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The Principal, Ms Petronella Wawa [centre], Ms Bilha Achieng, Project Assistant Manager (RMF) [left of Ms Wawa] and new trainees of the new Juba College of Nursing and Midwifery (*J. White/UNPEA archives*)

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

Editorial: Juba College of Nursing and Midwifery

Everyone working in the health services in South Sudan knows that there is a serious shortage of well-qualified nurses and midwives. For example, the following numbers of staff, and the ratio of staff to population, who are presently known to the Directorate of Nursing and Midwifery are:

Registered Nurses (Diploma in Nursing)	40 (0.4/100,000)
Registered Midwives	02 (0.02/100,000)
Certificated Nurses (equivalent to 'British Enrolled Nurses')	~1000 (10/100,000)
Traditional Birth Attendants (no formal qualifications)	2000 (20/100,000)
Nurses and Midwives of Southern Sudanese origin working in Kharoum	Unknown
(The population of the Southern Sudan was 10,000,000 at the last census two years ago.)	

More accurate data are presently being collected – but there is no doubt that the numbers fall far short of those needed, particularly for midwives. This presents a big challenge especially as the new constitution of Southern Sudan specifically highlights women's health as a priority for the country's well being and future success.

So the opening of the Ministry of Health's new **Juba College of Nursing and Midwifery** is an encouraging step forward on the road to improving health services. The first group of trainees are enrolled and in preparatory classes. Plans and funding for a purpose-built college, and the resources needed to equip it, are in place. The Principal, Ms Petronella Wawa, and some tutors have been recruited. As well as the Ministry of Health, other stakeholders include United Nations Population Fund, Real Medicine Foundation, World Children's Fund, the World Health Organization, St. Mary's Hospital, Isle of Wight-Juba Hospital Link, the United Nations Development Programme/ Global Fund and the Japan International Cooperation Agency.

We would like to thank all everyone who is supporting the new college; we will give updates on the progress trainees in future issues of this journal.

Janet Michael
Director of Nursing and Midwifery
Ministry of Health
Government of Southern Sudan

For more information on the new college see the article on page 56.

The SSMJ team is pleased to welcome Dr Edward Eremugo Luka to the Editorial Board.

The **Southern Sudan Medical Journal** is a quarterly publication intended for Healthcare Professionals, both those working in the Southern Sudan and those 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 to 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, letters to the Editor, use of drugs, medical news of public interest, and nutrition and public health issues.

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We encourage readers to print copies and pass them to colleagues.

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Understanding the stigma of leprosy

Edward Eremugo Luka MBBS, MscIH^a

Introduction

Leprosy is the oldest disease known to man. The earliest written records describing true leprosy came from India around the period 600 BC¹. Leprosy is caused by *Mycobacterium leprae*; the Norwegian, Dr Amauer Hansen, isolated the bacterium in 1873. Leprosy is also called Hansen's disease after him. Although it is the first human pathogenic bacterium to be defined, *M. leprae* is the only bacterium causing disease in man that has not been cultured in the laboratory².

Leprosy situation



Figure 1. Lepromatous leprosy patient presenting at leprosy clinic. Photo: Edward Luka

Stigma of leprosy

The fear of leprosy leads to the stigma and discrimination and is due to lack of understanding and knowledge about leprosy - which increases misconceptions about the disease's transmission and treatment. The fact that most of those with untreated leprosy end up with severe deformities and disfigurements has contributed to the stigma⁴ – see Figures 1 and 2.

Definition of stigma

The commonly used definition of stigma is “the attribute that is deeply discrediting” and “that reduces the bearer from a whole and usual person to a tainted, discounted one”⁶.

Another definition states that stigma is “a social process that exists when elements of labelling, stereotyping, separation, status loss and discrimination occur in a power situation that allows them”⁷.

Stigma can be classified into three types:

- Enacted - the commonest type in which there are actual experiences of discrimination.
- Perceived - stigma viewed from the perspective of the patient. It is “the devaluation, shame, secrecy and withdrawal triggered by applying negative stereotypes to oneself”.
- Self stigma - the fear of being discriminated against⁵.

Leprosy is found throughout the Sudan with areas of concentration in the South, West and East. Sudan has achieved the elimination level of leprosy, defined as a prevalence of less than 1/10,000 population. At the end of 2008, the registered prevalence was 1,892 cases. The number of newly detected cases was 1,901, including data from Southern Sudan³.

Some studies have concluded that stigma affects many aspects of the lives of people affected by leprosy including “mobility, interpersonal relationships, marriage, employment, leisure activities, and attendance at social and religious functions”⁵.

Stigma process

Understanding how stigma develops is crucial for planning strategies to reduce it. Stigma associated with leprosy does not start immediately after the disease starts, but develops over time in 2 stages:

- Stage 1 - the cognitive dimension. This describes how much influence the disease has on the person's life. The patients pass through the concealability course, disruptive, aesthetic, origin and peril dimensions⁸.
- Stage 2 - the affective stage in which the social devaluation of the individual occurs.

Heijnders describes a similar process of stigmatisation. In her studies in Nepal, she noted that people with leprosy go through two stages in coping with their condition: the concealment phase and the exposure phase. In moving from one phase to the other, there are triggers to exposure and discrimination such as the visible signs of the disease. However, she found that in the process, stigma

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enforces the inequalities that are found in the community with regards to gender, age and social class⁹.

The impact of stigma

Having a stigmatising disease like leprosy severely affects aspects of life such as social status, employment opportunities or jobs, marriage and family life⁷. These can be summarised as effects on:

- the individual
- the community
- public health programmes and interventions^{10, 11}.

Effects on the individual

As noted by Weis and Ramakrishna “the impact of the meaning of the disease may be a greater source of suffering than symptoms of the disease”¹². Individuals with leprosy have emotional stress and anxiety, which may lead to psychological and psychiatric morbidity^{13, 14}, as well as a decreased quality of life on the WHO Quality of Life Assessment BREF^b ¹⁴. They become isolated and lack motivation to continue treatment (if already started). There is a risk that the disease will progress with resultant disability and complications. Individuals may have decreased status in the community because of their conditions⁷. In the case of leprosy they may become destitute and resort to begging as the only way of survival^{4, 15}.

Studies have shown that these effects are greater in female than male patients¹⁶. A review of leprosy patients in South East Nigeria from 1988 to 1997 found that the effects were greater in women than men. The women also tend to present late, have complications and disabilities^{17, 18}.

Effects on community interaction

The social participation of persons affected by leprosy is much more distressing to them than their individual effects. It impairs their quality of life in various ways^{10, 12, 18, 19, 20}. Persons with stigmatising conditions experience problems in their marriages or difficulties in getting married and in their employment or getting employed. Their community interaction is affected, such as social relationships and friendships. Their families may experience reduced educational opportunities, leading to further inequities between those affected and those who are not. All of these negative effects result from poor community knowledge of the disease, and the misconceptions held about them.

Effects on public health programmes

The impact of stigma on public health programmes and interventions have been well documented and discussed^{10, 12}. People with the stigmatising conditions may conceal or deny their condition and delay seeking treatment – which may:

- result in the diseases getting worse and increase the risk of complications
- increase the transmission of the disease in the community
- make it difficult to trace contacts and those defaulted from treatment - important in leprosy and TB²¹.

Some patients may not adhere to treatment when diagnosed especially for treatment that takes a long time, like TB and leprosy¹². Risk of drug resistance developing is then very high. In general therefore stigma results in an increased burden on the general health services.

Fighting the stigma of leprosy

Fear and stigma are difficult to remove. They can only be dealt with through a combination of strategies. Heijnders and van der Meij¹⁰ described 11 levels of interventions and strategies that can be used to fight stigma. These focused on:

- changing the image of the diseases
- integrating programmes
- rehabilitating patients and
- media campaigns.

These interventions are now used in most leprosy control programmes.

WHO encourages integrating leprosy into the general health service. Leprosy patients should be treated in the same outpatient department as those with any other disease, showing the patients and their communities that leprosy is not a 'different' disease. Different countries are in different stages of implementing these interventions that have been shown to reduce stigma¹⁹.

Education and media campaigns help to correct false beliefs and raise awareness of new advances. They include information about leprosy and its treatment, context-specific media messages addressing misconceptions and traditional beliefs about leprosy, positive images of leprosy and testimonies of people successfully cured of leprosy²². Physical and socio-economic rehabilitation helps to restore self-esteem and status in the community, and assists patients to find employment. Most studies have shown that the stigma of leprosy is aggravated by the physical deformities associated with the disease^{19, 23, 24}. So programmes that prevent disabilities developing or identify patients most at risk of developing them, can reduce the effects of stigma^{20, 25}.

b BREF = Best Available Technique Reference document

Psychological or physical changes reported by the patients can predict development of participation restriction (i.e. the reduction of their involvement in life situations such as social, economic, civic, interpersonal, domestic and educational domains of daily living).

A study in Nepal showed that people affected by leprosy who were in the Stigma Elimination Programme (STEP) ²⁶ were less stigmatised and participated more in the community than those who were not. The assessment of the stigma in this study used the Participation Scale developed by van Brakel¹¹.



Figure 2. Persons affected by leprosy with disabilities in Mayo, Khartoum. Photo: Edward Luka

STEP participants were more empowered and become change agents in their own communities. This kind of intervention has been proven to be effective, as demonstrated in Ethiopia²⁷.

Social marketing strategies (the designing and implementing of programmes to bring social change by using the concepts of commercial marketing) can change community attitudes to leprosy. When used correctly, they can be highly effective at reducing stigma and improving the lives of patients. Social marketing can be done through mass media campaigns, schools and involvement of community leaders. These methods have been successfully implemented in Sri Lanka^{28, 29}.

Conclusions

Leprosy has always been linked with stigma. For many people stigma is synonymous with leprosy. This is due to:

- leprosy often causing severe disfigurement and disability
- lack of knowledge about the disease.

The key messages that can overcome stigma are:

- leprosy is curable
- drug treatment is available free of charge
- there is no need to discriminate against people affected by leprosy.

If the misconceptions about leprosy are not changed, it will be difficult to eliminate leprosy as a public health problem.

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Edward Eremugo Luka is a PHC Advisor in the Sudan Health Transformation Programme Phase Two (SHTP II), a USAID funded project in Southern Sudan. He previously worked for six years with The Leprosy Mission International Sudan Programme. The article, with updated data, is based on his Masters' thesis on the assessment of leprosy stigma in Sudan.

The need for culturally-relevant research

Two studies highlight the need local research (like the article above). These looked at the gap between research and practice in four areas of the Millennium Development Goals (malaria, contraception, childhood diarrhoea and childhood tuberculosis) across 10 low- and middle-countries. Results showed that:

- % of Healthcare providers who, at least once a month, read journals:
 - From their own country = 18%
 - From high –income countries = 5-8%
- % who would change clinical practice based on research from:
 - own country = 85%
 - own region = 66%
 - from high-income country = 56%

See: *SciDevNet* article <http://www.scidev.net/en/news/gulf-between-health-researchers-and-doctors-highlighted.html> and *Bridging the gaps between research, policy and practice in low- and middle-income countries: a survey of health care providers* <http://www.cmaj.ca/cgi/rapidpdf/cmaj.081165v1> and: *a survey of researchers* <http://www.cmaj.ca/cgi/rapidpdf/cmaj.081164v1>

Quiz: Do you know?

- Which five risk factors are responsible for 80% of all risks for stroke?
- Which is the most important?

Answers on page 59.

What shall we do about: Preventing child abuse and neglect

SSMJ editorial team and Cathy Groenendijk^a

Like doctors and other healthcare professionals worldwide, many of us see children with injuries caused by physical violence and girls who have been raped. Sometimes we know that a child is malnourished, sick or traumatised because of abuse or neglect.

The aim of this article is to raise the issue of child abuse and neglect and to start a dialogue on how healthcare and other professionals can better protect South Sudan's children. **So please send us your views and suggestions for tackling this problem.**

Extent and causes

Child abuse and neglect occur almost everywhere - but receive relatively little attention¹. The extent of the problem is not known but international data indicate that worldwide:

- At least 40 million children are abused or neglected.
- 12.7% of injury deaths are the result of abuse.
- Approximately 0.6–1.8% of children in high HIV-incidence countries in Southern Africa experience penetrative sexual abuse by an AIDS/HIV infected person before 18 years of age².
- More than 80% of children are physically punished.

86% of mothers in 29 developing countries said they used some form of violent discipline, 19% report severe physical punishment and often the children punished are very young¹.

Child abuse and neglect is often linked to:

- Children being separated from their families because of war or exile and/or living in areas of insecurity.
- Domestic violence, divorce of parents, parents sending children to live with relatives because they cannot take care of them.
- Children living with step-parents (who are often the biggest offenders of child physical abuse).
- Parents/carers being ill (physically or mentally), disabled, or misusing alcohol or other substances.
- Children being forced to work long hours or late in the night.
- Children leaving home (e.g. due to poverty) and living on the streets
- Teachers bullying, beating or abusing (physically, verbally or sexually) pupils at school.

- Girls being forced into underage marriage, genital mutilation and/or initiation with tribal marks (e.g. the Mundari and Dinka)

In turn these situations may occur because of:

- Insecurity and the aftermath of the war.
- Traditional methods of discipline at home and at school
- Traditional beliefs about female genital mutilation
- Traditional beliefs on roles and behaviour of girls. This is especially occurs when girls are 12-13 years old and become adolescents. A girl may try to express the confusion inside her by being depressed or self-conscious, and refusing to work, answering parents incorrectly or talking loudly. But her parents are likely to become angry. Most parents do not accept any challenge from girls although they do from boys. It is worse where the girl is not living with her biological mother.
- Traditions related to early marriage and pregnancy
- Lack of knowledge by families, teachers and health/social workers of children's rights (for food, shelter, schooling, etc.), and of the consequences of abuse.
- Beliefs related to how to avoid AIDS/HIV
- Extreme poverty when families may need child wages or for children to leave home.
- Exploitation of child domestic servants. They may be given tasks that are unsuitable for their age, or not fed enough and may be severely punished if they do not perform well.

International studies indicate that child abuse and neglect, including sexual abuse, is most often carried out by family members, neighbours and teachers². Girls, orphans and disabled children are particularly vulnerable.

Consequences

Abuse and neglect can lead to:

- Death, disability and disease including AIDS/HIV.

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- Physical and mental trauma, poor cognitive and social development (e.g. lack of concentration), fear.
- Malnutrition, stunted growth, loss of appetite, and mental and other illness.
- Lack of schooling including coming late to school or misbehaving in class.
- Early marriages and early teenage pregnancy, criminal abortion.

Example³: In May 2010 a girl aged 12 years travelled to Kampala and had her pregnancy removed. She is now back in Juba.

- Difficult childbirth due to genital mutilation
 - Employers exploiting children
- Abuse and neglect are the biggest causes of 'streetism', i.e. children running away from the 'home' to the more unsafe streets. There children, especially girls, often become sex workers (with increasing risks of HIV, unwanted pregnancy, etc.). Almost all the street girls and boys in Juba are involved in crime and so often suffer police harassment and imprisonment. Many abused children adopt violence as a way to survive; they attack anyone instinctively without warning even when they cannot defend themselves - which can result in serious physical trauma.

Street children in Juba³

Children come with their families or escape to Juba to look for employment (e.g. shining shoes, collecting water bottles or washing cars). Often parents can not find work so they turn to brewing or abusing alcohol leaving their children to run wild. Some children return home at night, but for many home is the street, shop veranda or local field. In 2009 there were at least 1,200 children spending their days in Juba city's markets⁴.

Girls on the street risk violence, including sexual violence, and trafficking for domestic work or sexual abuse and exploitation, and have no access to healthcare, both generally and following rape. Rape is very common in the city's markets at night and in places of entertainment like dancing halls.

What can we do about child abuse and neglect?

Internationally child abuse is often given low priority – and the same is true in South Sudan. Reasons may be:

- Other health and social problems are so enormous that it has a low priority.
- Lack of funds and training and political will to deal with it.
- Attitudes of health workers. Even female doctors may condemn a little girl after rape accusing her of putting herself in danger.

- Low public awareness of what child abuse means – and its extent.
- Reluctance to acknowledge that parents and other carers do harm children.

The only place presently able to deal with sexual violence is Juba Teaching Hospital. Although staff in units in four Juba police stations, and several healthcare workers, have been trained to deal with gender-based violence few cases reach the courts or hospital. There are as yet few social workers trained to deal with sexual or other abuse or the budget to support them.

How we, as healthcare workers, can protect children

The advice and information of healthcare professionals is often taken seriously by both the authorities (e.g. police) and by families. We have a special responsibility to do what we can to treat abused children and prevent child abuse and neglect. So:



Vulnerable girls in Juba
(credit CCC)

- Look out for signs of abuse and neglect when you see children in OPD/clinics etc (e.g. unexplained bruising, broken bones or parents known to have problems related to poor health or substance abuse).
- Interview children you suspect to having been abused. Most children report physical abuse when you asked them in a non-threatening way. You can use dolls to represent, for example, a father, mother and child. The girl (or boy) can point to the doll showing where the abuse took place.
- Try to find, and if possible deal with, the underlying causes of abuse. This should include counselling the family. Counselling should always be part of the treatment of child abuse.
- Report cases of severe abuse to the Social Welfare and police - who should monitor and record all these cases.

To prevent child abuse we can discuss with parents, carers and teachers:

- The consequences of physical and verbal abuse at home or at school. Most families want their children to become useful members of the family. So they need to know that abused and neglected children develop less well and do less

well at school. Many young offenders have been abused in the past.

- The dangers of sexual abuse and how it can result in unwanted pregnancies even in very young girls – leading to the child dying or becoming disabled, malnourished or HIV+, dropping-out from school, leaving home or becoming a sex worker.
- The importance of good food, immunisation, cleanliness and prompt health care to prevent malnutrition and infections.
- The right of every child to a secure home, protection from violence, sex abuse and exploitation, to good nutrition, medical care, education, the right to express themselves and dignity.

Health professionals can also:

- Promote child-friendly areas in health care facilities and awareness messages for children to know their rights. We should all set a good example by treating children and their families with respect in hospitals, clinics and within our own households.
- Encourage the Ministry of Health to co-ordinate better with the Ministry of Social Development and Special Child Protection Units at Police stations in order to tackle child abuse. There should be a trained representative for child protection on local counsels who collaborates with these authorities. Every child should feel able to report abuse and be protected.

- Support other organisations working in this field. These include **UNICEF**, **UN Population Fund (UNFPA)**, and **Confident Children out of Conflict (CCC)**. **Please tell us of others you know.**

CCC runs a drop-in centre for street girls from desperately poor neighbourhoods (Konyokonyo, Kasava, St. Mary and Salakana). The children come in the morning to brush, bathe, change their clothes and take breakfast before they go to school. They come back from school and have lunch, do homework, play games, have supper and go back to where they live. CCC is constructing a centre for street girls where the children will get more services and protection. CCC enrolls Orphans and Vulnerable Children from these neighbourhoods for basic education, follow up, and carries out counselling of both children and caretakers.

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4. Information from Children of the World - Human Rights (EMDH)

Did you know? About 3.8 million deaths occur every year in babies younger than 28 days—of which 99% are in the developing world—and deaths in the first month of life account for 42% of deaths in children younger than 5 years.

Reference: UNICEF. The state of the world's children 2009. New York: UNICEF, 2008.

So the following item is particularly encouraging:

Concluding remarks of a speech by Melinda Gates at the Women Deliver conference in June 2010 "In the world we see, health workers in every country will have the tools and training they need to help women and children... In the world we see, women everywhere will have the knowledge and power to save their lives and the lives of their babies. This vision is precious to me and to all of us at the Gates Foundation. And so I'm thrilled to announce the Foundation will invest major new resources to help make this vision a reality. **Today we're committing new grants worth \$1.5 billion over the next 5 years to support family planning, maternal and child health, and nutrition programs...** We're making a new world for poor women and children. A world in which every birth is a promise. A promise for a better future." The video of the full speech is available at:

http://www.livestream.com/womendeliver/video?clipId=pla_7e848eb5-43eb-41e4-a5d3-e6de7cab31bc&utm_source=library&utm_medium=ui-thumb

[seen on HIFA2015 email forum www.hifa2015.org]

Drugs reviews

Compiled by David Tibbutt MD

1. Drugs and damage to the liver

This short review was inspired by an article in "*Hospital Medicine*"¹. The availability of plasma liver function tests (LFTs) to monitor hepatotoxicity (liver [hepatic] damage) is uncommon in many resource-poor countries. Even so we must be aware of and not ignore the risk of hepatic damage from many commonly used drugs. It is important to realise that drugs are the commonest cause of liver failure.

The likelihood (susceptibility) of an individual suffering the hepatotoxic effects of any chemical depends on many factors:

- In **children salicylates** and **valproic acid** more commonly cause microvesicular steatosis^a.
- **Older people** are more at risk from **isoniazid**.
- **Females** are more at risk of adverse drug reactions in the liver than males.
- **Nutrition** influences the chance of hepatotoxicity.
- **Alcohol abuse**: e.g. small amounts of **paracetamol** may cause liver damage.
- **Pregnancy**.
- **Underlying liver disease**: toxicity may not necessarily be more common but if a toxic effect does occur it is likely to be more serious because of the reduced liver reserve.
- **Genetic** differences in enzymes (e.g. cytochrome p450) and immunity.

There are two main mechanisms in the generation of a toxic effect; these may work separately or together:

- An immune response (in which there may be a rash, fever and eosinophilia which should be fairly easily detected on a blood film) and/or
- Interference with cellular biochemistry.

A number of biochemical and clinical patterns of drug-induced hepatotoxicity may occur as shown in Table 1.

Table 1. Patterns of drug/chemical hepatotoxicity

Type	Features	Enzymes
Acute hepatocellular damage (commonest)	Hepatitis, necrosis, steatosis	ALT = 2 x ULN or Ratio ALT : ALP > 5
Acute cholestatic ^b damage	Pruritus (itching), jaundice, pain, rash, fever	ALP > 2 x ULN or Ratio ALT : ALP < 5
Mixed		Ratio ALT : ALP = 2 - 5

[ALT: alanine transaminase; ALP: alkaline phosphatase; ULN: upper limit of normal.]

How do we conclude that a drug (or chemical) may be the cause of an hepatic problem?

- Firstly **consider** the possibility - i.e. be very suspicious and remember the eight bullet points listed above.
- If the patient has been on the drug for over 3 months the chance of toxicity is less likely.
- Has the clinical/biochemical situation improved since the drug was withdrawn?
- If the drug has been given more than once (not a wise thing to do!!) has the patient experienced the same toxic problem?

a 'Microvesicular steatosis of the liver' refers to a type of liver fat accumulation. It was originally described in association with conditions which share a limited number of similar features: acute fatty liver of pregnancy, Reye's syndrome, sodium valproate toxicity, high-dose tetracycline toxicity and certain congenital defects of urea cycle enzymes. Recently the disease has been described in many conditions: alcoholism, toxicity of several medications, delta hepatitis in South America and Central Africa, sudden childhood death, congenital defects of fatty acid beta oxidation and cholesterol ester storage disease. Our understanding of the pathogenesis of microvesicular steatosis is limited. In some cases it may be linked to a mitochondrial abnormality.

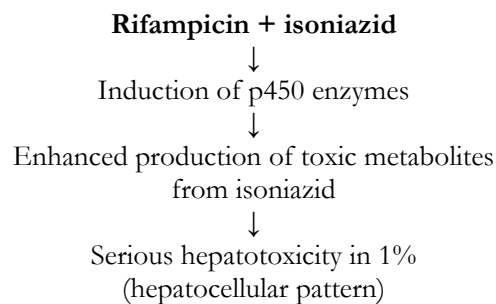
b Conditions giving rise to **cholestasis** (i.e cholestatic situations) fall into two main categories. Those where there:

- is a mechanical blockage in the duct system - obstructive or extrahepatic cholestasis.
- are disturbances in bile formation - hepatocellular or intrahepatic cholestasis.

The problem with many patients is that they are taking several drugs often including herbal traditional remedies.

Drugs that may cause hepatic problems

- **Sulphonylureas** (e.g. glibenclamide, chlorpropamide) may cause an hepatitis with a cholestatic or granulomatous^c pattern associated with hypersensitivity features of rash, fever, arthralgia and eosinophilia. In severe cases erythema multiforme and exfoliative dermatitis may occur. These reactions usually appear within the first eight weeks of treatment.
- **Chlorpromazine and prochlorperazine** commonly cause cholestasis.
- **Phenytoin and carbamazepine** may lead to the 'reactive metabolite syndrome'. This occurs up to eight weeks after taking the drug. The features are fever, rash, lymphadenopathy and often Stevens-Johnsons syndrome. There is frequently hepatocellular damage.
- **Erythromycin** may lead to pruritus (itching), jaundice and a blood eosinophilia reflecting cholestatic toxicity.
- **Anti-tuberculous drugs** cause LFT disturbance in 20% of patients but do not usually lead to clinical problems as the abnormalities resolve even as treatment is continued. Nevertheless hepatic toxicity can be serious and life-threatening. So beware!



Similarly **pyrazinamide** causes hepatotoxicity. This is dose-related so **reduce the dose for small patients**.

Advice for the treatment of tuberculosis

Measure LFTs before treatment and if abnormal repeat every two to four weeks. If enzyme levels rise to more than five times the upper limit of normal withhold treatment until there is a return to baseline figures.

- **Anti-retroviral drugs (ARVs):** many raise the liver enzymes (e.g. **ritonavir, saquinavir**) and some cause a severe hepatitis (e.g. **nevirapine**) which may be fatal, or hepatic steatosis (e.g. **stavudine**). As the availability of ARVs increases there will be a need to widen the facilities for LFTs.

Herbal medicines

Herbal and other 'traditional' remedies are used widely in Africa. However little has been published about their use or adverse effects.

Reference

1. Rashid M, Goldin R and Wright M. Drugs and the liver. *Hospital Medicine* **65** (8): 456 – 461. 2004

2. Side-effects of drugs used to treat tuberculosis

The review above stated that "**Anti-tuberculous drugs** cause Liver Function Test (LFT) disturbance in 20% of patients but uncommonly lead to clinical problems as the abnormalities resolve even as treatment is continued". However in a small number of patients severe hepatotoxicity may result. The more drugs that are prescribed to a patient **at the same time** the more likely there is to be an adverse reaction. The treatment of tuberculosis usually involves the use of four drugs in the initial phase. This review summarises the potential

^c A **granuloma** is a roughly spherical mass of immune cells that forms when the immune system attempts to wall off substances that it perceives as foreign but is unable to eliminate. Such substances include infectious organisms such as bacteria and fungi as well as other materials such as keratin and suture fragments. A granuloma is a special type of inflammation that can occur in a wide variety of diseases. The adjective **granulomatous** means *characterized by granulomas* (from "Wikipedia").

complications that rifampicin, isoniazid, pyrazinamide and ethambutol may cause. Thiacetazone is mentioned although it is much less commonly used.

Potential complications

Rifampicin

- Gastro-intestinal symptoms are common with many drugs and often these will clear if the patient is able to tolerate them: **anorexia, nausea, vomiting and diarrhoea.**
- **Urine, saliva and other body fluids may be coloured orange-red:** this can be very alarming to patients so they should be warned and reassured.
- The **hepatic microsomal enzymes are induced** and these increase the rate of metabolism of certain medications such as oral contraceptives and antidiabetic drugs (sulphonylureas [e.g. glibenclamide, chlorpropamide] and biguanides [e.g. metformin]), steroids and dapsone. The effectiveness of these drugs is likely to be reduced.

Side-effects are uncommon but include:

- **Skin reactions:** rash, urticaria, flushing. Fortunately many of these reactions are self-limiting and gradually clear; the patient only needs symptomatic relief and reassurance until this happens.
- **Myalgia** (muscle aches and weakness).
- **Hepatitis:** see advice for patients under isoniazid.
- **Fever.**
- **Thrombocytopenia** (reduced platelet numbers so predisposing the patient to bleeding) **and rarely haemolytic anaemia, leucopenia** (low white blood cell count predisposing the patient to infection) and **eosinophilia.**

Isoniazid

- Gastro-intestinal symptoms: **nausea, vomiting.**

Most serious side-effects are uncommon (except **peripheral neuropathy**). There are two groups of patients: **slow and fast acetylators**. The fast acetylators metabolise isoniazid more rapidly than the slow acetylators. Therefore the slow acetylators are more likely to experience adverse reactions.

- **Peripheral neuropathy** is more common in patients with **diabetes mellitus, alcoholism, chronic renal failure, malnutrition and infection with the HIV**. Pyridoxine 10 mg daily should be given to these at-risk patients as a prophylaxis.
- **Hypersensitivity reactions**, which may occur together: **fever, purpura, erythema multiforme.**
- **Hepatitis** (more common in the over 35-year-olds): patients should be advised to report any nausea, vomiting, malaise and jaundice especially if in combination.
- **Gynaecomastia.**
- **Hyperglycaemia.**

Pyrazinamide

- Gastro-intestinal symptoms: **anorexia, nausea, vomiting and aggravation of the symptoms of peptic ulcer.**
- **Hepatitis** (see above): this may range from symptomless changes in LFTs to the **rare** occurrence of liver necrosis.
- **Rashes** including light sensitivity and urticaria.
- **Arthralgia.**
- **Gout:** pyrazinamide breaks down to pyrazinoic acid, which inhibits the excretion of uric acid by the kidney tubules.
- **Sideroblastic anaemia.**

Ethambutol

- **Ocular toxicity (retrobulbar neuritis)** which tends to be dose-related (i.e. the higher the dose the greater the chance of this problem). Avoid this drug in patients with impaired renal function otherwise serum levels will rise and increase the risk of this eye side-effect. **Warn patients to report any changes in their vision.**
- **Red/green colour blindness.**
- **Peripheral neuropathy.**
- **Rashes** including urticaria and pruritus.
- **Hepatitis** (see above).
- **Thrombocytopenia.**

Thiacetazone

- Gastro-intestinal symptoms: **anorexia, nausea, vomiting.**
- **Skin hypersensitivity** including erythema multiforme and exfoliative dermatitis. "*Skin rash has been reported as a common problem among HIV-positive people receiving thiacetazone. In a retrospective survey, 24/79 (30.4%) Zambian HIV-positive adults who were treated with a thiacetazone-containing antituberculous regimen were found to have developed a skin rash that required a change of treatment. A cohort study of Zambian children aged between 1 month and 15 years also reported a high rate of adverse effects among HIV-positive children treated with thiacetazone (19/88 [22%]). Twelve children (14%) developed a severe mucocutaneous reaction (Stevens-Johnson syndrome) and 11 (13%) of these children died*"¹.
- **Vertigo.**
- **Conjunctivitis.**
- **Hepatitis.**
- **Haemolytic anaemia and agranulocytosis** (strictly means the absence of polymorphonuclear granulocytes).

HIV-infected patients: a special note

These patients are more likely to experience side-effects from anti-tuberculosis chemotherapy (see thiacetazone above). The particular adverse reactions are:

- Cutaneous.
- Hypersensitivity reactions.
- Blood complications.
- Hepatic toxicity.
- **Rifampicin** may cause anaphylaxis.
- **Rifampicin** and **isoniazid** reduce the beneficial effects of ketoconazole and fluconazole.
- The absorption of **rifampicin** by the gastro-intestinal tract may be reduced by ketoconazole.

Editor's note: If any of our readers come across an unusual reaction to a drug (perhaps in association with other diseases) please send a case report to this journal. Such experiences can then be widely shared amongst colleagues.

Reference

1. Antituberculous treatment containing thiacetazone: <http://bestpractice.bmj.com/best-practice/evidence/intervention/0920/0/sr-0920-i3.html>

Do you think many medicines are prescribed, dispensed or sold inappropriately in South Sudan?

If so you may be interested to read about the **Rational use of medicines** in:

- WHO Fact Sheet 338 of May 2010 at <http://www.who.int/mediacentre/factsheets/fs338/en> and
- The Lancet, Volume 375, Issue 9731, Page 2052, 12 June 2010.

The XVII International AIDS Conference took place in Vienna in July 2010. News from the conference was published in **Aidsmap**, the publication of **NAM**. NAM, a UK-based organisation, delivers HIV information across the world to HIV-positive people and to the professionals who treat, support and care for them. See more details, download their free fact sheets and subscribe to the Aidsmap newsletter at www.aidsmap.com. Below are some of the papers given at the Vienna meeting (to find them scroll around <http://www.aidsmap.com/page/1442063>):

- New drug – rilpivirine does well in trials
- New drug – experimental integrase inhibitor shows promise
- HIV and hepatitis C – bone problems more common
- HIV and children – early treatment cost-effective
- HIV and tuberculosis – rapid ART saves lives
- Extended-release nevirapine works well
- The HIV epidemic and gay men – a mixed picture
- Microbicides and circumcision
- Where next for microbicides?
- Safety of HIV treatment during pregnancy
- ART in pregnancy: cost-effective and practical approaches being explored
- New drug – effect on HIV and inflammation

Reports from Southern Sudan

Nursing and Midwifery in Southern Sudan - Undersubscribed in a High Demand Environment

Julien Bucyabahiga, UNFPA Communication Officer

The present situation

The first ever College of Nursing and Midwifery in Southern Sudan has been established. This comes at a time when Southern Sudan is recovering from more than 20 years of civil war, which resulted in decay of the available infrastructure, human resources and systems in the health sector. As well as the lack of qualified personnel, the health care infrastructure including hospitals, primary health care centres and primary health care units also lay in total ruin.

Most practising health professional cadres received limited professional health education during the war that ended in 2005. Of the more than 4600 health workers who are presently operational, less than 10-20% have received more than 9 months of any form of professional training. This situation is made worse by the severe mal-distribution of health workers. More than two thirds are working in 3 of the 10 states, and there is a severe urban-rural bias. As a consequence, Southern Sudan has the highest maternal mortality ratio in the world standing at a staggering figure of 2054 maternal deaths/100,000 live births¹.

In response, the Government of Southern Sudan (GOSS) has sought assistance from donors and neighbouring countries (e.g. Kenya, Uganda, Ethiopia) to support human resources for the health care system. "We have to learn from experiences..., we are not ashamed about our situation. Our people must access a better health care system" stressed Dr Olivia Lomoro, Acting Undersecretary in the Ministry of Health during a recent workshop. With the support of United Nations Population Fund (UNFPA) and many other donors, existing structures are being renovated.

Training midwives

Starting in 2006, the training of Community Midwives was the first UNFPA initiative in the support of skilled birth attendants (SBAs). 96 students have graduated since 2007 from different institutions.

A further 110 Community Midwives are being prepared to begin training in 2010. UNFPA is looking into the possibilities of recruiting about 150 International Volunteers/Midwives by the end of 2010 to help the South Sudan Government to face the challenge of lack of qualified health cadres.

Juba College of Nursing and Midwifery



Figure 1. Site of new college
(UNFPA archives)

Because of the urgent need to develop a cadre with acceptable knowledge and skills, several stakeholders have joined hands by funding the first ever Nursing and Midwifery College. These include UNFPA, Real Medicine Foundation (RMF), World Children's Fund, the World Health Organization (WHO) and St Mary's Hospital, Isle of Wight-Juba Link. The United Nations Development Programme/ Global Fund (UNDP/GF) and Japan International Cooperation Agency (JICA) are providing additional funds to renovate /construct student hostels, a kitchen and mess hall, additional classrooms and a recreational facility.

The Juba College of Nursing and Midwifery has been operational since May 2010 and will be fully established in its new facilities by the end of 2010. It is expected that the college will have trained over 100 nurses and midwives from all states of

South Sudan by 2015.

The College is temporarily being hosted at the Juba Public Health Training Institute as JICA start construction and renovation work at the intended site at Juba Teaching Hospital (see Figure 1).

The students

The school opened with 30 students including 18 nursing and 12 midwife trainees (see Figure 2, 3 and 4). Of these, 10 are male and 20 are female. Trainees have come from Eastern Equatoria, Central Equatoria, Upper Nile and Western



Figure 2. The Principal, Ms Petronella Wawa, with the first group of trainees
(UNFPA archives)

Equatoria states. The highly motivated and enthusiastic students are currently taking foundation courses in mathematics, biology and English. *“Some of us have been working as nurses in various state hospitals. We are very happy to be here. The courses will help us upgrade our knowledge and skills”* said a student. The school is supposed to take students from all states but it is difficult to get candidates with all entry requirements.

Training and tutors



Figure 3. Dr. Fikru Zeleke, UNFPA, giving a lecture at the college (UNFPA archives)

According to Dr Dragudi Buwa, UNFPA Deputy Representative in Southern Sudan, the intensive training will take three years. *“The training will lead to a Diploma in Nursing and Midwifery based on a curriculum recognised by international standards”*, says Dr Buwa. The school will help contribute towards the achievement of the Millennium Development Goal 5 (reduction of maternal mortality) as well as improving access to family planning and basic and comprehensive emergency and obstetric care.

When they have finished training in 2013, the qualified nurses and midwives will repatriate to their respective states to offer professional support to the health facilities. *“Having attained adequate skills to work relatively independently in state hospitals, Primary Health Care Centres and Primary Health Care Centre Units, they will be expected to mentor and guide the other lower cadres’ staff prevalent in such health facilities. They will organise the work of the health care institutions and bring quality assurance to the*

care processes undertaken in their respective health care units” says Ms Bilha Achieng, Project Assistant Manager with Real Medicine Foundation who is currently running the day-to-day operation of the school. She adds, *“Real Medicine Foundation has also agreed to fund tutors; St Mary’s Hospital Isle of Wight-Juba Link will provide volunteer tutors temporarily to support the college tutors”*. Eventually the management of the school will be handed over to the Ministry of Health. Ms Petronella Wawa is already designated as the Principal of the college.

Challenges

The main challenges of the college are:

- Lack of national qualified nurse and midwife tutors,
- Shortages of applicants for the diploma programme with an acceptable entry-level of education. South Sudan’s high adult illiteracy rate (due to two decades of war) especially among women has affected the candidate selection process and requires a re-assessment of the interview and selection criteria².
- Lack of funds for students’ housing and transport³. Some students face challenges in learning English. Mary Lupai UNFPA’s National Programme Officer for Gender is helping to tutor the students in communication skills.



Figure 4. Trainees in class (UNFPA archives)

For more information, please contact Ms Bilha Achieng at achie.bilha@gmail.com

References

1. Southern Sudan Household and Health Survey, 2006
2. Information from Jonathan White, RMF
3. Informal information from Janet Michael, Director of Nursing and Midwifery

Thanks to Bilha Achieng and Jonathan White for the photographs in this article.

Profiles of health-related organisations working in South Sudan

We continue with our series of profiles of Non Governmental Organisations (both international and local) and other organisations working in health related fields in Southern Sudan. We hope this will help to publicise the valuable work these are doing, and allow people to make closer links with each other. In this issue we present the profiles of **Medair** and **Merlin**. If you would like us to publish a similar profile of your organisation, please send it to Dr Wani Mena (wanimena@gmail.com) or Dr Eluzai Hakim (eluzai_hakim@yahoo.co.uk).

Medair

How long has Medair been working in South Sudan? Medair started operations here in 1992 and has had a permanent presence since 1995.

Where do you work? We work across all 10 states in Southern Sudan. We have bases in Juba and in Upper Nile.

How many staff and/or volunteers do you have? We currently have over 280 staff, both international and Sudanese. We also work with community volunteers, including health and hygiene promoters and village development committee members.

What are your main health-related activities?

- Response to health and nutrition related emergencies across all 10 states through our health Emergency Response Team (ERT).
- Support for Upper Nile State Ministry of Health to provide primary health care (PHC) services in Melut and Manyo Counties, including capacity building for county health departments, support of 3 primary health care centres, 8 primary health care units and a TB clinic, and community-level work including health and hygiene promotion.

What are your main achievements to date? In 2009 the PHC programme supported 59,175 out-patient contacts, 5,014 antenatal visits, and screening of 4,471 children for malnutrition. The health ERT reached 145,102 beneficiaries, carried out 18 assessments and 13 interventions responding to disease outbreaks such as meningitis, cholera and measles, and treated 1,593 children in response to nutrition emergencies.



Vaccinating a child (© Medair)

What are your main constraints and challenges? The national shortage of qualified health staff, particularly midwives and clinical officers; the lack of clarity over the role of county health departments, and their understaffing; and difficulties with access due to climate and insecurity.

What are your plans/vision for the future? Medair is committed to remaining in the region until emergency relief and rehabilitation services are no longer needed, or until needs are met by GoSS or other agencies.

As well as the MoH, do you work with other agencies?

We have seconded one staff member to the Office for the Co-ordination of Humanitarian Affairs (UNOCHA) (for co-ordination of health emergency responses and assessments)

and another to WHO to assist with health sector co-ordination. We work in partnership with Fashoda Youth Forum and the Malaria Consortium in Upper Nile State; and we are on the NGO Steering Committee as one of 12 organisations representing NGO interests in the South.

What message would you like to give to readers of SSMJ?

Medair's overall goal is to increase access to health care, safe water, and emergency relief services. We prioritise the most vulnerable, in areas where other agencies are not working.

Medair's ERT specialises in rapid response across Southern Sudan. We can mobilise a team in less than three days, initiate a full response within a week, and we have capacity to provide a multi-sectoral integrated response.

Medair's PHC programme supports the MoH to provide good quality primary health care, while building local capacity with the aim of sustaining services in the future.

How can readers get more information on Medair? By going to our website at

www.medair.org



Thanks to Stella Chetham for sending this information.



Medair staff at work (© Medair)

Merlin

Merlin specialises in health, saving lives in times of crisis and helping to rebuild shattered health services. Whether the crisis is from natural disasters, conflict, disease or health system collapse, we work within the existing health systems to realise everyone's right to accessible, appropriate, affordable health care.

How long have you been working in South Sudan? Since 1998 and we have had a continuous presence in the country since 2004.

Where do you work? Merlin currently supports hospitals in Nimule, Eastern Equatoria State and Boma, in



Merlin Health Worker welcomes visitors to Imurok Primary Health Care Unit, Torit County, Eastern Equatoria State (credit Merlin)

Jonglei. We also support Primary Health Care facilities in Moli and Pageri (Magwi County), Hiyala, Imuruk, Kudo and Khormush (Torit County), Lafon and Imehejek (Lopa/Lafon) and Imatong (Ikotos).

How many staff do you employ? We currently employ 33 international and 260 Sudanese staff.

What are your main health-related activities? Merlin supports health facilities in the implementation of the Basic Package of Health Services, providing comprehensive training to staff, supplying drugs and ensuring quality of care is maintained.

What are your main achievements to date? In 2009, Merlin provided health care services to 189,000 direct beneficiaries. Nimule hospital is the only centre for antiretroviral therapy in Eastern Equatoria State and one of the only agencies in Southern Sudan still to operate a successful screening and treatment service for Sleeping Sickness patients.

What are your main constraints and challenges? Despite willingness and commitment, there are gaps in capacity (particularly human resources) within the Ministry of Health (MoH). Logistics remains a key challenge, and there is lingering uncertainty surrounding potential security issues presented by the upcoming referendum.

What are your plans for the future? Merlin is introducing a Health Information System (HIS) to improve monitoring of routine health data in clinics and hospitals. We will increase technical support to State and County Ministries of Health, as handover of certain rehabilitated facilities begins.

What message would you like to give to readers of SSMJ? Serious engagement to build MoH capacity at national, state and county level requires long term timeframes. Working with and through the MoH is the best strategy to ensure a sustainable health system.

How can readers get more information about Merlin? For more information on Merlin's activities in Southern Sudan and the rest of the world, please visit www.merlin.org.uk or contact the Country Programme office by email at cd@merlin-southsudan.org.

Thanks to Anna Fraenzel for sending this information.



Merlin Health Worker takes blood for testing from a patient in Boma Hospital, Jonglei State (credit Merlin)

Answers to quiz on page 6.

- The five most important risk factors for stroke are: **hypertension, current smoking, abdominal obesity, diet, and physical activity.**
- **Hypertension** is the most important (increasing stroke risk by 2.64 times).

Data from The Lancet. June 2010

<http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2810%2960834-3/fulltext>

Reports and Resources

This section gives relevant clinical information from other journals and reports, and suggests materials that can be freely downloaded, and/or obtained in hard copy or on CD. Items are grouped under: Chronic diseases; HIV and other infections; Maternal and child health/Nutrition; Surgery; General resources.

Please look out for other publications to include in this section. Send them to Dr Wani Mena wanimena@gmail.com or Dr Eluzai Hakim eluzai_hakim@yahoo.co.uk.

Below are several references to The Lancet. Did you know you can get free registration for **The Lancet** that allows you to:

- View many full articles free of charge
- Set up email alerts of tables of contents
- Subscribe to free email newsletters in your speciality.

To register go to

<http://www.thelancet.com/user/register>

Chronic diseases...

Updated Diabetes website

This Centers for Diseases Control and Prevention (CDC) website includes information for health professionals and people living with diabetes, data and trends, education resources, publications, projects, and news and resources. Although primarily for USA several of the items, including some for emergency situations, may be of interest in South Sudan.

See <http://www.cdc.gov/diabetes/>

[Seen at ProCor Weekly Prevention Update 12 May 2010 www.procor.org]

New, conservative recommendations for diabetics taking aspirin

New recommendations from USA suggest low-dose aspirin should only be taken by diabetics with no history of CVD, but who are at an increased risk based on age and one additional risk factor such as smoking, dyslipidemia, or hypertension. The American Diabetes Association, American Heart Association, and the American College of Cardiology issued new recommendations after reviewing research that included two new studies that failed to find any benefit from aspirin in primary prevention of cardiovascular events in diabetics. The authors note these recommendations are not one size fits all, and doctors should assess a patient's individual risk factors before issuing aspirin therapy.

See <http://www.theheart.org/article/1085451.do>

[Seen on procor Weekly Prevention Update 16 June 2010 www.procor.org]

HIV and other infections

Lancet Series on Tuberculosis

On May 19, **The Lancet** released a special series on tuberculosis, which includes a series of papers and comments highlighting the need for new tools, the threat posed by drug-resistant strains, results of current control efforts, and other issues about tuberculosis worldwide.

Body Mass Index (BMI) may be a useful surrogate marker of risk of tuberculosis or death among HIV-positive individuals

HIV-positive individuals who are obese or overweight are less likely to die or develop tuberculosis than people with HIV who are of normal weight according to a report by the South African Perinatal HIV Research Unit (PHRU). Their prospective study involving 3456 HIV-positive adults showed "a clear protective effect...of increasing BMI on both all-cause mortality and incident TB in a South African cohort" and "persons with obese and overweight BMI have a significantly decreased risk of both mortality and TB". The investigators conclude that "BMI may be a useful surrogate marker of risk of TB or death among HIV-positive individuals ...but urgent studies are required to pinpoint the protective factor and to address detrimental health issues that may result from elevated BMI."

See: Hanrahan CF et al. [BMI and risk of tuberculosis and death: a prospective cohort of HIV-infected adults from South Africa](#). *AIDS, advance online publication*: DOI: 10.1097/QAD.0b013e32833a2a4a, 2010.

Can zinc supplements prevent CD4 cell loss in patients with HIV?

Investigators in USA report that zinc supplements significantly reduces the risk of CD4 cell counts falling below the critical 200 cells/mm³ level. Daily doses of zinc also reduced reported diarrhoea. No serious side-effects were reported.

231 HIV-positive patients in the United States were randomised to take a daily dose of zinc (15mg men, 12mg women) or a placebo for 18 months. Antiretroviral therapy was being taken by 62% of patients, but only 29% of these individuals had an undetectable viral load. At the end of the study, the patients who received supplementation had significantly higher zinc levels than those who received the placebo. There was no evidence that zinc supplements lowered viral load. However, zinc supplementation reduced the risk of immunological failure by approximately 75%.

Zinc supplementation was reported to reduce the risk of diarrhoea by 60%, and a significant link between low zinc levels and reporting diarrhoea

was found. There was no evidence that taking zinc supplements reduced the risk of death.

The investigators concluded that “this evidence supports the recommendation of zinc therapy as a safe, simple, and cost-effective tool to improve the immune response and to reduce morbidity and should be considered as an adjunct therapy for HIV infection.”

See: Baum MK *et al.* Randomized, controlled clinical trial of zinc supplementation to prevent immunological failure in HIV-infected adults. *Clin Infect Dis* 50: online edition, 2010. [From *Aidsmap News* (www.aidsmap.com).]

Maternal and child health/Nutrition

The World Health Assembly in May 2010

adopted the following issues:

Infant and young child nutrition: Recognizing that improved breastfeeding practices could save the lives of one million children under five each year, a resolution was adopted on infant and young child nutrition.

Treatment and prevention of pneumonia: A resolution on the treatment and prevention of pneumonia -- the number one killer of children under five -- makes clear that MDG 4 can only be achieved with intensified efforts to address pneumonia.

Birth defects: A resolution was adopted to redress the limited focus to date on preventing and managing birth defects, especially in low- and middle-income countries.

From *In CAH newsletter - Reaching Out, Issue 16 from Child and Adolescent Health and Development, WHO* (find at http://www.who.int/child_adolescent_health/en)

Breastfeeding: Just 10 Steps - Towards a Baby-Friendly Way

To mark **World Breastfeeding Week** (August 1-7) the Mother and Child Health and Education Trust with UNICEF Maharashtra have a new website "**Ten Steps to Successful Breastfeeding**" (see <http://tensteps.org>). The site aims to raise awareness, encourage early adoption, promote training on, and to stimulate dialogue about, breastfeeding. It includes videos, presentations, research, training and counselling materials and many other resources.

Also see: www.worldbreastfeedingweek.org and **Facts for Life: Breastfeeding: Why it is important to share and act on this information** <http://breastfeeding.factsforlife.org>.

See: *The Mother and Child Health and Education Trust* <http://motherchildtrust.org> from the CHILD2015 forum www.child2015.org.

Causes of young child mortality in 2008

Of the estimated 8.795 million deaths in children younger than 5 years worldwide in 2008, infectious diseases caused 68% (5.970 million), with the largest percentages due to:

- pneumonia 18% (~1.575 million)
- diarrhoea 15%, (~1.336 million)
- malaria 8%, (~0.732 million).

41% (3.575 million) of deaths occurred in neonates, the most important single causes were:

- preterm birth complications 12%, (~1.033 million)
- birth asphyxia 9%, (~0.814 million)
- sepsis 6%, (~0.521 million)
- pneumonia 4%, (~0.386 million).

See: *Global, regional, and national causes of child mortality in 2008: a systematic analysis. Black RE et al Lancet, Volume 375, Issue 9730, Pages 1969 - 1987, 5 June 2010*

Maternal mortality: one death every 7 min

99% of all deaths in childbirth are in the least developed countries. Annually, 45 million women deliver without a skilled birth attendant, a situation in which the greatest number of maternal deaths occurs. The commonest single cause of maternal death is from **post-partum haemorrhage**, from which one woman dies every 7 minutes.

From *The Lancet, vol 375, issue 9728, pp 1762 -1763, 22 May 2010*

Self-study learning materials on MTCT

Online learning material for self-study to enable nurses and doctors to reduce the risk of mother-to-child transmission of HIV can be accessed free at <http://ebwhealthcare.com/content/section/12/37>. Other online courses from **EBW Healthcare** (see below) on mother/child care and HIV are available via this site.

EBW Healthcare is a range of books developed by leading healthcare organisations mainly for developing countries. They are published by **Electric Book Works** in South Africa. Each book represents a self-managed course that you can take on your own or in a group.

Misoprostol as an adjunct to standard uterotonics for treatment of post-partum haemorrhage: a multicentre, double-blind randomised trial

Findings from this study do not support clinical use of 600 µg sublingual misoprostol in addition to standard injectable uterotonics for treatment of post-partum haemorrhage.

See: *The Lancet, Volume 375, issue 9728, pp 1808 - 1813, 22 May 2010*

Vitamin A supplements and maternal deaths

A large (207 781 women) cluster-randomised, placebo-controlled trial in Ghana, from the ObaapaVitA Trial Team, shows no benefit on maternal mortality of giving 25 000 IU of vitamin A as a weekly supplement to women of reproductive age. A recent large-scale replication trial in Bangladesh, which assessed supplementation for pregnant women rather than for all women of reproductive age, also reported no effect on pregnancy-related mortality; a trial in Indonesia of multiple micronutrient supplementation with vitamin A gave the same results. The authors state **"..the balance of evidence does not support giving routine vitamin A supplements to women in either safe motherhood or child survival strategies"**.

See: *Vitamin A supplementation and maternal mortality* Costello A. & Osrin D. *The Lancet*, Volume 375, Issue 9727, Pages 1675 - 1677, 15 May 2010

Surgery

Books on surgery

- WHO **'Surgical Care at the District Hospital'** manual is available *free* at www.who.int/surgery. It is part of the WHO's Integrated Management of Emergency and Essential Surgical Care toolkit which has materials for health providers and managers at first referral level health facilities. These cover surgery, trauma, obstetrics, anaesthesia and the management of health facilities. It also offers materials for policy makers and tools for developing training programmes and curricula in surgery and anaesthesia.
- P. Bewes **'Surgery, A manual for Rural Health Workers'** 2nd edition 2003 is available from AMREF (www.amref.org/info-centre)—cost US\$14.50
- M King. **'Primary Surgery Texts, Volume 1 Non-Trauma and Volume 2 Trauma'** are available *free* at http://ps.cnis.ca/wiki/index.php/Main_Page. These books were written in the 1990s for low-resources settings. But the basic approach, illustrations and advice are still useful for inexperienced doctors.

Which other books on surgery do you recommend?

Surgery in Africa Monthly Reviews

These reviews are available *free* at www.ptolemy.ca/members

Examples of recent ones are:

- April 2010 "Cryptorchidism - a comprehensive clinical review".

- May 2010 Review, Prevention and Treatment of Cancer of the Cervix in Africa - Part I
 - June 2010 Review, "Is Splenic Preservation after Blunt Splenic Injury Possible in Africa?"
- Also at this site are archives of reviews since 2005 and a resource library.

General resources

Community Eye Health Journal is a **free print** publication for eye care/health care workers in low income countries. It publishes practical peer-reviewed articles based on research and real-world experience as well as news about resources and events. There are multiple-choice questions in each issue to support readers' continued professional development.

To get your own free copy, send your name, organisation, occupation, and postal address to Anita Shah at admin@cehjournal.org or Community Eye Health Journal, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom. Visit www.cehjournal.org for more information and to download current and past issues.

Palliative care toolkit

This Toolkit is to help health workers in resource-limited settings to integrate palliative care into their work and their communities. It provides a 'can do' approach to delivering care to those with life-limiting diseases. There is a training manual to support training in using the Toolkit. You can download the toolkit and manual at <http://www.helptheospices.org.uk/our-services/international/what-we-do-internationally/education-and-training/palliative-care-toolkit>. Hard copies may be available – write to info@helptheospices.org.uk

Oxford Textbook of Medicine online

Oxford University Press has made this textbook available online via HINARI*. So you should be able to access it at the Resource Centre at Juba Teaching Hospital – go to <http://www.who.int/hinari/en>. In print, this 5th edition (2010) of the textbook is ~ 6,000 pages long. The online version gives the full text, figures, and illustrations found in the print version, as well as navigation, search, and browse tools, and links to sources of related readings. Images can be downloaded to PowerPoint. It will be updated each year.

Also available via HINARI are 21 other titles in human health and nutrition.

* The Programme for Access to Health Research (HINARI) provides free online access to many

major journals to not-for-profit institutions in developing countries, including South Sudan.

Pediatric ONCALL is a part of the **ONCALL website** to which you can send difficult cases for help with diagnosis – see <http://www.pediatriconcall.com/fordoctor/diagnosisdilemma/listdilemma.aspx>

ONCALL is a web-based medical information and education tool with an extensive network of

doctors as registered members of the site. For practising physicians the website serves as an important source of updating themselves, which helps them in the state of art practice of medicine. The site is a very interactive platform for doctors to discuss diagnostic dilemmas, learn from the teaching files and enjoy the discussion groups.' See <http://www.pediatriconcall.com>.

[Seen on the email forum CHILD2015 www.child2015-forum]

Doctors are urgently needed at the Juba Medical Centre, Southern Sudan



SERVICE & DEVELOPMENT

The Juba Medical Centre (JMC) needs a General Surgeon, a Paediatrician, two Senior House Officers and two specialist Registrars to be attached to the following specialities: Medicine, Surgery, Obstetrics and Gynaecology and Paediatrics.

This is a newly established sixty bedded Hospital which opens in the first week of August 2010. It is the first modern hospital in the Southern Sudan to be equipped with three operating theatres, a CT scanner, modern ultrasonographic equipment, conventional X-ray facilities and a clinical laboratory.

Accommodation for staff is under development but interim accommodation arrangements for those willing to start in August 2010 will be put in place. Competitive rates of pay will be offered. UK and European doctors will gain a unique tropical clinical experience and will be offered periods of service varying from three months to one year in the first instance.

Please contact **Dr Ronald Woro**, Chief Physician and Medical Director at ronaldworo@hotmail.com

WHO charts for everyone caring for children in hospital

On pages 64 and 65 we reproduce **Chart 3. How to manage the choking infant and child** from 'Pocket Book of Hospital Care for Children - Guidelines for the Management of Common Illnesses with Limited Resources' WHO 2005 – see the whole book at <http://www.ichrc.org/>. We published Charts 1 and 2 in previous issues of this journal (vol 3 nos 1 & 2) and plan to publish more charts in future issues.

You can use these charts in different ways. For example, you can print them and display them in relevant wards or clinics (laminated if possible), or use them as a 'memory aid' in your pocket, as handouts or as training aids.

We thank the WHO for permission to reproduce these charts, and Dr O'Hare who gave us the idea of making the charts more widely available.

CHART 3. How to manage the choking infant



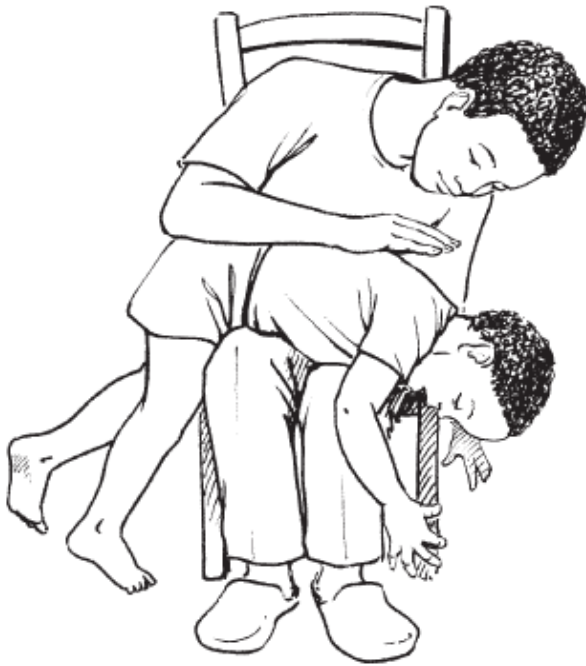
Back slaps



Chest thrusts

- ▶ Lay the infant on your arm or thigh in a head down position
- ▶ Give 5 blows to the infant's back with heel of hand
- ▶ If obstruction persists, turn infant over and give 5 chest thrusts with 2 fingers, one finger breadth below nipple level in midline (see diagram)
- ▶ If obstruction persists, check infant's mouth for any obstruction which can be removed
- ▶ If necessary, repeat sequence with back slaps again

CHART 3. How to manage the choking child (over 1 year of age)



Slapping the back to clear airway obstruction in a choking child

- ▶ Give 5 blows to the child's back with heel of hand with child sitting, kneeling or lying
- ▶ If the obstruction persists, go behind the child and pass your arms around the child's body; form a fist with one hand immediately below the child's sternum; place the other hand over the fist and pull upwards into the abdomen (see diagram); repeat this Heimlich manoeuvre 5 times
- ▶ If the obstruction persists, check the child's mouth for any obstruction which can be removed
- ▶ If necessary, repeat this sequence with back slaps again



Heimlich manoeuvre in a choking older child

South Sudan Doctors' Association

The South Sudan Doctors' Association (SOSDA) is a non-governmental, non-profit professional organization established in 2005 by South Sudanese doctors in Sudan.

SOSDA strives to work with the people of South Sudan in all sectors to restore the basic and quality health service which is accessible to all irrespective of sex, tribe or religion.

Vision: A quality health service for people of South Sudan.

Mission: SOSDA exists to ensure healthy and productive generations in South Sudan, through quality, accessible and affordable health services.

Objectives:

The main objective of the Association is to ensure quality health services for the people of South Sudan.

The specific objectives of the Association are:

- ◆ To enhance the role and contribution of medical doctors in the development of health services.
- ◆ To act as a forum for expressing doctors views with regards to the prevailing health problems and their solutions
- ◆ To promote the ethics, norms and tradition of the medical profession.
- ◆ To advocate and protect the rights of health professionals.
- ◆ To improve the working and living conditions of health professionals.
- ◆ To strengthen relations among health professionals and promote the spirit of cooperation and group work.

Activities

The main activities of the Association shall include:

- ◆ Representing and speaking on behalf of health professionals.
- ◆ Encouraging and participating in the training of health professionals.
- ◆ Participating in raising health awareness in the community.
- ◆ Encouraging and supporting scientific research and conducting conferences, workshops and symposia on health issues.
- ◆ Seeking scholarships and soliciting funds for training of health professionals.
- ◆ Giving technical support and advice to the health authorities.
- ◆ Participating in planning and coordinating health activities with other organizations.
- ◆ Conducting social and recreational activities to enhance relations among the health professionals.
- ◆ Organizing fund-raising activities.

Membership

a. Types of Membership:

There are three types of Membership: members, affiliated members and honorary members.

- ◆ Members are graduates of colleges of medicine, dentistry and pharmacy and registered in the Sudan Medical Council.
- ◆ Affiliated members are the paramedical staff and students of medicine, dentistry and pharmacy.
- ◆ Honorary members: are persons or groups who are awarded SOSDA membership for their contribution to health services in South Sudan or SOSDA.

b. Conditions of membership:

The Membership of the Association is open to all South Sudanese Doctors who accept the Association's objectives and undertake to abide by the Constitution. Members and affiliated members fill in membership forms and pay registration fees fixed by the executive committee.

Contact Email: sosda.sudan@yahoo.com; sosda.sudan@gmail.com

Every effort has been made to ensure that the information and the drug names and doses quoted in this Journal are correct. However readers are advised to check information and doses before making prescriptions. Unless otherwise stated the doses quoted are for adults.