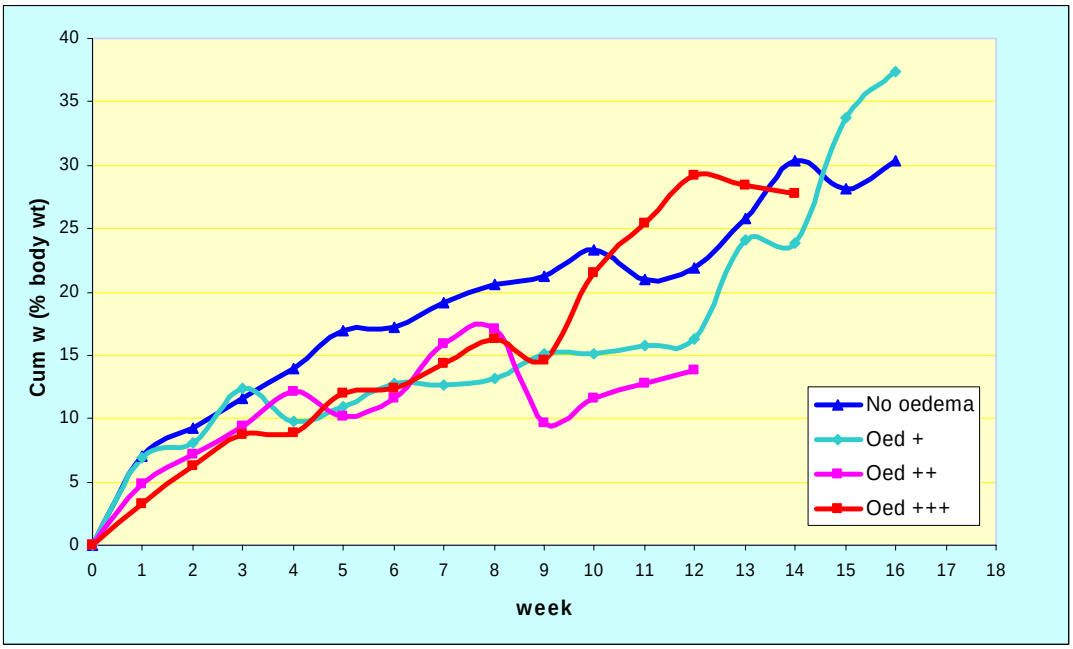



**Figure 60 Cumulative Pct of weight gain by region and overall, discharged children, OTPs, May 2006**

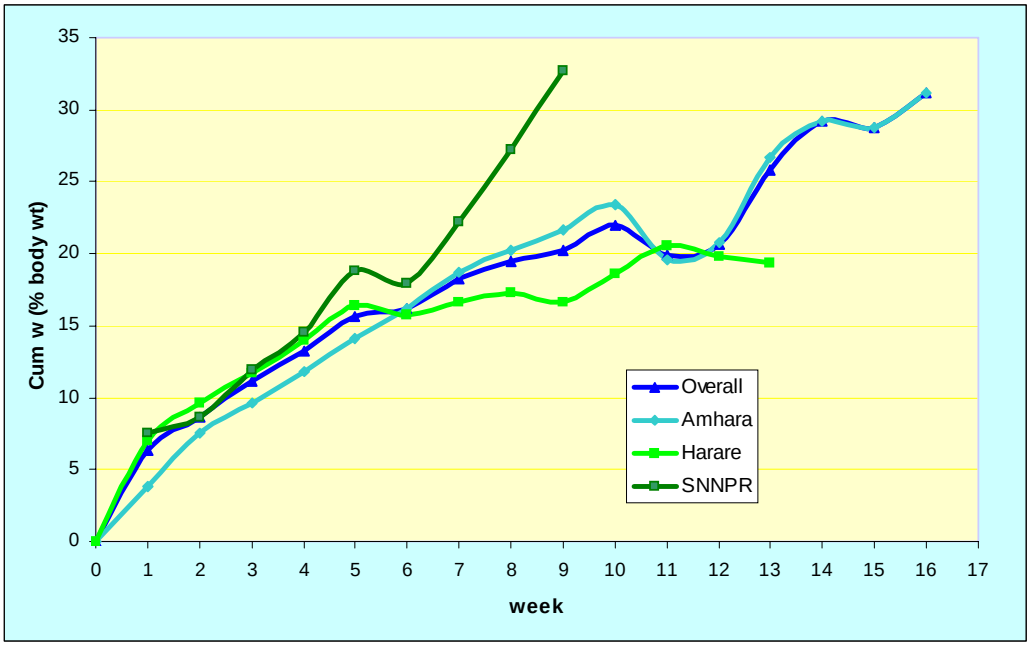
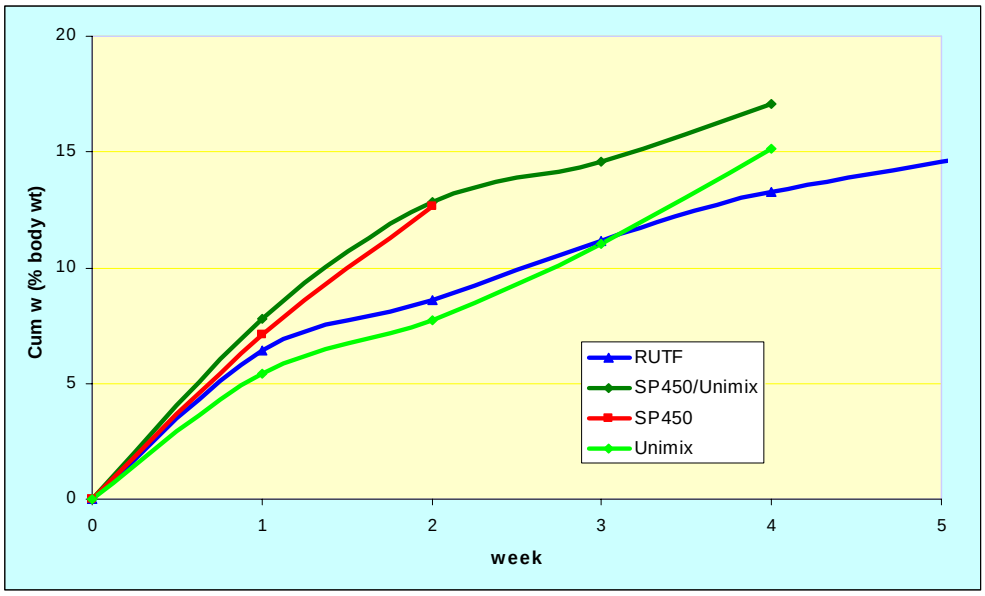


**Figure 61 Cumulative weight gain by week using different RUTF compare for moderately malnourished SP450 & Unimix, discharged children, OTPs (Ethiopia) and SFP (Rwanda), May 2006**




The table 12 summarises the length of stay (LOS), the rate of weight gain (RWG) and the pct of weight loss (%WL) by degree of oedema and by OTP programme. The length of stay varied between 30 days for Boricha and 121days for Kalu. Why such difference of length of stay (LOS)? We postulate it is due to the different organisation of the program: in Boricha, the visits were every week and an SFP was in place whereas in Kalu the visits were every 2 weeks and there was no SFP.

The RWG varied from 5.5g/kg/d in Boricha to 3.1g/kg/d in Kalu and the percentage of weight loss before catch-up weight gain commenced was 2.8% in Boricha compared to 1.3% in Fadis.

These data from programs that had the same teachers can be compared with the data from Awasa (ACF) data, where an OTP and TFU were implemented but a much higher proportion of children were first admitted to in-patient care; Because of the admission criteria the Awasa children were more severely wasted – the total length of stay was 47 days but the rate of weight gain (in OTP) was 8.1g/kg/d (which is even within the Sphere standards for in-patient management). Note that a higher rate of weight-gain and a longer stay indicates that the children were much more severely wasted when treatment started – this may be due to admission on weight-for-height criteria rather than MUAC criteria with a large number of stunted babies and moderately malnourished children (by WFH) in the other datasets.

It would appear that the reason for the very low rates of weight gain and prolonged stay in many of the OTP sites is due to inappropriate attempts to keep metabolically malnourished, relatively anorexic children at home instead of admitting them to in-patient care for a few days initially to reverse their metabolic malnutrition. This is related to the perfunctory appetite test and also to the arbitrary “rules” such as “a child must not stay in a facility for more than 7 days”. Like growing plants, first the delicate young plants are germinated in

specially protected frames and then planted out into the fields when they become stronger. The weak, delicate, metabolically malnourished children need special protection initially – the secret is to have simple mechanisms for relatively low level staff to identify such children and offer APPROPRIATE treatment.

**Table 12 Length of stay, RWG, Pct of weight loss, OTPs, May 2006**

| WOREDA | OED | N | LOS (d) | RWG (g/kg/d) | W loss (%) |
|---|---|---|---|---|---|
| Boricha | 0 | 47 | 32 (SD 17) | 7.2(SD 8.8) | 0.8 (SD2.0) |
| | 1 | 23 | 23 (SD 8) | 5.8 (SD 6.6) | 3.0 (SD 4.6) |
| | 2 | 57 | 31 (SD11) | 4.2 (SD 3.2) | 4.1 (SD 4.5) |
| | 3 | 5 | 33 (SD 11) | 3.7 (SD 2.4) | 6.9 (SD 5.5) |
| | Total | 132 | 30 (SD 13) | 5.5 (SD 6.4) | 2.8 (SD 4.2) |
| Fadis | 0 | 59 | 58 (SD 26) | 3.9 (SD 5.6) | 1.0 (SD 2.5) |
| | 1 | 5 | 48 (SD 19) | 4.8 (SD 3.1) | 3.3 (SD 2.3) |
| | 3 | 1 | 57 | 3.0 | 11.4 |
| | Total | 65 | 58 (SD 26) | 4.0 (SD 5.4) | 1.3 (SD 2.8) |
| Kalu | 0 | 49 | 102 (SD 82) | 3.7 (SD 2.4) | 1.1 (SD 3.3) |
| | 1 | 8 | 188 (SD 257) | 1.5 (SD 1.0) | 3.2 (SD 6.6) |
| | 2 | 9 | 181 (SD 236) | 1.7 (SD 1.8) | 3.4 (SD 4.5) |
| | 3 | 4 | 93 (SD 38) | 1.9 (SD 1.7) | 11.3 (SD 11.6) |
| | Total | 70 | 121(SD 139) | 3.1 (SD 2.4) | 2.2 (SD 5.1) |
| Total | 0 | 155 | 64 (SD 57) | 4.8 (SD 6.3) | 1.0 (SD 2.6) |
| | 1.0 | 36 | 63 (SD 134) | 4.6 (SD 5.6) | 3.1 (SD 4.8) |
| | 2.0 | 66 | 52 (SD 98) | 3.8 (SD 3.2) | 4.0 (SD 4.4) |
| | 3.0 | 10 | 59 (SD 38) | 2.9 (SD 2.1) | 9.1 (SD 8.0) |
| | Total | Mean | 61 (SD 82) | 4.5 (SD 5.4) | 2.3 (SD 4.2) |
| | | N | 267 | 266 | 267 |
| Anova test | | | 0.000 | .0064 | 0.06 |
| ACF Awasa | 0 | 164 | 49 (SD 25) | 8.1 (SD 8.8) | .3 (SD .3) |
| | 1 | 19 | 48 (SD 31) | 7.1 (SD 4.9) | .6 (SD .6) |
| | 2 | 76 | 39 (SD 26) | 8.4 (SD 4.4) | .8 (SD .6) |
| | 3 | 4 | 44 (SD 23) | 6.2 (SD 2.4) | 1.4 (SD 1) |
| | Total | 263 | 46 (SD 26) | 8.1 (SD 7.4) | .7 (SD .7) |
| Anova test | | | 0.000 | .01 | .000 |

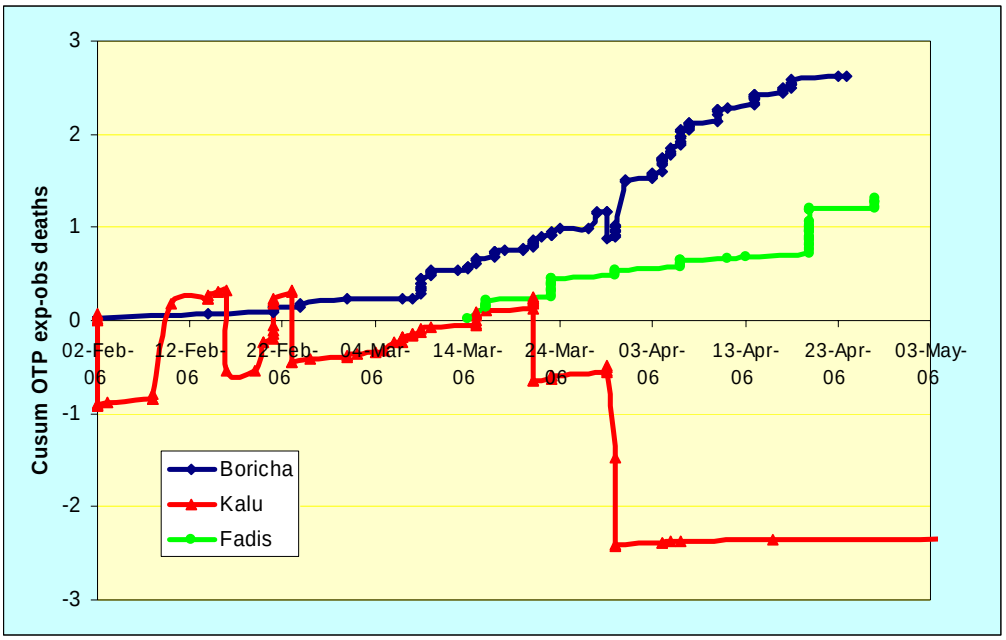
**Table 13 LOS and RWG by type of Out patient care, for discharged wasted patients**

| Type of care | | LOS* | RWG* |
|---|---|---|---|
| OTP (P1 in-patient) | Mean | 49 | 8.1 |
| | N | 164 | 164 |
| | Std. Deviation | 25 | 8.8 |
| OTP (visit/7d) | Mean | 39 | 5.0 |
| | N | 197 | 196 |
| | Std. Deviation | 22 | 6.1 |
| OTP (visit/15d) | Mean | 121 | 3.1 |
| | N | 70 | 70 |
| | Std. Deviation | 139 | 2.4 |
| Total | Mean | 52 | 5.8 |
| | N | 481 | 481 |
| | Std. Deviation | 63 | 5.0 |

Anova test $p<.001$

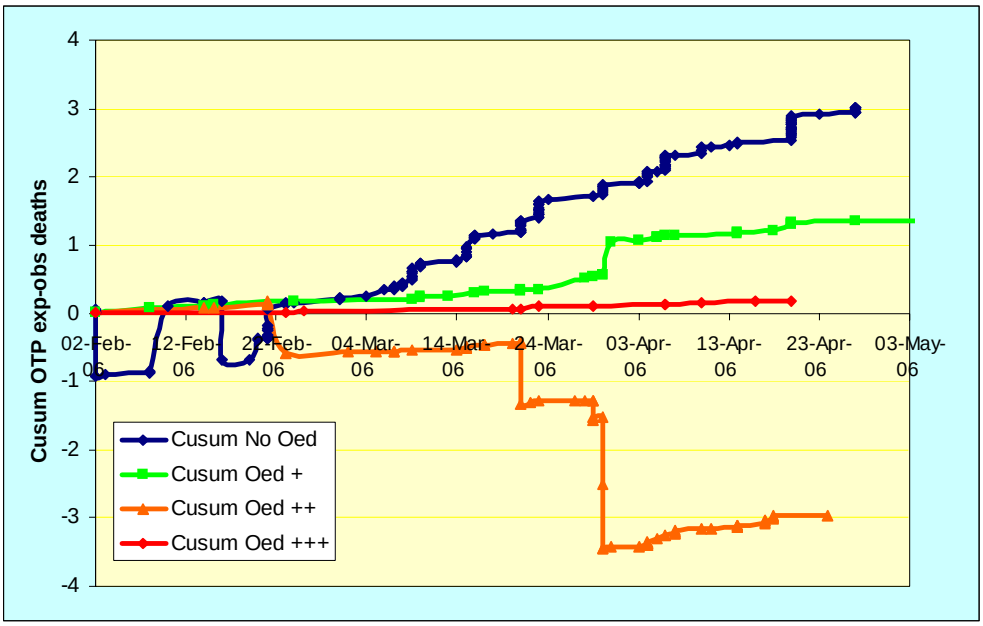
Table 13 shows the difference in LOS between OTP with the patients being admitted for in-patient care for a few days in phase 1, OTP with weekly visits and OTP with visit every 2 weeks. The length of children in In/Out patient treatment and OTP were almost the same compare to the OTP with visit every 2 weeks (this tripled the length of stay from 40 days to 121 days). However, the RWG is better with in-out patient management (8.1 g/kg/d) than with OTP alone (5g/kg/d) or OTP with 15 days visits (3.1g/kg/d). These differences are dramatic and have major implications for the organisation of services, the welfare of the patients and the choice of technical details for the national protocol. The evidence base is clear.

**Figure 62 Cusum of expected – observed deaths in OTP, by woreda, May 2006**




This figure shows the cusum of the expected minus observed deaths for the OTP program by woreda. (note that the number of deaths recorded is a MINIMUM number as there was nowhere complete determination of the actual outcome of the abandoning children). Clearly, Kalu has deaths in excess compared to the other 2 OTP programmes. The results, if complete, are similar to those found from in-patient treatment in the better centres. Given the undoubted advantages of a well run OTP this is an excellent result.

**Figure 63 Cusum of the exp – obs deaths by degree of oedema, OTP, May 2006**




The Figure 63 shows that the oed ++ have excess deaths in OTP compared with mild oedema and wasted patients (there were to few patients with oedema +++ to give a reliable estimate). It is recommended that children with oedema ++ should initially be admitted for in-patient management if a properly run and trained centre is available locally (the advantage of having a Bissidimo).

**Table 14 Exp and observed deaths by OTP, degree of oedema, May 2006**

| Woreda | oed | obs# | exp# | sig | o/e | obFR% | exFR% | sub# |
|---|---|---|---|---|---|---|---|---|
| Boricha | 0 | 0 | 1.0 | 0.066* | 0 | 0 | 2.2 | 47 |
| | 1 | 0 | 1.0 | 0.066* | 0 | 0 | 4.4 | 23 |
| | 2 | 0.3 | 0.8 | | 38.12 | 0.5 | 1.4 | 58 |
| | 3 | 0 | 0.1 | | 0 | 0 | 1.8 | 5 |
| | Overall | 0.3 | 2.9 | 0.034* | 10.27 | 0.2 | 2.2 | 133 |
| Fadis | 0 | 0 | 1.1 | 0.063* | 0 | 0 | 1.9 | 59 |
| | 1 | 0 | 0.2 | | 0 | 0 | 4.0 | 5 |
| | 3 | 0 | 0.0 | | 0 | 0 | 0.9 | 1 |
| | Overall | 0 | 1.3 | 0.057* | 0 | 0.0 | 2.0 | 65 |
| Kalu | 0 | 2 | 3.0 | 0.198 | 67.49 | 3.4 | 5.0 | 59 |
| | 1 | 0 | 0.2 | | 0 | 0 | 2.1 | 8 |
| | 2 | 4 | 0.6 | | 722.8 | 28.6 | 4.0 | 14 |
| | 3 | 0 | 0.1 | | 0 | 0 | 1.3 | 6 |
| | Overall | 6 | 3.8 | 0.185 | 159.5 | 6.9 | 4.3 | 87 |
| Overall | | | | | | | | |
| | 0 | 2 | 5.1 | 0.055 | 39.2 | 1.2 | 3.1 | 165 |
| | 1 | 0 | 1.4 | 0.055* | 0 | 0 | 3.8 | 36 |
| | 2 | 4.3 | 1.3 | 0.017? | 320.8 | 6.0 | 1.9 | 72 |
| | 3 | 0 | 0.2 | | 0 | 0 | 1.5 | 12 |
| | Overall | 6.3 | 8.0 | 0.218 | 78.75 | 2.2 | 2.8 | 285 |

It is instructive to note the very low expected mortality rate (Prudhon index) for these patients if the WHO (1999) protocol was in operation – as we have seen with the Ethiopian protocol we would expect about half these deaths. In the OTP programs we would have expected 8/285 deaths (2.8%) and the observed mortality rate was 2.2%. As stated the Prudhon index gives about twice the expected rate that the best centres obtain so the expected mortality would be around 1.4%. This very low mortality is mainly related to the fact that the patients admitted to the OTP programs are at very low risk of death, and many (? Most) would not be admitted to a conventional program and do not fulfil the conventional definitions of SAM.

Nevertheless in Kalu woreda the minimum mortality is 7 times higher that the expected mortality for children with ++ oedema.

## A note on Coverage

At the moment the NGOs are active in about 35 woredas out of a total of 325 “food insecure” woredas and a further 370 woredas which will have malnourished children but have not been designated as “food insecure”. Thus, at the moment only about 9% of the food insecure woredas have an NGO presence and within Ethiopia as a whole the NGOs are only active in 4% of the woredas.

The NGOs are claiming that to have a major impact they have to increase the coverage and access to services. They do “coverage surveys” in their area of intervention and find that it is, say, 80%, and report great success in terms of coverage. This is of course excellent.

BUT in terms of the needs of the children of Ethiopia and the coverage (relation between the services offered and the need for those services) is still trivial.

For example, there are 18 woredas in the area served by Dessie hospital. Concern is active in 2 woredas, so even if they have a coverage of 80% in their 2 woredas the actual coverage in the catchment area of the hospital (Wollo) cannot be more than 9%. But the results the NGO publishes, from their area of intervention will be good. Even though the NGOs coverage is trivial they do provide a wonderful service for the areas in which they are active (better than no service at all), and they also generate data as to what can be done. Tigray, which has one of the worst nutritional status of the whole of Ethiopia, does not have any NGO program at all – they have ignored the problems there and one very rarely hears anything about the plight of the Tigrean children.

The change of the admission criteria to MUAC (from 6 months of age) and the reduction of the cut off for using MUAC from 75 to 65cm in height has had the effect of massively increasing the numbers of beneficiaries. This means that many children who before would have been treated in SFP are now being treated in OTP. This dilution of the severely malnourished at high risk with non-SAM children at low risk has massively increased the cost and difficulty of the program. The effect has been to make it much less likely that the non-covered woredas will have the program introduced. It would be more effective in terms of treating SAM itself if the admission criteria were more stringent, the patient numbers were lower at any one site and the geographic coverage of the programs were expanded. In other words if we have a program in one woreda which treats 500 children per year, it would be better to expand the program into two woredas each treating 500 children per year, than to relax the criteria so that the one woreda treats 1000 children per year. The NGOs are reluctant to increase their geographic coverage for logistic, budgetary and management reasons.

The conclusions are:

1) The statistics about coverage are geographically circumscribed and ignore the vast majority of children who have access to no services at all, or at best those offered by the local hospital.

2) There is no alternative to having procedures that can be organised, implemented and carried on by the MoH itself.

3) The only way in which coverage can be effectively increased is to dramatically increase the geographical coverage which can only be done through the MoH and UNICEF.

4) The change in admission criteria have profound implications on the magnitude of the program and the ability to expand into at-present uncovered areas.

5) All the recent “innovations” have had the effect of increasing he numbers of children that would “qualify” for inclusion in a program. The change from % of the median to minus 3 Z-scores (NCHS standards) has the effect of about doubling the program. The change to using MUAC at a level of >65 cm has the effect of doubling the program. The change to using MUAC from 6 months of age has the effect of further doubling the program. A change to the new WHO standards (2005) will lead to a further increase in children who are diagnosed as SAM (see appendix). The numbers who now “qualify” far exceed the capacity of the NGOs, UN agencies, Government and Donors to deliver even

basic nutritional services for the severely malnourished throughout the whole country, the changes will exacerbate the problem dramatically.

This is not to say that the malnourished children who are not SAM do not need (or deserve) proper intervention. They do, in terms of SFP, weaning food projects, general ration distribution, development projects (home gardening, hearth programs, micro-credit, guaranteed market prices, food diversification, agricultural extension, public education, etc.). The contention is that it is not sensible to use the SAM in- or out-patient programs to address these problems. The programme is simply too expensive in terms of products and other resources (personnel, supervision, training etc.). If we showed that RUTF reversed stunting (as seems to be the case) are we ever going to have a program where half of all children in Ethiopia are given a continuous supply of RUTF? But these are the implications of the present direction of the programs.

## Appendix 1. Comparison of the admission anthropometry of the children treated in OTP assessed by the WHO2005 and the NCHS standards

The following two tables should be compared one with the other.

WHO2005 standard using the admission WHZ, database of OTP – HC TFU, May 2006

| Age groups (months) | N | Weight-for-length/height (WHO2005 Z-score) | | | | | |
|---|---|---|---|---|---|---|---|
| | | % < -3Z | % < -2Z | % > +1Z | % > +2Z | Mean | SD |
| Total | 273 | 31.1 | 56 | 2.9 | 1.5 | -2.13 | 1.51 |
| 6-11 | 19 | 36.8 | 78.9 | 0 | 0 | -2.88 | 0.8 |
| 12-23 | 90 | 46.7 | 74.4 | 0 | 0 | -2.77 | 1.16 |
| 24-35 | 40 | 32.5 | 67.5 | 0 | 0 | -2.54 | 1.25 |
| 36-47 | 35 | 31.4 | 45.7 | 2.9 | 0 | -1.96 | 1.6 |
| 48-60 | 73 | 11 | 26 | 9.6 | 5.5 | -0.96 | 1.54 |

NCHS standard using the admission WHP, database of OTP – HC TFU, May 2006

| Age groups (months) | N | Weight-for-length/height (NCHS Z-score) | | | | | |
|---|---|---|---|---|---|---|---|
| | | % < -3Z | % < -2Z | % > +1Z | % > +2Z | Mean | SD |
| Total: | 278 | 8.3 | 45.7 | 1.4 | 0 | -1.72 | 1.05 |
| 6-11 | 20 | 5 | 40 | 0 | 0 | -1.92 | 0.63 |
| 12-23 | 88 | 10.2 | 60.2 | 0 | 0 | -2.06 | 0.85 |
| 24-35 | 41 | 14.6 | 61 | 0 | 0 | -2.06 | 0.79 |
| 36-47 | 35 | 8.6 | 45.7 | 0 | 0 | -1.78 | 1.05 |
| 48-60 | 73 | 4.1 | 24.7 | 5.5 | 0 | -1.07 | 1.21 |

The following comparison shows the effect is most dramatic on the assessment of young children

Comparison of NCHS and WHO2005 standard with length =<65cm and >65cm & 110cm, database of OTP – HC TFU, May 2006

| Length/height | Table | N | W/H<-3Z | W/H<-2Z |
|---|---|---|---|---|
| =<65cm | NCHS | 54 | 0 % | 38.9 % |
| | WHO2005 | 53 | 49.1 % | 71.7 % |
| >65cm to 110cm | NCHS | 296 | 10.8 % | 52 % |
| | WHO2005 | 292 | 30.5 % | 58.2 % |

**Appendix 2: Schedule of visits**

| Date (April 11-May 10, 2006) | | Pr Michael Golden | Dr Yvonne Grellety |
|---|---|---|---|
| Tuesday | 11 | Travel to Addis | Travel to Addis |
| Wednesday | 12 | Workshop – revision of the national protocol | Workshop – revision of the national protocol |
| Thursday | 13 | Security briefing – Meeting with UNICEF, FMOH, DPPA and NGOs | Security briefing – Meeting with UNICEF, FMOH, DPPA and NGOs |
| Friday | 14 | Meeting with UNICEF, FMOH, DPPA and NGOs | Meeting with UNICEF, FMOH, DPPA and NGOs |
| Saturday | 15 | Visit Black Lion hospital | Visit Black Lion hospital |
| Sunday | 16 | OFF | OFF |
| Monday | 17 | SMART workshop | SMART workshop |
| Tuesday | 18 | SMART workshop | SMART workshop |
| Wednesday | 19 | Fly to Axum – visit nursing school and TFU | Drive to Dessie |
| Thursday | 20 | Drive to Adigrat – visit TFU – drive to Mekele | Visit Dessie hospital TFP |
| Friday | 21 | Meet with RHB – visit nursing school and TFU | Drive to Mekele – visit Woldyia on the way |
| Saturday | 22 | Fly back to Addis | Fly back to Addis |
| Sunday | 23 | OFF | OFF |
| Monday | 24 | Flight to Jimma – visit Jimma University | Drive to Butajira, visit the TFU, drive to Awasa |
| Tuesday | 25 | Visit Jimma University | Visit Yirba and Darara TFU, drive to Awasa – visit Bushulo |
| Wednesday | 26 | Visit Jimma University – Fly to Addis | Drive to Gamogofa, visit Arbaminch and Chincha hospitals, visit Alaba HC – drive to Awasa |
| Thursday | 27 | Fly to Gondar - visit Gondar University | Drive to Goba, visit Bale OTP |
| Friday | 28 | Visit of Gondar University and TFU – | Visit Bale OTP – meet with Bale zonal |

| | | | |
|---|---|---|---|
| | | visit Dabat | health office |
| Saturday | 29 | Fly back to Addis – Drive to Awasa | Visit Bale OTP – Drive to Awasa |
| Sunday | 30 | OFF | OFF |
| Monday | 1 | Meet with RHB – visit Awasa medical University | Meet with RHB – visit Yirgalem hospital |
| Tuesday | 2 | Drive from Awasa to Alemaya | Drive from Awasa to Dire Dawa, visit OTP in Dire Dawa, meet with RHB |
| Wednesday | 3 | Visit Alemaya University and TFU | Drive to Harar, visit Hiwot Fana hospital, meet with RHB, visit Besidimo TFU |
| Thursday | 4 | Drive to Kombolcha – visit TFP – Fly to Gode | Drive to Kombolcha – visit TFP – Fly to Gode |
| Friday | 5 | Visit Gode TFP | Visit Gode TFP |
| Saturday | 6 | Fly back to Addis | Fly back to Addis |
| Sunday | 7 | OFF | OFF |
| Monday | 8 | Debriefing – report writing | Debriefing – report writing |
| Tuesday | 9 | Debriefing – report writing | Debriefing – report writing |
| Wednesday | 10 | Departure | Departure |

## Appendix 3: Terms of references (TOR)

Background and justification

Ethiopia has had nutritional problems throughout recorded history, often catastrophic. The level of agricultural development and livelihood in much of the country is still limited. Malnutrition among children in Ethiopia remained unacceptably high, they are stunted (46%), underweight (38%) and wasted (11%)1.

Traditional direct food aid and various food security interventions have been the major strategies in the past decades to respond to nutrition issues and the "food-first bias" has governed the work of almost all emergency actors in Ethiopia. Despite large amount of food aid, this has had very little impact on child malnutrition in the country. The response to famines has frequently been delayed. Normally there is a very high mortality rate associated to severe malnutrition. For many of these famines the major interventions have been food distributions, supplementary feeding and therapeutic feeding programmes by international NGOs, whose national coverage is low, and UN agencies. The ability of the national health services to treat severely wasted patients according to modern methods has been almost non-existent. Teaching to appreciate, understand and address these conditions does not form part of the curriculum of any medical or nursing school, and for many years doctors and nurses have graduated with little or no nutritional knowledge. Further, the perception of the health administrators seems to have been that severe wasting and kwashiorkor only occur in times of famine and that it is then the responsibility of the international NGOs to respond.

Although it is critical for Ethiopia to address the underlying and basic factors of malnutrition to get out of the vicious circle leading to recurrent nutrition crisis, it is equally important to address the immediate threat of severe acute malnutrition that is presently facing Ethiopia.

The Federal Ministry of Health requested UNICEF support to assist in the integration of the treatment of severe acute malnutrition into hospitals and health centres. All of the existing Therapeutic Feeding Units established from August 2003 are closely integrated into the health system. In a division of labour, NGOs then started to implement Outreach Therapeutic Programmes in various regions as a complementary service to facility-based activities. After a stagnation in the malnutrition treatment capacity, a dramatic increase in the number of Therapeutic Feeding Programmes from 54 to 122 between June and February 2006 occurred; and consequently an increase of the treatment capacity from 5,870 to 14,000 children for the same period.

It is now critical to evaluate the current Therapeutic Feeding Programme in Ethiopia before continuing the expansion. Strengths and weaknesses need to be identified in order to take the appropriate corrective measures for the success and sustainability of the programme.

At the same time, the FMOH requested UNICEF to assist in the revision of the national protocol for the management of severe malnutrition and the introduction of the SMART tool (Measuring Mortality, Nutritional Status and Food Security in Crisis Situations). The two consultants will also undertake those tasks.

[1] DHS, Ethiopia, 2005

Key duties and Responsibilities

The two consultants will undertake the following tasks:

Prepare the amendments to be made for the revised version of the national protocol for the management of severe acute malnutrition.

Actively participate to the national workshop for the protocol revision and advocate for the amendments' adoption.

Prepare and conduct a workshop on the introduction of the SMART tool in collaboration with Dominique Brunet, ENCU team leader.

Conduct quality control/monitoring visits to the integrated TFU (Tigray, Somali, Oromia, SNNPR, Dire Dawa, Harare and Amhara) and provide on-the-job technical support to the implementers.

Meet with the Regional Health Bureau's head and prepare with them a one year plan of action for the continuity and the development of the TFU in the regions.

Expected Outputs

A written evaluation report on the Therapeutic Feeding Programme with concrete and realistic ways forward for the Ministry of Health and Regional Health Bureaus at the end of mission.

Workshop on the revision of the national protocol for the management of severe acute malnutrition prepared and amendments adopted.

Workshop on the introduction of the SMART tool prepared and conducted.

Duration/reporting:

The consultants will be based in Addis Ababa for the period 11 Apr–10 May 2006, with field travel. The immediate supervisor will be Sylvie Chamois, Nutrition Project Officer.