

SOUTHERN SUDAN MEDICAL BULLETIN

Vol 1, Issue 3. August 2008



Keratomalacia – caused by vitamin A deficiency. Note central corneal perforation with iris plugging the wound. (From SIGHT AND LIFE, Basel, Switzerland www.sightandlife.org)

To inform, educate and positively influence the
development of Health Services in the Southern Sudan

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Editorial

Most Health Professionals in Southern Sudan deal with a unique combination of health problems in often-difficult working conditions. To the burden of 'traditional' infections (e.g. diarrhoea, tuberculosis, malaria, measles, cholera and meningitis), undernutrition and anaemia, and HIV and AIDS are added the traumas left over from the war as well as emerging chronic conditions such as diabetes, cardiovascular disease and alcohol abuse.

A recent Lancet¹ article summarised the situation – it reported that in Southern Sudan the maternal mortality rate is 2030 /100 000 live births (the world's highest), the under five mortality rate is 135 per 1000 live births and that there is just one doctor for every 100 000 people.

Southern Sudan is rich in resources but it will take time to improve the health of the people. One thing that should help is to share information on evidence-based clinical practice and this is what this Bulletin aims to do.

In this issue Dr David Curnock describes how to resuscitate newborns and provides a chart for the ward, and Marlou Bijlsma suggests dietary guidance for those living with HIV and AIDS. Terry Theuri summarises her report on the underlying causes of undernutrition in Twic county and gives recommendations that are relevant beyond the area of nutrition. We urge you to obtain her full report. In addition you will find news of projects, reports, and lists of free resources.

The Bulletin aims to be a *joint venture* between editors, writers and those of you who work in hospitals and other health units. Only *you* know your most important needs, and 'what works' and 'what does not work' in different situations. Please tell us which topics we should cover in the Bulletin, and send us case histories, reports of projects, letters and photographs. The Bulletin is still young and evolving – we need your ideas to improve it. We also need your help to distribute it. So email copies to colleagues (or send us their email addresses so we can) and, if possible, print out copies to share with your staff and put in resource centres.

We look forward to hearing from you.

Ann Burgess
Nutrition Consultant

¹ Wairagala Wakabi *Health situation remains grave in Southern Sudan*. Lancet 2008; 372: 101-102

The **Southern Sudan Medical Bulletin (SSMB)** is a quarterly publication intended for Healthcare Professionals working in the Southern Sudan or those Healthcare Professionals in other parts of the world seeking information on health in the Southern Sudan.

It aims to offer education and information in all specialities and identify research that will inform the development of Health Services in the Southern Sudan. We plan to include reports of original research, critical/systematic reviews, case reports, clinical photographic materials, obituaries, letters to the Editor, use of drugs, medical news of public interest, nutrition matters, public health issues and stories of the health services in the Southern Sudan in the past.

The Bulletin is published in mid-February, May, August and November of each year and is free online at <http://www.iow.nhs.uk/juba> (under journals).

Readers are encouraged to print out copies and pass them to colleagues.

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Resuscitation of Newborn Babies

Dr David Curnock, Visiting Paediatrician, Berega Hospital, Tanzania and Emeritus Consultant Paediatrician, Nottingham University Hospitals, UKa.

Introduction

Many newborns, especially in developing countries, die unnecessarily because health staff have not had the opportunity to learn how to give simple resuscitation. Birth asphyxia (failure to establish breathing at birth) accounts for about 900 000 deaths each year and is one of the primary causes of early neonatal mortality¹. However resuscitation can be successful in low-resource settings. For example, in Dahanu, India, the stillbirth rate dropped from 18.6% to 9% over a three-year period with introduction of a traditional birth attendant training programme in which neonatal resuscitation was a central component¹.

Sub-Saharan Africa has one of the highest rates in the world of so-called stillbirths. Many of these are due to birth asphyxia, and many can be prevented. For example, in Berega Hospital in Tanzania, of the 539 babies born in 2006, 43% needed help at birth. This article, based on experience in Tanzania, explains how to resuscitate newborns. The guidelines are summarised in a chart that can be laminated and put in the labour ward – see below.

Steps to resuscitate newborn babies

Before birth

Before any birth check that you have the following equipment, and that the bag is working correctly.

Equipment

- Clock or watch
- Warm dry towels
- Firm stable surface
- Bag and mask (masks in 3 sizes)
- Suction

Drugs

Of the babies who will respond to resuscitation, only a very small number (less than 1%) will need drugs in addition to the bag & mask and chest compressions described below. The drugs are sodium bicarbonate, adrenaline and dextrose. If you have them then get them out together with an umbilical catheter through which they are given, but if you do not have the drugs or the catheter remain confident because your resuscitation will be successful without them.

^a For more information contact David Curnock at dcurnock@doctors.org.uk

As soon as the baby is born

1. Start the clock or look at your watch
2. Dry the baby with warm dry towels. Babies are small and wet and get cold quickly.
3. Assess the baby

Assess the baby

Assess:

- colour
- tone
- breathing
- heart rate

Decide if the baby falls into group 1, 2 or 3.

Group One – the baby is healthy

- Colour goes from blue to pink.
- There is good tone.
- Breathing is regular.
- Heart rate is >100.

Group Two – the baby needs help

- The colour is blue.
- There is moderate tone.
- Breathing is inadequate.
- Heart rate is <100.

Group Three – the baby is in danger and needs immediate lung inflation

- The colour is blue or white.
- The baby is floppy.
- The baby is not breathing.
- Heart rate is <60.

What to do

Group 1

Hand the baby, dried and covered, to the mother. Then allow skin to skin contact and make sure the baby starts suckling within an hour.

Group 2

- Open the airway. In the unconscious baby airway obstruction is usually due to loss of pharyngeal tone rather than foreign material in the airway:
 - Hold the head in the neutral position (i.e. with the eyes looking directly up at the ceiling: be careful not over-extend the neck).
 - Do you need chin lift/jaw thrust?
- If the baby is still not breathing give inflation breaths – see Box 1. The heart rate usually responds to lung inflation. If there is no heart rate response, check for chest movement. About 95% of babies needing resuscitation will recover within a minute or two *once air enters the lungs*.
- Re-assess. If the lungs are inflating (i.e. the chest is moving) but the heart beat is still <100 and not improving, start chest compressions – see Box 2.

Group 3

- Open the airway. Check the airway position: do you need chin lift / jaw thrust?
- Give 5 inflation breaths. Check the chest is moving.
- Check the heart rate. If it is less than <60, or <100 and not improving, start chest compressions – see Box 2.
- Re-assess.
 - If the baby is improving:
 - stop chest compressions when heart rate is >100
 - stop bagging when respiratory rate >30
 - If the baby is not improving:
 - check airway, breathing, and circulation.
 - if the chest is moving well with the bagging and the chest compressions are being performed, but the heart rate is not improving, then consider drugs: Insert an umbilical venous cannula, and give IV:
 - Sodium Bicarbonate (4.2%) 2ml/kg
 - Adrenaline (1 in 10,000) 0.1ml/kg
 - Dextrose (10%) 5ml/kg
- If after 20 minutes of resuscitation the baby is not breathing and there is no pulse, stop resuscitation and explain to the mother that the baby has died. Give the baby to the mother to hold.

Resuscitated babies

Reassess before transferring to the maternity ward:

- Check the baby's temperature.
- Explain to the mother about the resuscitation.

- Write in the case notes what you have done.

The ABCD of resuscitation

Airway
Breathing
Circulation
(Drugs)

Case history from Berega Hospital, Tanzania

Following a neonatal resuscitation teaching session one morning, that evening one of the Assistant Medical Officers who run the hospital was passing the Labour Suite when the midwife called out that she had a baby who was not breathing (Apgar 4). Up until then such babies had been left to die because no-one had had any resus training. The AMO thought he'd try what he had been taught that morning and to his surprise the baby responded to the bag and mask and started breathing. When the baby was checked the



next morning he was fine, with no abnormal neurological signs, and later that day went home as normal. Altogether a very satisfying experience for the AMO and midwife, not to mention the mother!

Mother and her resuscitated baby (Berega Hospital, Tanzania)

References

1. Spector JM & Daga S. *Preventing those so-called stillbirths* Bulletin of the World Health Organization 2008, 86 (4) 315-316

Box 1. Inflation breaths

Five breaths each sustained for 2-3 seconds at 30cm of water pressure - (the pressure of bag blow-off valve is set at this pressure)

Have head in the neutral position.

Ventilate at approximately 30 breaths per minute.

Bag and mask inflation is usually effective.

Only about 1 in 500 babies do not respond to inflation and need intubation.

The heart rate usually responds to lung inflation.

Box 2. Chest compressions

You want to move oxygenated blood from the lungs to the coronary arteries - (it is not far and it will not take long).

If the chest is not moving it is not being inflated.

Do not start chest compressions until the chest is being inflated.

Do three compressions to one breath.

90 compressions co-ordinated with 30 breaths in one minute

RESUSCITATION OF NEWBORN BABIES

Dry and cover

Assess:
 colour
 tone
 breathing
 heart rate

<p>Group One Blue → Pink Good tone Breathing regularly Fast heart rate >100</p> <p>↓</p> <p><i>Dry and cover the baby Hand to mother</i></p>	<p>Group Two Blue Moderate tone Breathing inadequate Slow heart rate <100</p> <p>↓</p> <p><i>Dry the baby Open the airway ?Inflation breaths Re-assess</i></p>	<p>Group Three Blue or White Floppy No breathing Heart rate <60</p> <p>↓</p> <p><i>Dry the baby Open the airway Give 5 inflation breaths Re-assess Do you need help?</i></p>
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For Group Three

- Check the airway position: do you need chin lift / jaw thrust?
- Check the inflation: is the chest moving?
- Check the heart rate: if it is less than <60, or <100 and not improving, start chest compressions co-ordinated with the breaths:
 3 compressions and then one breath, and then repeated quickly to give:
 90 compressions coordinated with 30 breaths in one minute.

If improving:

- stop chest compressions when heart rate >100
- stop bagging when respiratory rate >30

If not improving:

- check airway, breathing, and circulation.
- if the chest is moving well with the bagging and the chest compressions are being performed, but the heart rate is not improving, then consider drugs: Insert an umbilical venous cannula, and give IV:
 - Sodium Bicarbonate (4.2%) 2ml/kg
 - Adrenaline (1 in 10,000) 0.1ml/kg
 - Dextrose (10%) 5ml/kg

If, after 20 minutes of resuscitation, the baby is not breathing and there is no pulse, stop resuscitation and explain to the mother that the baby has died. Give the baby to the mother to hold.

After every resuscitation explain to the mother what you have done, and write in the case notes.

A chart to laminate and place in the ward. From Dr David Curnock, Visiting Paediatrician, Berega Hospital, Tanzania and Emeritus Consultant Paediatrician, Nottingham University Hospitals, UK. May 2008.

Guidelines for patients: The benefits of good nutrition when you are infected with HIV

Marlou Bijlsma, Nutrition Consultant ^a

When our bodies do not get enough food, or the right foods, we become weak and cannot develop or function properly. Healthy and balanced nutrition means eating the right type of food in the right quantities. People with HIV have higher than normal energy needs (see Box 1). So a healthy diet is especially important if you are infected with HIV. Food cannot cure HIV infection, or treat the virus, but it can certainly improve fitness and quality of life. Eating enough and a balance of different foods helps to:

- Maintain your body weight and muscles,
- Maintain and improve the performance of your immune system.

Box 1. Nutrient requirements for people living with HIV^{1,2}

Energy

- Adults and children with no symptoms of HIV or opportunistic infections need 10% more kilocalories.
- Adults and children with signs of other infections or AIDS need 20-30% extra kilocalories
- Children who have symptoms and are losing weight need 50-100% extra kilocalories.

Protein

- Protein requirement is 12-15% of energy intake (as for non-infected people). So the increased need is similar to that for energy.

Micronutrients

- We do not know if HIV increases needs for micronutrients. But many people with HIV have micronutrient deficiencies and may need supplements. A multi-micronutrient supplement containing 100% of the daily need of all micronutrients may be helpful.
- It is safe to give children aged 6 months to 5 years a high dose of vitamin A every 6 months (see Southern Sudan Medical Bulletin vol 1 issue 1.) and pregnant women iron/folic acid supplements. Otherwise do not give high doses of micronutrients (especially vitamin A, iron and zinc) as these may be harmful.

Why is it difficult for people with HIV to eat enough food?

There are several reasons:

- People living with HIV or AIDS have a weakened immune system and so are more likely to catch infections. Infections reduce appetite but, when you are ill, you need more nutrients to fight the infection,
- Some medicines change the taste of food and reduce appetite,

- Symptoms such as mouth sores, nausea and vomiting make it difficult to eat.
- Symptoms such as diarrhoea reduce the absorption of food,
- Depression, worry and tiredness reduce appetite and willingness to prepare food and eat regularly,
- HIV infection may lead to increased poverty and decreased access to food.

If you eat less than you need, you are likely to:

- Feel cold, especially your hands and feet,
- Get dry skin and hair, body rashes and itching,
- Suffer dizziness,
- Feel depressed,
- Feel tired and weak,
- Lose your appetite.

Why is it important for people with HIV to prevent malnutrition?

If you eat less than you need or do not eat the right foods you risk malnutrition which:

- Reduces physical strength,
- Affects absorption of food,
- Delays wound healing,
- Weakens the immune system. Repeated infections may lead to malnutrition.

People with HIV who are malnourished are sick more often and can develop AIDS and die earlier than people with HIV who are well nourished. It is very difficult to reverse malnutrition so people with HIV/AIDS need to *prevent malnutrition*.



Eat plenty of fruits and vegetables (Marlou Bijlsma)

How can you prevent malnutrition?

To prevent malnutrition you should:

- Understand the importance of eating well,
- Eat a healthy and balanced diet,
- Practice good hygiene to prevent food born infections,
- Maintain a healthy weight. Get weighed regularly and increase food intake if you are losing weight,
- Treat opportunistic infections early,
- Adjust your food intake to deal with HIV related complications – see below.
- Use herbs and spices to improve digestion and stimulate appetite.

^a For more information contact MarlouBijlsma at yahoo.co.uk

Dietary guidelines to prevent or treat the complications of HIV infection^{3,4}

This section suggests how to adjust your diet so you can cope better with the complications of HIV and opportunistic infections^b. Infections increase nutrient needs but often reduce appetite. When you have an infection it is a challenge to eat enough to prevent malnutrition.

How to eat enough when appetite is poor

- Eat foods that you normally enjoy.
- Ask somebody else to prepare food. The smell of cooking may make you feel hungry.
- Take light exercise, such as walking or doing household chores, before a meal.
- Eat with family or friends. If you stay in bed, ask them to join you.
- Eat smaller meals, but more often. Eat whenever appetite is good.
- Eat healthy snacks between meals, like nuts, fruits.
- Sit up straight when eating, this removes pressure on the stomach.
- Drink a lot of fluids, but not during or just before meals, as this will fill your stomach.
- Use spices that you like to improve taste and smell.
- Avoid fizzy drinks, beer, cabbage and beans. These make gas and can make you feel bloated.
- Avoid junk foods. These may satisfy your appetite, but do not provide the nutrients you need.

Changes in taste

Some medicines cause a change in the taste of food, making it less appetising.

How to deal with taste changes



- Sour fruits like orange and pineapple usually taste nice.
- Use spices to improve the taste of food. Find ones that taste nice.
- If possible take medicines after meals.

Sore mouth

Infections can cause a sore mouth and loss of appetite. It is important to maintain food intake even when eating is difficult. Mouth sores will not heal if a person is malnourished.

How to deal with mouth sores

Do:

- Eat soft, mashed foods such as porridge, home made soup, soft fruits such as avocado, banana, papaya or boiled vegetables such as carrot, pumpkin and squash.
- Add nutrient rich liquids like milk to food to increase nutrient content and soften the food. Add groundnut or sim sim paste to boiled vegetables.

^b Adjust these guidelines to your patient's resources and food habits.

- Eat food and drink fluids at room temperature.
- Rinse your mouth with garlic tea or cinnamon tea
- Chew on small pieces of unripe mango or papaya to relieve pain.

If it is painful to brush your teeth, rinse with bicarbonate of soda and water.

Avoid:

- Very spicy and salty foods.
- Acidic and sour foods such as lemons, vinegar or pineapple.
- Very cold drinks or very hot foods and drinks.
- Foods that require a lot of chewing or foods that are sticky like bread with groundnut paste.

If you have oral thrush avoid sugar or sweetened foods. Drinking thyme or garlic tea may help. Increase the energy content of your diet with fat-rich foods.

Weight loss

When the body does not get, or cannot absorb, enough nutrients it uses stored reserves and weight is lost.

Many people with HIV lose weight unintentionally especially during infections. So it is important to treat infections early and to eat more afterwards to regain weight.



When regaining weight you must do exercises to build your muscles. If you eat more without exercising you may grow fat but will not increase your muscles.

How to gain weight

- **Eat more** at each meal including more staple foods such as sorghum, maize, bread and millet.
- Eat more legumes especially fat-rich ones like groundnuts and oilseeds like sim sim.
- Eat meat, fish and eggs if you can afford them
- **Eat more often** - eat healthy snacks between meals such as fruits, seeds, nuts, and avocados.
- Add honey or sugar to tea and porridge.

Digestive problems

Certain foods can cause digestive problems such as bloating or constipation that may be prevented by changing your diet. Some medicines, especially antibiotics, cause digestive problems because they decrease the 'good' gut bacteria that assist digestion.

How to avoid or reduce digestive problems

- Chew your food well before swallowing
- Add papaya to meat dishes.
- Take a short walk after meals.
- Eat fermented foods such as soured porridges or milks, and fermented maize/sorghum drinks especially when on antibiotic treatment.
- If foods like onions, beans and cabbage make you feel bloated, avoid them for a week. Re-introduce them, a little at the time, when you can tolerate them.
- Eat more wholemeal cereals and fruits if you have constipation.

Diarrhoea

You have diarrhoea if you pass watery stools three or more times a day. Consult a health worker if the diarrhoea continues for more than three days, you develop fever or blood appears in the stool.

How to deal with diarrhoea

- Drink plenty of water or other fluids - at least 8 cups per day, to replace lost fluids. For example, drink soups, diluted fresh fruit juice or oral rehydration solution (ORS),
- Eat soft, mashed, moist foods, such as porridge, stews, boiled vegetables (e.g. squash, pumpkin), and fruits (e.g. banana, mango, papaya).
- Eat refined foods, such as white rice, refined maize meal, or white bread
- If fat causes problems, reduce fat intake by using less cooking oil and cutting visible fat from meat. Boil instead of frying food. As soon as the diarrhoea improves, slowly add more fat to your meals to increase your energy intake.

Do not eat foods that make diarrhoea worse; these may be spicy foods and unripe or acidic vegetables and fruits.

Nausea and vomiting

Infection, certain foods, stress, lack of water and some medicines can cause nausea. If vomiting occurs the body loses water rapidly and can dehydrate quickly.

How to deal with nausea

- Sit straight up when eating; try not to lie down until an hour after eating. A short walk after eating can help.
- Drink plenty of fluids, after meals.
- Ask someone else to prepare your food. The smell of cooking food may stimulate nausea.
- The smell of oranges or lemons may relieve nausea. Squeeze the peel or drink lemon juice in hot water or herbal tea.
- Eat dry and salty foods such as toast and crackers.
- Avoid fatty and sweet foods.

How to deal with vomiting

- To prevent dehydration take small frequent drinks.
- After vomiting, slowly drink half a glass of water, diluted soup or diluted fruit juice every 15 minutes, or take Oral Rehydration Solution. Re-start solid foods when you stop vomiting.

Skin problems

Rashes and itchy skin may be related to a poor diet and malnutrition. A compress made with papaya or tomato may bring relief.

Tuberculosis

Many people with HIV are also infected with tuberculosis (TB). People with TB often lose weight.



They need a healthy diet to improve their health, regain weight and replenish nutrient stores. TB patients who eat well have fewer side effects from the TB drugs and recover faster. Adjusting the diet can relieve some of the side effects of TB and TB drugs.

How to deal with the side effects of TB and TB medicines

- ...To avoid vomiting eat a **proper** meal and wait half an hour before you take the TB drugs.
- .. If you have diarrhoea or need to gain weight, follow the recommendations in the above sections.

- ...Antibiotics in the TB treatment destroy both the



harmful TB bacteria and the 'good' bacteria that help digestion and so can cause diarrhoea. To restore the 'good'

bacteria eat fermented foods, like sour porridge, sour milk and opaque beer. Take 1 cup with every meal.

- One of the TB drugs (Isoniazid) can cause numbness or a burning feeling of the skin, especially under the feet. The combination of Isoniazid and alcohol makes it worse. To avoid this:
 - Eat food rich in vitamin B6 such as whole wheat bread, beans, lentils, peas, potatoes, bananas, avocados and when available, meat, fish and liver.
 - If possible take a daily 10mg vitamin B6 tablet.
- ...If you have an irritable cough and it is difficult to sleep, cut up an onion and keep it beside your bed. Onions stimulate secretions that keep the airways moist, and so soothe them.
- .. TB can cause breathlessness. Ginger and garlic may relieve this. So:
 - Use garlic or ginger when preparing food and in tea/infusions. Add chopped garlic or ginger to a cup of boiling water. Drink a cup, three times a day.
 - Put hot ginger compresses on the chest. Boil 1 tablespoon of chopped ginger in 2 litres of water. Soak a towel in the hot water. Squeeze out excess water and place on the chest.

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1. WHO. *Nutrient requirements of people living with HIV/AIDS*. Report of a technical consultation May 2003 www.who.int
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Summary of a report on the Underlying Causes of Malnutrition in Twic County, Warap State, South Sudan. August 2007²

Terry Theuri, Nutrition Coordinator, GOAL, South Sudan

Consecutive surveys in Twic County have shown constantly high levels of malnutrition despite the interventions currently being carried out. GOAL, together with other NGOs, has been carrying out feeding responses to alleviate malnutrition, and more recently food security awareness. Programme coverage and meeting international emergency feeding standards have been a challenge due to the low attendance in the various feeding sites.

To understand the underlying causes of malnutrition hence has become inevitable to identify appropriate interventions. Focus group discussions and key informant interviews were conducted in order to understand the community's perspective on various issues. The discussions and interviews were based on UNICEF's conceptual framework of causes leading to malnutrition, morbidity and mortality. This approach identifies three levels of factors leading to malnutrition: immediate causes, underlying causes and basic causes.

The general findings show that malnutrition is a multi-deficiency syndrome, linked with inappropriate care practices, substandard levels or access to health services, water supply, hygiene & sanitation, inadequate health education and a poor understanding of the importance of food quality, quantity and diversity. In addition women's heavy workloads and cultural beliefs and traditions which probably originated from what could be coping strategies also play a big role in malnutrition.

A keynote to the approach towards alleviating malnutrition is to modify the strategy used in carrying out the interventions recommended. Impact on behaviour change at individual and household level is still wanting. This has always been a challenge because most interventions take a top down approach and disregard the cause of the underlying problems. Behaviour change campaigns have to consider cultural



A focus group meeting (Terry Theuri)

beliefs and traditions, social pressures, and community motivation towards the key positive messages they are passing on.

While disseminating the messages, community prioritised, interactive, participatory methods should be used. To enable this means that capacity building of health promoters is necessary to ensure that they are at a level where they understand the above mix.

Chart 1 summarises the main underlying causes of malnutrition in Twic County and their basic contributors. Chart 2 shows the food availability, seasons and principal morbidities – see below.

Recommendations

- The majority of the underlying causes of malnutrition fall under the social and care environment, showing that, to have an impact on malnutrition in Twic County, this is where programmatic resources should be directed. Nutrition interventions in Twic (based heavily on feeding programmes) do not address these causes adequately at present. Feeding programmes should therefore be discontinued unless there is an emergency, and resources re-allocated to prevention of malnutrition orientated activities.
- Review and strengthen the current CTC (Community Therapeutic Care) approach to prevention and treatment of malnutrition in Twic County that GOAL is currently implementing in partnership with Action Against Hunger-UK.
- Consider other intervention strategies that tackle malnutrition in a sustainable way.
- Nutrition key messages need to be focussed to address key underlying problems found here.

² For full report email Terry Theuri at nutco@goalsouthsudan.org

- Messages need to be given in a culturally sensitive way, be participatory and content needs to be correct. To achieve this, community health educators need to be trained on methods for public health message dissemination and behaviour change communication.
- Develop a culturally appropriate high-energy complementary recipe that uses low cost, locally available foods, and teach it to mothers through cooking demonstrations.
- Continuation and expansion of food diversification initiatives such as seed distributions and introduction of fruit trees with the necessary training, support and follow-up.
- Inclusion of fishing equipment with seed distributions to improve household access to fish.
- Support to breastfeeding and complementary feeding through initiatives that enable

mothers to spend more time at home. For example, the introduction of energy saving stoves made from locally available materials and water purification initiatives (such as filtration and chlorination) that allow mothers to collect water from a near-by source.

- Improve Vitamin A supplementation to post-partum women (to ensure sufficient Vitamin A in breastmilk and to increase mothers' levels ahead of the next pregnancy) through encouraging up-take of postnatal care.
- Investigate culturally acceptable ways for improved sanitation.
- Ensure all GOAL programmes are run in a gender sensitive way, or with a gender bias towards women.
- Increase soap distributions from the clinics as a way to promote hygiene, and further investigate soap making for promotion within the community.

Chart 1 Causes of malnutrition in Twic County

Underlying causes		
Household food insecurity	Inadequate social and care environment	Poor public health
<ul style="list-style-type: none"> ▪ Small number of meals per day ▪ Lack of food variety ▪ Lack of meat in diet 	<ul style="list-style-type: none"> ▪ Women's heavy workloads ▪ Poor complementary feeding ▪ Lack of exclusive breastfeeding ▪ Limits on women's food intake during pregnancy and lactation ▪ Unfair prioritisation for eating within families • Low up-take of healthcare services. 	<ul style="list-style-type: none"> ▪ Lack of availability and accessibility of healthcare services ▪ Poor sanitation and hygiene practices ▪ Use of unsafe water sources
Basic causes		
<ul style="list-style-type: none"> ▪ Gender inequality ▪ Lack of teachers, schools & education systems for primary, secondary and tertiary education <ul style="list-style-type: none"> ▪ Lack of formal government healthcare system ▪ Lack of infrastructure (roads, electricity, communications) <ul style="list-style-type: none"> ▪ Intermittent, unpredictable insecurity ▪ Fragile political situation ▪ Seasonal floods, droughts and hunger gap 		

Chart 2 Twic County - Food availability, seasons and principal morbidities

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Cattle to lowlands (<i>toic</i>)						Cattle to uplands (<i>gok</i>)						
Labour migration away from home				Working at home				Labour migration away from home				
Late dry			Rains									Early dry
Floods										Floods		
			Hunger gap									
		Planting										
					Harvest							
River fishing								Pool fishing				
Wild foods								Wild foods				
Mangoes - some available							Green leaves of various types					
							A few lemons					
Milk available all year for some, except during dry season when cattle are moved to <i>toic</i> . Peak lactation = Aug/Sept. Goats and some sheep all year - eaten on occasions and when necessary												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
			SFP peak adm									
					SFP peak monthly incidence							
		ARI peak				Confirmed Malaria peak						
		Diarrhoeal disease peak										

SFP = supplementary feeding programme

Notice of another GOAL survey

GOAL, South Sudan carried out a multi indicator nutrition, health, water/sanitation and mortality survey along the Sobat Corridor in May 2008.

This showed that the incidence of acute malnutrition was 29.1% and severe acute malnutrition was 4.3%. By WHO criteria both these indicate a critical nutritional condition in the area.

To understand the underlying causes of malnutrition in this area we plan a qualitative research survey soon (see the report of a similar GOAL survey in Twic County in this Bulletin).

In the meantime, in order to reduce malnutrition, morbidity and mortality along the Sobat corridor, GOAL provides comprehensive primary health care (with complimentary community disease awareness and prevention services) through support of primary health care centres at Baliet and Ulang, and primary health care units at Adong, Galachol, Doma, Nagdier and Biong thiang in the counties of Baliet, Panyikang and Ulang.

GOAL recommends that activities to prevent malnutrition should be integrated into the primary health care program. Public health, hygiene and nutrition promotion should be ensured to encourage positive practices. Vulnerable groups in the community should be targeted for general food rations and seed and tool distributions to help them become self reliant in the post cultivation period.

If you would like a copy of the GOAL report on the Sobat Corridor please contact us.

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For your resource centre

Please send your suggestions for other items for resource centres to Dr Hakim at eluzai_hakim@yahoo.co.uk

A Community Guide to Environmental Health is a nicely illustrated new book from the Hesperian Foundation (the organisation that produced 'Where there is no doctor' – see next page).

Drawing the connections between peoples' health and the environments in which we live, this book aims to empower health promoters, development workers, educators, activists, community leaders and ordinary people to take charge of their communities' health. Hard copies of the book cost \$28 and the CD version \$18. Contact hesperian@hesperian.org for more details. The book can be downloaded for free as separate chapters at http://www.hesperian.org/publications_download_EHB.php.



Family Nutrition Guide 2004 is a well-illustrated easy-to-use guide from FAO for health and other development staff working with families. To request a free copy, email nutrition@fao.org or download by googling 'Family Nutrition Guide'.

Footsteps is a free hard copy well illustrated Christian newsletter that covers a variety of health and other development topics, and gives practical tips from around the world. To join the mailing list contact footsteps@tearfund.org. Footsteps is also available in e-version at <http://tilz.tearfund.org> or can be sent direct to your email address (request by emailing footsteps@tearfund.org).

A free CD-ROM

This CD-ROM contains 62 short fact sheets and other practical items on **PMTCT and infant feeding** and **HIV/AIDS, food security and nutrition**. It is available free from Academy for Educational Development, Center for Nutrition, 1825 Connecticut Ave NW, Washington DC 20009-5721, USA. Email nutritionandhiv@aed.org.

August 1st-7th 2008 was World Breastfeeding Week

WHO says:

Breastfeeding is the ideal way of providing young infants with the nutrients they need for healthy growth and development. Virtually all mothers can breastfeed, provided they have accurate information, and the support of their family and the health care system.

Colostrum, the yellowish, sticky breast milk produced at the end of pregnancy, is recommended by WHO as the perfect food for the newborn, and feeding should be initiated within the first hour after birth. Exclusive breastfeeding is recommended for most babies up to 6 months of age -see <http://www.who.int/topics/breastfeeding/en>

Most Southern Sudanese babies are breastfed but some start other foods too late (i.e. after 6 months of age) – we hope to discuss this in another issue of the Bulletin.

What infant feeding problems do you see – please share them with us.

Quiz (based on an article in issue 2 of the Bulletin).

What do you know about undernutrition?

1. What are the *immediate* causes of undernutrition?
2. Why do infections increase the risk of undernutrition?
3. Which age groups are most likely to be undernourished?
4. At what age should most infants start other foods in addition to breastmilk?
5. How long should women leave between pregnancies to reduce the risk of undernutrition?

See answers below.

Useful items on websites

If you have good access to the Internet you can download for free:

- **Child Health Care: a learning programme for professionals** from the website www.childhealthcare.co.za. This is written for under-resourced areas of Africa and deals with most of the main causes of death and illness during childhood. You can download and print out the separate sections. The course was developed at the School of Child and Adolescent Health, University of Cape Town, South Africa and it may need some modifications for use in Southern Sudan – but it does provide a lot of useful material.
- **The prevention and control of childhood pneumonia** a special issue of the WHO Bulletin (May 2008 vol 26 no 5) from <http://www.who.int/bulletin/volumes/86/5/en/index.html>.
- Hesperian Foundation books such as **Where there is no doctor** and **Helping health workers learn**. These are listed and can be downloaded from http://www.hesperian.org/Publications_and_Resources.php
- **MAQ Briefs on family planning and reproductive health.** Maximizing Access and Quality (MAQ) is an initiative of USAID and partners and aims to identify practical, cost-effective, and evidence-based interventions that improve the access to and quality of family planning and reproductive health services. MAQ produces 2-page *Global Health Technical Briefs* that include the background of the topic, lessons learned in programme application and where to get more information. You can find the Briefs at <http://www.maqweb.org/techbriefs>. An example is:

Brief 48 (2008) on Preventing Postpartum Hemorrhage - see <http://www.maqweb.org/techbriefs/tb48posthem.shtml>. In summary it recommends:

- Administration of a uterotonic drug, preferably oxytocin, within 1 minute of childbirth to cause the uterus to contract;
- Controlled traction of the umbilical cord with counter pressure to the uterus, which supports and stabilizes the uterus; and
- Massage of the uterus through the abdomen after delivery of the placenta to keep the uterus well contracted and prevent further blood loss.

Free newsletters sent by email

AED-SATELLIFE (www.healthnet.org), a non-profit organization, offers 4 health newsletters for health care providers in low and middle income countries, free of charge. Sent via email, the newsletters cover primary health care topics such as HIV/AIDS, malaria, TB, pneumonia, diarrhoea, cardiovascular health, maternal and child health, nutrition, and more. Content includes selected abstracts and full text from peer-reviewed medical and health journals.

The newsletters are:

- **HealthNet News**: up-to-date clinical research findings (sent weekly)
- **HealthNet News-AIDS**: clinical and public health information (sent twice/month)
- **HealthNet News-Community Health**: current, thematic public health content (sent monthly)
- **HealthNet News-Nursing**: nursing practices, management, and care (sent monthly)

To subscribe, email hnet@healthnet.org

In March the Ministry of Health, GOSS with support from UNICEF and WHO published the first issue of **'EPI Southern Sudan Update'**.

This reported:

- Details of the grant from Global Alliance for Vaccines and Immunization (GAVI) which will help boost immunization coverage;
- The opening of the EPI and Nutrition office at MoH;
- That vitamin A supplementation and deworming was added to the 3rd and 4th NIDs;
- That a mass measles campaign had reached 3.67 million children.

To receive future issues of the **Update** contact alako_k@yahoo.com or kcumhamangalam@unicef.org

Immunization Schedule

Children under one year:
At birth - BCG, polio
At 6, 10 and 14 months – Polio, DPT
At 9 months – Measles

Women between 15 – 45 years – TT1, TT2

Summaries from journals, reports, etc.

Please send us more material for future issues of the Bulletin.

Sudan Food Assistance Transition Study

December 2007

FANTA Project, Academy for Educational Development, Washington DC, USA.

Available at www.fantaproject.org

This study was designed to:

- assess the impact of stability resulting from the Comprehensive Peace Agreement on the most food insecure and nutritionally vulnerable areas and groups in Southern Sudan and
- make recommendations about how USAID Title II and Disaster Assistance resources should be used to address the food insecurity.

Three I's to reduce the burden of TB in people with HIV

By Theo Smart from the e-newsletter "HIV & AIDS Treatment in Practice (HATIP - see below) #112

This year, approximately 750,000 people with HIV will develop TB, mostly in sub-Saharan Africa. About 230,000 of them will die. But TB is both a preventable and treatable illness so it does not have to be a death sentence in people with HIV.

The 'Three I's

There are three essential activities that all HIV programmes should be doing that could: - protect people with HIV from TB infection; - help prevent active disease from developing and - identify active TB disease early and improve the chances of cure. These are:

1. **Intensified case finding (ICF) for active TB:** aggressive screening can lead to the early diagnosis of TB — improving the response to treatment and reducing the likelihood of it spreading to others. It also offers an opportunity to protect people with HIV who don't yet have TB by:
2. Giving **Isoniazid preventive treatment (IPT)**, an antibiotic that could reduce their risk of developing active TB by 33-62%; and
3. Practising **TB infection control (IC)** which involves measures that can reduce the spread of TB to vulnerable people with HIV, health care workers and the community.

HATIP is an electronic newsletter on HIV treatment for health care workers and community-based organisations in resource-limited settings. It has almost 29,000 subscribers in over 100 countries of which about 45% are in sub-Saharan Africa. You can read the whole of the newsletter and get further issues by subscribing at <http://www.aidsmap.com/cms1260989.aspx>.

For further information visit the HATIP section of www.aidsmap.com/hatip.

Making water safer for people living with HIV in Southern Sudan

Extracted from pronut-hiv listserve (16 May 2008).

Due to their weakened immune systems, people living with HIV are particularly susceptible to pathogens that can be present in untreated water. Since the end of the war, treatment tablets have become available in the shops, and HIV-positive people who can afford them are now able to protect themselves from the outbreaks of cholera and other diarrhoeal diseases that are common in this region.

Now Population Services International (PSI – see <http://www.psi.org/child-survival>) include water treatment tablets in the basic 'care packets' they distribute to people with HIV every three months. Each care packet contains 90 tablets (each tablet treats 25 litres of water), a jerry can with a tap at the bottom, water containers, condoms, two mosquito nets and educational materials on malaria and how to prevent HIV infection. The decision to include water tablets in PSI's care packets was partly in response to pressure from people living with HIV.

The distribution of care packets to people living with HIV is to be expanded in the near future. Meanwhile, several organisations, including UNICEF and Solidarits, a French NGO, are raising awareness about hygiene and sanitation, drilling boreholes and repairing existing water points across the country.

Answers to quiz

1. Poor diets and Disease
2. Infections reduce appetite and absorption of nutrients and may increase nutrient needs.
3. Children ages 6 – 24 months and women of reproductive age.
4. 6 months.
5. 2- 3 years.

Information to Authors

Articles submitted to the Southern Sudan Medical Bulletin must not be submitted simultaneously to other publications and should not have been accepted for publication elsewhere. All articles may be peer-reviewed by two independent reviewers. Authors and members of the Editorial Board must declare any conflict of interest.

Articles by an author suspected of medical or other misconduct will not be published.

Referencing articles

The Bulletin uses the Vancouver style in which references are cited in numerical order with the number in superscript in the text (for example, "treat according to latest guidelines¹"). Journal names may be written in full or abbreviated (e.g. BMJ for British Medical Journal). Page numbers should be written as 10 – 19. Please include websites if available. See examples below:

Articles

1. Majok MN, *New Treatment for Trypanosomiasis*. BMJ 2008; 400: 10 – 15.

Books

2. Lado CS, Woro ME. *Health Development in Southern Sudan*. Juba University Press: 2001.

Chapters

3. Gboduwe C, Lumayat A, editors. *The Nodding Disease*, 10th Edition. Nairobi: East African Publishing House 1998.

Reports

4. Department of Health. *National Service Framework for Coronary Disease*. London: Department of Health 2000 (www.doh.gov.uk/nsf/coronary.htm).

Images

Please compress images so the Bulletin is quick to download.