
Southern Sudan Medical Bulletin

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Lokurubang mobile clinic at an Internally Displaced People's camp near Lainya. Photo from Poppy Spens

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

Established in 2008. A publication of the St Mary's Juba hospitals link

Editorial: Juba Teaching Hospital College of Nursing and Midwifery

Health statistics for Southern Sudan indicate the enormous need for more qualified health staff. For example, the country has the highest maternal mortality rate in the world – 2030 deaths per 100,000 births; 135 out of every 1000 Southern Sudanese children die before their 5th birthday, and there is 1 doctor for every 100,000 people¹. The Government is well aware of the situation and the need for more trained staff, particularly nurses and midwives.

In March 2008 a team from the St Mary's Hospital, Isle of Wight, UK working with staff at Juba Teaching Hospital identified several problems related to nursing and midwifery in the hospital. Apart from the lack of sufficient trained staff, particularly midwives, the most serious problems were lack of nurse and midwifery trainers and lack of continuing professional development (and even reading materials) leading to lack of basic nursing skills and low morale. The team recommended that Registered Nursing and Midwifery courses should be established at the hospital immediately².

As a consequence of discussions with the Ministry of Health, the **College of Nursing and Midwifery**, a collaborative project between the Government of Southern Sudan, St Mary's Hospital – Juba Teaching Hospital Link, the Real Medicine Foundation, USA (RMF), United Nations Population Fund (UNFPA) and the World Children's Fund was born. The RMF and the World Children Fund have contributed significant amounts of money to pump prime this programme.

After a recent visit to Juba I can report that:

- To date, 60 student applications from around the country have been submitted
- The Ministry of Health and the Vice Chancellor of Juba University will meet to finalise the accreditation of the programme.
- The United Nations Development Programme has requested five International United Nations Volunteers and RMF has funding for two more to help direct the programme. UNFPA's Regional Director has assured his agency's full support for human resources to start the programme
- The World Health Organisation has agreed to provide some support for course materials, skills and laboratory equipment.
- The Director General (Nursing & Midwifery) met with the Japanese International Co-operation Agency to discuss construction support in 2010 for buildings for the school.
- A college management board is in the process of formation.

We will report on further developments of this exciting and much needed programme in a future issue of this Bulletin.

Michael Lear
Director International Relations
Real Medicine Foundation

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2. *Report of a Visit to Juba, Southern Sudan by a Team of Healthcare Professionals from St Mary's Hospital, Isle of Wight, UK. March 2008.*

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 a publication of the St Mary's Juba link. It is published in mid-February, May, August and November and is free online at <http://www.iow.nhs.uk/juba> (under journals).

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

Editor

Dr Eluzai Abe Hakim
Department of Adult Medicine & Rehabilitation
Newcroft Building
St Mary's Hospital
Newport, Isle of Wight PO30 5TG
UK
Eluzai_hakim@yahoo.co.uk

Editorial Board

Dr Wani Mena
wanimena@gmail.com
Professor James Gita Hakim
jhakim@mwweb.co.zw
Dr Louis Danga
wedanga@hotmail.com
Dr Ronald Woro
ronaldworo@hotmail.com
Dr Marcelina Morgan
Muyamarcelina@hotmail.com
Dr James Ayrton
james.ayrton@gmail.com

Editorial Advisor

Ann Burgess
annpatriciaburgess@yahoo.co.uk

Editorial Assistant

Madeleine Linington
madeleine.linington@iow.nhs.uk

Reviewer

David Tibbutt
david@tibbutt.co.uk

Hypertension in Adults: Part 2. Assessment and management

Dr Muhammad Ilyas, Specialist Registrar Acute Medicine, St Mary's Hospital Isle of Wight, UK
muhammad_ilyas73@yahoo.com

(Part 1. Prevalence, types, causes and effects was published in volume 2 issue 3 August 2009 of this Bulletin)

Assessment

Include the following:

- Confirmation of hypertension
- Risk factors for cardiovascular disease
- Underlying cause(s)
- End organ damage
- Indications and contraindications for anti-hypertensive drugs

History

A thorough history is essential - note particularly:

1. Age, gender, family history
2. Drugs: non-steroidal anti-inflammatory drugs, oral contraceptives, steroids, liquorice, sympathomimetics e.g. cocaine or epinephrine contained in cold remedies and cough medicines.
3. Renal disease:
 - present, past and family history
 - history of haematuria and /or proteinuria
4. Paroxysmal (intermittent) symptoms (?phaeochromocytoma)
5. Muscle weakness, polyuria (?Conn's syndrome)
6. Rounded face and abdominal obesity (?Cushing's syndrome)
7. Cardiovascular risk factors and co-morbidities:
 - Overweight
 - Excess alcohol intake (>3 units/day for men, >2 units/day for women)
 - Cigarette smoking
 - Excess salt intake ($\geq 10\text{g/day}$)
 - Diabetes mellitus
 - Dyslipidaemia (arcus cornealis, xantholasmata).
8. Complications or end organ damage:
 - "Stroke", transient ischaemic attack (TIA)
 - Coronary artery disease, heart failure
 - Peripheral vascular disease
 - Visual problems
 - Renal disease.

Physical examination

1. Confirm the hypertension with **repeated measurements** over about four weeks. This may not be feasible where travelling to clinics is difficult - and may not be needed if there is end organ damage and malignant hypertension.
2. Look for secondary causes (see Part 1).
3. Record cardiovascular abnormalities:
 - Peripheral pulses

- Radio-femoral delay, diminished femoral pulses with low femoral blood pressure (BP) (aortic coarctation)
 - Carotid and abdominal arterial bruits
 - Aortic aneurysm.
4. Identify end organ damage:
 - Brain: motor or sensory defects
 - Retinal fundoscopic abnormalities
 - Heart: displacement of apical impulse, dysrhythmias, sounds and murmurs, ventricular gallop, pulmonary rales, peripheral oedema
 - Peripheral arterial pulses: absence, reduction or asymmetry, ischaemic skin lesions.
 5. Identify other conditions (co-morbidities):
 - High Body Mass Index (BMI). [BMI = weight in kg/height in meters²] BMI ≥ 25 = overweight; BMI ≥ 30 = obesity
 - High abdominal girth measured through the umbilicus. A value of >88centimetres for females and >102centimetres for males is considered an independent risk factor for cardiovascular disease
 - Bronchial asthma and chronic obstructive pulmonary disease (COPD): These are considered contraindications to beta blocker use. COPD is rare in black populations.

Investigations

Routine Tests

These should be available in most health centres:

- Haemoglobin, haematocrit, ESR.
- Urine "stix" test for proteinuria, haematuria, and glycosuria.

The following are desirable but are less likely to be available:

- Blood glucose (preferable fasting)
- Serum urea and creatinine
- Electrolytes, calcium and phosphate
- Estimated creatinine clearance
- Serum uric acid
- Lipid profile
- Electrocardiogram for cardiac rhythm and evidence of left ventricular hypertrophy
- Echocardiogram if cardiac structural abnormalities suspected.

Consider referral to a specialist for extended evaluation if there are these conditions:

- Age <40 years
- Severe hypertension with end organ damage
- Poorly controlled hypertension
- Suspected secondary hypertension.

Indications for drug therapy

1. Sustained systolic blood pressure (BP) ≥ 160 mmHg or sustained diastolic BP ≥ 100 mmHg despite non-pharmacological measures.
2. Sustained systolic BP 140–159mmHg or diastolic blood pressure 90–99mmHg if there is:
 - end organ damage or
 - diabetes mellitus.

A target systolic BP ≤ 140 mmHg and diastolic blood pressure ≤ 85 mmHg is ideal. For patients with diabetes mellitus a target of 130/80mmHg is ideal.

Non - pharmacological measures

Attempt non-pharmacological methods of lowering BP in patients with mild hypertension but no cardiovascular complications or end organ damage. Start non-pharmacological measures in parallel with drug therapy in patients with severe hypertension (see British Hypertension Society guidelines – see website below).

Benefits of non-pharmacological measures

- Lowers BP as much as drug monotherapy
- Reduces the need for drug therapy
- Enhances the antihypertensive effect of drugs
- Reduces the need for multiples drug regimens
- Reduces overall cardiovascular risk.

Non-pharmacological measures recommended by the British Hypertension Society

That lower BP:

- Weight reduction – aim for Body Mass Index 20-25 Kg/m²
- Reduced salt intake to <100 mmol/day (<6g NaCl or <2.4 g Na+/day. One flat teaspoonful = ~6g salt)
- Reduced alcohol consumption to ≤ 3 units/day for men and ≤ 2 units/day for women (500 ml beer = ~2 units)
- Regular aerobic exercise (brisk walking rather than weightlifting for ≥ 30 minutes per day), on at least three days each week
- At least five portions of fruit and vegetable each day (e.g. banana, mango, tomato, green leaves)
- Reduced total fat and saturated fat intake. Saturated fats come mainly from animal foods such as milk and meat.

That reduce cardiovascular risk:

- Stopping smoking

- Reducing total fat intake and replacing saturated fats with unsaturated fats. Unsaturated fats and oils come from plant foods and fish.

Pharmacological therapy

Classes of antihypertensive drugs

The main purpose of treating hypertension is to reduce the incidence of cardiovascular (especially left ventricular failure), cerebrovascular disease (“stroke”) and renal failure. The five major classes of antihypertensive drugs are:

- Diuretics (e.g. thiazide diuretics)
- Calcium channel blockers (e.g. nifedipine)
- Angiotensin converting enzyme inhibitors (ACEI) (e.g. lisinopril)
- Angiotensin receptor antagonists (e.g. losartan)
- Beta blockers (e.g. atenolol)

Other antihypertensive drugs are:

- Alpha receptor antagonists (e.g. prazosin)
- Vasodilators (e.g. hydralazine)
- Mineralocorticoid receptor antagonists (e.g. spironolactone)
- Sympatholytics (e.g. clonidine, alpha methyl dopa).

The choice of antihypertensive drug (s)

Factors influencing the choice of antihypertensive drug (s) are:

- Age
- Ethnicity
- Co-morbidities e.g. diabetes mellitus, renal disease, peripheral arterial disease, “stroke”, prostate disease, obesity, pregnancy
- Contraindications e.g. beta blockers in bronchial asthma
- Cardiovascular risk profile e.g. ischaemic heart disease
- Severity of hypertension and presence of end organ damage
- Etiology of hypertension – e.g. Cushing’s disease, renal artery stenosis
- Side effects to previous treatment e.g. angio-oedema with an ACEI
- Drug compliance of patient
- Socio-economic status
- Economic factors and sustainable supply of drug(s) chosen.
- Patient’s choice.

The ideal drug is one that is given once each day, lowers the BP satisfactorily without significant side effects, has a sustainable supply and is not expensive.

“ABCD” treatment Algorithm

Most patients require more than one drug to control BP. The British Hypertension Society recommends an algorithm based on the AB/CD rule to assist with the selection of drug schedules. The idea of the

AB/CD algorithm is based upon the broad classification of hypertension into:

1. High renin hypertension
2. Low renin hypertension

Therefore BP is best initially treated by one of 2 categories of drugs:

1. Drugs which inhibit the renin-angiotensin system (e.g. **A**CE inhibitors, **A**ngiotensin receptors blockers or **B**eta blockers) or
2. Drugs which do not inhibit the renin-angiotensin system (e.g. **C**alcium antagonists or **D**iuretics).

Because African (black) patients of all ages tend to have low renin levels, initial therapy should be a calcium-channel blocker or a thiazide diuretic. If a second drug is required, add an ACE inhibitor (or an angiotensin-II receptor antagonist if an ACE inhibitor is not tolerated).

If treatment with **three drugs** is required, use a combination of ACE inhibitor (or angiotensin-II receptor antagonist), calcium-channel blocker and thiazide diuretic.

If blood pressure remains uncontrolled on adequate doses of three drugs, consider adding a fourth and/or seeking expert advice.

If a **fourth drug** is required, consider one of the following:

- Beta-blocker
- Selective alpha-blocker.

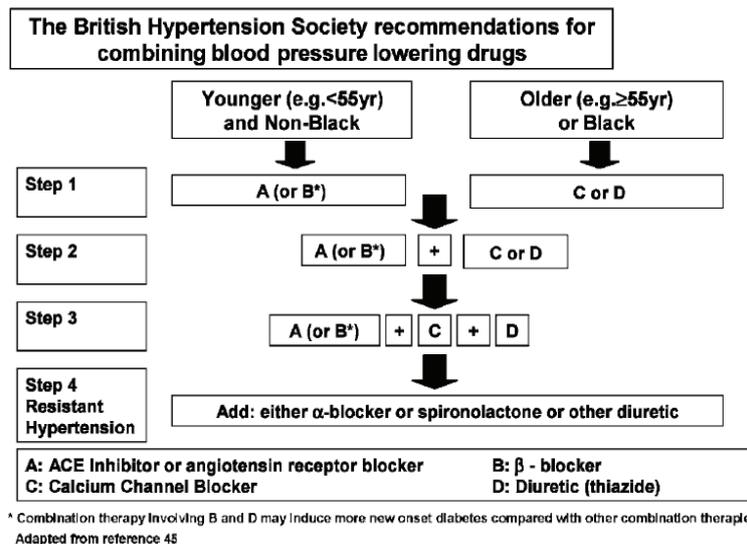
Beta-blockers are not a preferred initial therapy as they are less effective in reducing major cardiovascular and cerebrovascular events. However, beta-blockers may be considered in younger people, particularly:

- Those with an intolerance or contraindication to ACE inhibitors and Angiotensin-II receptor antagonists or
- Women of child-bearing potential or
- People with evidence of increased sympathetic drive.

If therapy is initiated with a beta-blocker and a second drug is required, add a calcium-channel blocker. However if a beta-blocker is withdrawn, the dose should be stepped down gradually.

Offer patients with isolated systolic hypertension (systolic BP 160 mmHg or more) the same treatment as patients with both raised systolic and diastolic blood pressure.

Offer patients over 80 years old the same treatment as other patients over 55 years, taking account of any co-morbidity and their existing burden of drug use.



Other medications for hypertensive patients

Prevention of arterio-vascular disease¹

Primary

1. **Aspirin:** use 75 mg daily if patient is aged ≥50 years with BP controlled to <150/90 mmHg

¹ This advice is based on Western studies and how far this practice should be extended in Africa is uncertain. Facilities for the measurement of blood cholesterol levels and supplies of a statin (e.g. simvastatin) are unlikely to be available so the management of hyperlipidaemia is not usually an option.

and end organ damage, diabetes mellitus, or 10 year risk of cardiovascular disease of ≥20%.

(Measured by using the new Joint British Societies cardiovascular disease risk chart – see http://www.bhsoc.org/resources/prediction_chart.htm).

2. **Statin:** use sufficient doses to reach cholesterol targets if patient is aged up to 80 years, with a 10 year risk of cardiovascular disease of ≥20% and with total cholesterol concentration ≥3.5mmol/l.

Secondary (including patients with type 2 diabetes)

1. **Aspirin:** use for all patients unless contraindicated.
2. **Statin:** use sufficient doses to reach cholesterol targets if patient is aged up to 80 years with a total cholesterol concentration ≥ 3.5 mmol/l.

Hypertension in black patients is different

Hypertension occurs more frequently in black populations and is associated with:

- a higher incidence of cerebrovascular and renal complications (end-stage renal failure is up to 20 times more common)
- a two-fold higher incidence of left ventricular hypertrophy with an increased risk of left ventricular failure.

Salt (sodium) handling is different and associated with an expanded plasma volume and a higher prevalence of low plasma renin activity.

Management of hypertension in black patients

Non-pharmacological management

Lifestyle and non-pharmacological interventions may significantly reduce blood pressure hence minimising the need for antihypertensive drugs.

So advise patients to:

- **Eat less salt:** Sodium restriction to an intake of <100 mmol day (i.e. total of one teaspoon/day) may have the same effect as a low-dose thiazide diuretic.
- **Lose weight:** Black hypertensives are often obese and a fall in weight usually leads to a reduced blood pressure.
- **Drink less alcohol:** Even moderate alcohol ingestion (three to five drinks daily) is associated with a raised blood pressure in black patients.
- **Take more exercise.**

Pharmacological management

Diuretics: A thiazide diuretic (e.g. bendroflumethiazide 2.5mg daily) is the first-line treatment in most black hypertensives. However the clinician should be aware of potential adverse metabolic effects: hypokalaemia, hyperlipidaemia and glycaemic control in diabetics.

Beta-blockers: Beta-blockers (e.g. atenolol) are less effective in black hypertensives although younger patients may be more responsive than elderly ones.

Angiotensin-converting enzyme (ACE) inhibitors: ACE inhibitors (e.g. captopril) appear less effective when used alone in black patients

although this is eliminated by the addition of a diuretic. ACE inhibitors remain the first-line anti-hypertensive agents in patients with diabetic nephropathy, particularly in the presence of proteinuria. The complication of ACE-inhibitor-induced angio-oedema is more common in black patients.

Calcium channel blockers: Calcium channel blockers (e.g. nifedipine) are highly effective. Verapamil is also a calcium channel blocker. It must never be used with a beta blocker because the two together may have a serious negative effect on cardiac function.

Alpha-blockers: Alpha-receptor-blocking agents (e.g. doxazosin) reduce blood pressure by reducing peripheral vascular resistance. However, the addition of a diuretic is often required.

Angiotensin receptor antagonists: There is limited information concerning the efficacy and tolerability of the angiotensin receptor antagonists (e.g. losartan) in black patients.

In view of the high prevalence of hypertension and associated complications in the black population consider starting effective screening programmes.

Further reading

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Website

British Hypertension Society www.bhsoc.org

With thanks to Dr David Tibbutt for helping to edit this article.

Motorcycle-Related Trauma in South Sudan: a cross sectional observational study.

Andrew Allan, University of Birmingham. AXA615@bham.ac.uk

Abstract

Motorcycle related trauma is a major cause of morbidity in those of working age in the developing world¹. One hundred and sixteen patients involved in motorcycle related accidents were identified over four weeks at the Juba Teaching Hospital in South Sudan. Of these 84% were male with an average age of 26.7 years. Most male injuries involved drivers, whereas the majority of female injuries were to pedestrians. The commonest injuries were lacerations, abrasions and fractures, and the commonest regions injured were the lower and upper limbs and the head and face.

Forty-four patients were admitted to the ward. Forty six percent of men interviewed did not hold a license, 96.5% of drivers and 91.3% of passengers were not wearing a helmet and 24.6% of drivers were under the influence of alcohol at the time of injury.

The vast majority of accidents occurred on surfaced roads within Central Juba. This study highlights the need for tighter regulation of motorcycle ownership, usage and personal safety in addition to wider infrastructural development. In doing this it might be possible to reduce morbidity and the socioeconomic impact on those involved in motorcycle related accidents and the families who depend on them.

Significant injuries to the head and face were recorded, but no enquiries were made about cognitive impairment. Organised rehabilitation of those injured needs serious consideration by the Ministry of Health.

Background

A recent influx of petrochemical and charitable organizations has turned Juba into a crowded overpopulated city and brought a new wave of inexperienced motorists. Many young men are using their motorcycles as makeshift taxis, often without licences or personal protection. This coupled with poor road conditions has created a perfect environment for motorcycle related trauma (MRT).

The aim of this study was to determine:

1. The extent of the problem of MRT in Juba
2. The demographics of those involved
3. The method and extent of injury and
4. Contributing risk factors.

These data might help to develop a strategy to reduce MRT and its serious impact on those involved.

Method

The study took place over four weeks (15th April – 10th May 2009) at Juba Teaching Hospital at the emergency surgical outpatient department and the trauma and surgical wards.

To assess how representative these patients were of the overall road traffic-related trauma caseload, clinical details of all patients admitted following road traffic accidents to the surgical and emergency wards between April 2008 and April 2009 were examined.

Results

A total of 116 patients were identified over the 4-week period and 44 (38%) were admitted. All recorded cases took place between 7.45 and 22.00 hours with a peak time between 12.00 and 16.00

hours. The percent of the accidents occurring at different locations were:

- main paved roads in central Juba 70.2%
- outskirts of the city on unpaved road 8.8%
- within 10 miles of Juba 10.6%

The remainder occurred over 10 miles from the hospital.

Characteristics of patients

Of the 116 patients:

- 97 (84%) were males and 19 (16%) were females.
- The average age was 27.4 years for males and 24.1 years for females
- 23 were children (<16 years) and 21 were unemployed. The remainder were students (≥16 years in full time education) or in paid employment of which 10 were military personnel.
- 58 were drivers (all males), 23 were passengers, and 35 were pedestrians. See figure 1.

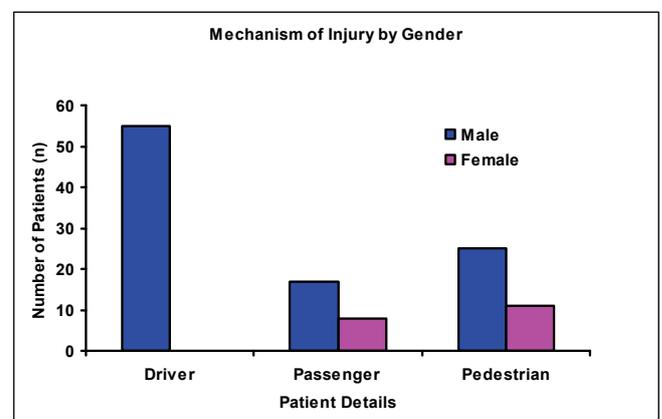


Figure 1.

Figure 2 contrasts the region of the injury in males and females.

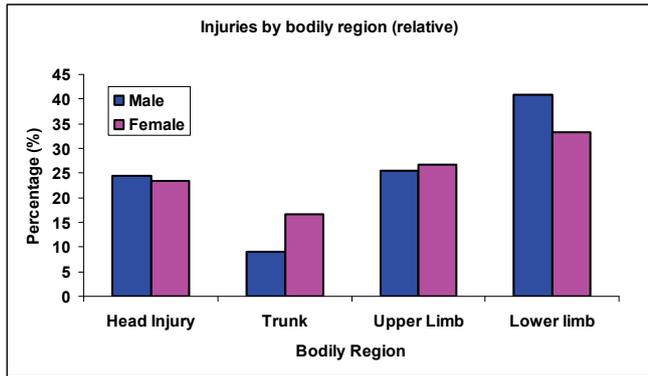


Figure 2.

Table 1 lists the injury by region for drivers, passengers and pedestrians.

Table 1. Injury by region for drivers, passengers and pedestrians

Injury by Region	driver n=58		passenger n=23		pedestrian n=35	
	No.	%	No.	%	No.	%
Head Injury	12	20.7	4	17.4	10	28.6
Facial Injury	15	25.9	6	26.1	3	8.6
Neck	0	0.0	0	0.0	0	0.0
Chest	4	6.9	1	4.3	2	5.7
Abdomen	4	6.9	1	4.3	3	8.6
Back	2	3.4	1	4.3	3	8.6
Shoulder joint	7	12.1	3	13.0	3	8.6
Upper arm	2	3.4	0	0.0	0	0.0
Elbow joint	8	13.8	2	8.7	5	14.3
forearm	6	10.3	3	13.0	2	5.7
Wrist joint	0	0.0	0	0.0	1	2.9
Hand	10	17.2	1	4.3	0	0.0
Hip joint	0	0.0	1	4.3	4	11.4
Thigh	8	13.8	1	4.3	4	11.4
Knee joint	10	17.2	5	21.7	8	22.9
Shin/calf	11	19.0	5	21.7	8	22.9
Ankle joint	4	6.9	1	4.3	1	2.9
Foot	6	10.3	3	13.0	2	5.7
Head	27	46.6	10	43.5	13	37.1
Trunk	10	17.2	3	13.0	8	22.9
Upper limb	33	56.9	9	39.1	11	31.4
Lower limb	39	67.2	16	69.6	27	77.1

The commonest injuries:

- in males were lacerations (50), abrasions (26) and fractures (24)
- in females were contusions (8), lacerations (6), abrasions (5) and fractures (3).

Almost two thirds presented with polytrauma.

Figure 3 shows the type of injury to the 81 drivers and passengers caused by type of collision. Lacerations were the commonest type of injury with

fractures seen more commonly in patients who had been hit by a car or had fallen from their motorbike.

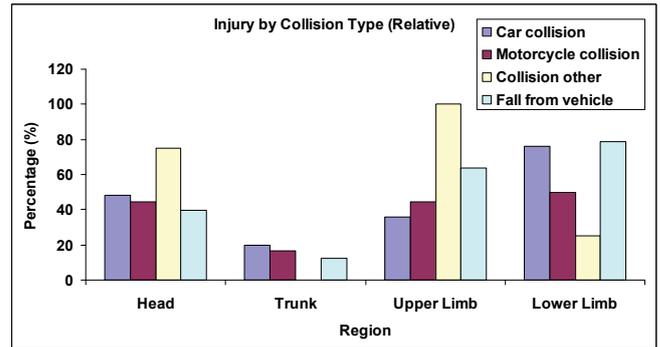


Figure 3.

Risk Factors

Figure 4 compares the risk factors associated with drivers and passengers.

Of the 58 injured drivers: 45.6% had no motorcycle license, 96.5% were not wearing a helmet and 24.6% had been drinking alcohol.

Of the 23 passengers: 26.1% were being driven by a driver without a license, 91.3% were not wearing a helmet and 4.3% had been drinking alcohol

Of the 35 injured pedestrians: 16.7% were hit by a driver without a license.

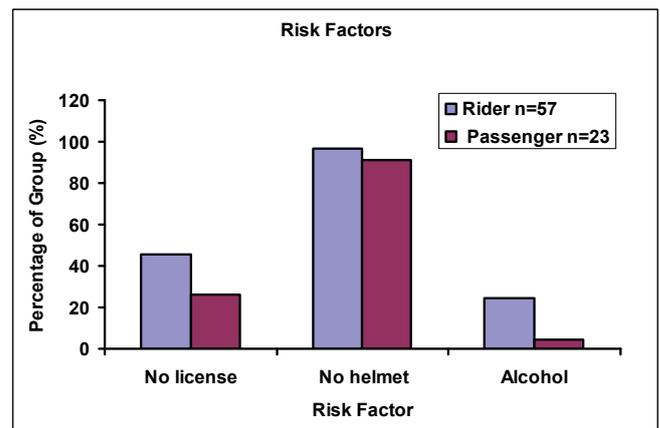


Figure 4.

Ward Admissions

Forty-four patients were admitted to the ward for observation and treatment. Figure 5 shows the percent of all drivers, passengers and pedestrians who were admitted. Of these:

- 40 (90.9%) were male
- 30 had a head injury, 29 had a lower limb injury, and 9 had a truncal injury.

Because many patients had polytrauma the number of injuries was more than 44. Of those with:

- a fracture 77.8% were admitted (21/27) including all three open fractures
- lacerations 37.5% (21/56) were admitted
- abrasions 29.0% (9/31) were admitted
- contusion 16.7% (5/30) were admitted
- haematoma 60% (3/5) were admitted

- dental trauma 71.4% (5/7) were admitted
- All patients with substantial external haemorrhage (3/3) or joint dislocation (3/3) were admitted.

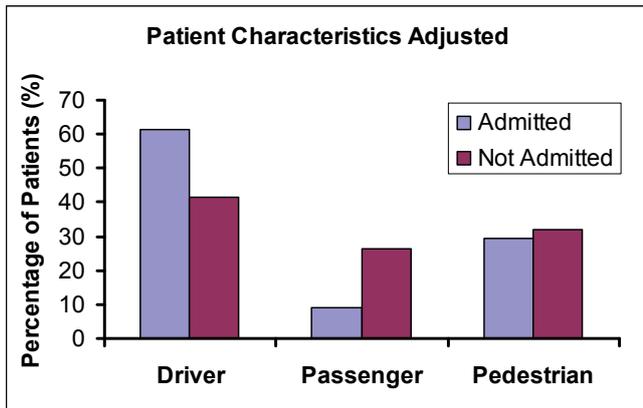


Figure 5.

Discussion

In this study 44 cases of MRT were admitted over the four-week period - a figure higher than the number admitted under the heading road traffic accidents (RTA) over the same period in the previous year. The average monthly admissions for RTA over the entire year was 49.9 patients. Road accidents increased between April and August. This may be due to the more difficult road conditions or decreased visibility caused by the rainy season.

Over 70% of the MRT accidents in this study occurred on the paved roads in Central Juba. Possible reasons are:

- traffic density is high as the paved roads are the main thoroughfare for the city
- the roads are smooth so drivers may drive with less caution
- the straight roads allow drivers to attain a higher speed.

No formal assessment of cognitive function was carried out in those who sustained head injuries and it is therefore not clear what proportion of these patients had persisting impairment of executive function, short-term memory or concentration. A future study needs to incorporate a tool for assessing cognition. Due to lack of Computerised Axial Tomographic (CT) scanning of the brain, brain injuries such as contusions, subdural and extradural haematoma could have been missed.

The study has identified MRT as a significant problem in terms of hospital resources and expenditure and individual morbidity and mortality. At present it is the only study of its kind in South Sudan and the results share many similarities with MRT in other countries ^{1,2,3,4}.

Limitations to this study include note taking and translation errors, imprecise diagnoses due to limited

imaging resources, inaccurate description of the timing of the accident or age of the patient, patient self discharge and incomplete recording of patients presenting at night who were not admitted.

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These results highlight the need for improved rehabilitation services at Juba Teaching Hospital (and other hospitals in South Sudan). There are only two physicians and a competent surgeon at JHT - none of whom has the training or a specialist interest in Rehabilitation Medicine. There are no fully qualified occupational therapists, speech and language therapists or physiotherapists. The Acute Medical services are overstretched and the Physiotherapy service is not equipped with basic facilities such as parallel bars and exercise bicycles. The physiotherapists are upgraded medical or clinical officers - see Southern Sudan Medical Bulletin vol. 2 issue 2 page 11, May 2009.

CASE REPORT: Pulmonary hydatid disease

Dr. Peter Adwok Otto, Abu-Anja Hospital, Khartoum adwokotto@hotmail.com

A 26-year-old married male soldier from Kaduguli, Khordofan Region, was admitted to Abu-Anja Hospital in Khartoum with a six-month history of cough and chest pain. The cough was productive of copious sputum and occasionally stained with blood.

At onset, the cough had been non-productive and not associated with other symptoms of clinical significance. The patient denied recent weight loss and had weighed 67 kilograms at Kaduguli Hospital. A clinical diagnosis of tuberculosis was made and empirical anti tuberculous therapy started. There was no improvement after three months necessitating admission to Abu-Anja Hospital. The patient smoked cigarettes and consumed an unspecified amount of alcohol.

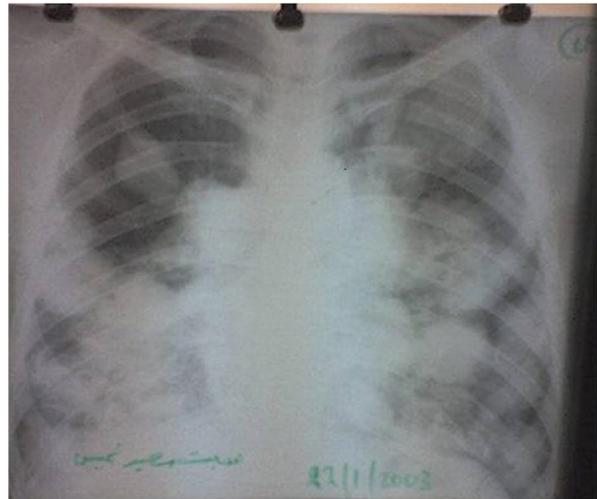
Clinical Examination

On clinical examination the patient was in good general condition without finger clubbing, pallor of mucous membranes or wasting. There was a regular pulse of 97 per minute with a blood pressure of 130/85.

Wheezes were heard in the chest and evident bilateral basal crackles. The following differential diagnoses were considered: broncho-pulmonary aspergillosis, lymphangitis carcinomatosa, chronic fibrosing alveolitis (CFA) and hydatidosis. A number of investigations were carried out to arrive at a diagnosis

Results of investigations.

The chest Xray (CXR), the cheapest test available to us revealed multiple rounded opacities simulating canon balls (see Figure 1). The full blood count showed a haemoglobin of 12.7gm/Litre, total white cell count was 9,800/cubic millilitre (2% eosinophils, 10% lymphocytes, 2% monocytes, 86% polymorphonuclear cells). The blood film showed normochromic normocytic red cells. Ultrasonography of the abdomen revealed large kidneys with bilateral renal cysts (see Figures 2 and 3), but the appearance of the liver, spleen, gall bladder and pelvic organs was normal. Three sputum samples for acid alcohol fast bacilli (the causative organism for tuberculosis) were negative. The Mantoux test produced a 12mm weal suggestive of previous exposure to tuberculous organisms or BCG immunisation. The Casoni's test was negative.



Picture 1. X-ray of lungs showing rounded opacities (canon balls) in both lungs.



Figure 2 Ultrasound of the kidney showing cyst.

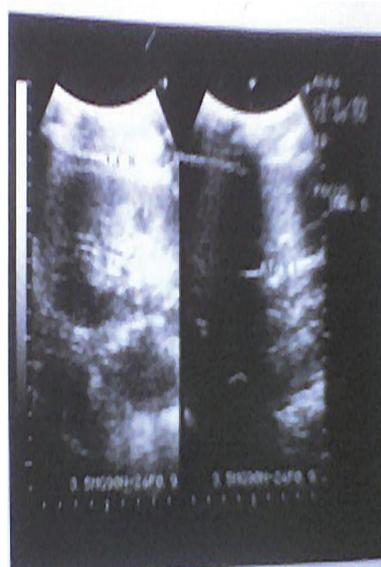


Figure 3: Ultrasound of both kidneys showing multiple cysts.

Differential Diagnosis

The following differential diagnoses after the tests were considered: metastases to the lungs, pulmonary hydatid disease and coal workers' pneumoconiosis.

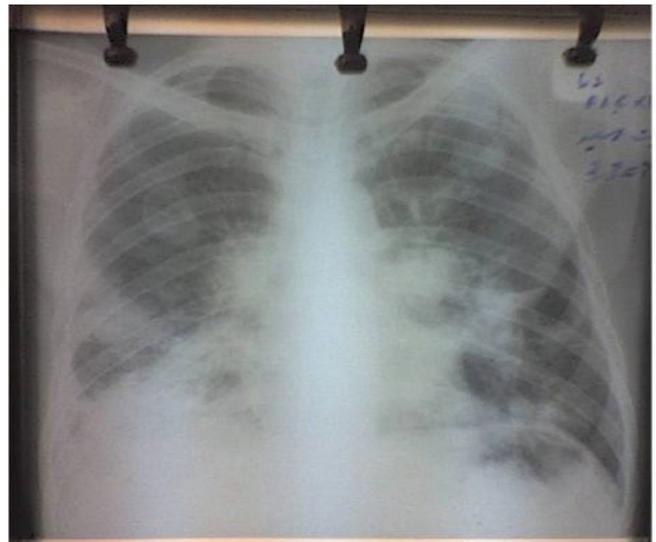
Metastases to the lungs and pneumoconiosis were considered less probable given the patient's good general condition and his occupation. Coal mining is not carried out in the Sudan. Pulmonary hydatid disease was considered the most likely clinical diagnosis as this condition is not uncommon in the Sudan. The patient was treated with albendazole 400mgs twice a day taken with meals, aiming to complete three cycles of twenty-eight days of treatment separated by fourteen days of treatment free periods. He also received supportive treatment with analgesics, multivitamin tonic and cough relieving medication. He was prescribed anti emetics, as nausea is a recognised side effect of albendazole.

Follow-Up

Two months after starting treatment some resolution of the lung opacities was noted (see Figure 4). The cough had resolved and his chest pain improved. No follow up ultrasonography was available to gauge any improvement in the involved internal viscera following treatment with albendazole.

Discussion

On the basis of the improvement in the patient's clinical and radiological features following treatment with albendazole, the final diagnosis was hydatid disease with pulmonary involvement. Hydatid disease occurs when humans ingest the larval stage of the dog tapeworm *Echinococcus granulosus* or *multilocularis*. Infection with *E.granulosus* occurs in early childhood when children come into contact with infected dog's faeces or when they eat vegetables or improperly washed vegetables or fruit contaminated with dog faeces. The embryos hatch in the duodenum, penetrate the portal blood system and are carried to the liver, lungs and almost all organs in the body. Cysts develop over the years in the affected organs and produce their effects by sheer pressure unless the cysts rupture when anaphylaxis may occur. It is surprising that the liver in this patient was not as affected as his kidneys and lungs as it is usually the most commonly affected organ.



Picture 4. X-ray of lungs showing resolving rounded opacities.

References

1. *Clinical Medicine* edited by Kumar P, Clarke M and Saunders WB pp96-97 4th Edition 1998
2. Magambo JK, Zehyle E and Wachira T. *Hydatid Disease in Toposaland, Southern Sudan*. Africa J Health Sci. 1998; Jul-Dec v5 (3-4):129-32
3. *Guidelines for the treatment of cystic and Alveolar Echinococcus in humans*. WHO informal working Group on Echinococcosis. Bull. World Health Organisation 1996;74:231-42

DID YOU KNOW?

1. Every year, around 3.7 million babies die during their first four weeks of life. See page 12 for what you can do to reduce these deaths.

And:

2. More than 500,000 women in developing countries die every year as a result of complications during pregnancy and childbirth. About half of these deaths occur in sub-Saharan Africa where a woman's lifetime risk of maternal death is 1 in 22, compared with 1 in 8,000 in industrialised countries. About 1/3 of these deaths are caused by haemorrhage.

Source:

http://www.childinfo.org/maternal_mortality_progress.html

WHO/UNICEF Joint Statement on home-based care of newborns

Every year, around 3.7 million babies die during their first four weeks of life. Most of these newborns are born in developing countries and most die at home. Up to two-thirds of these deaths can be prevented if mothers and newborns receive known, effective interventions.

Studies have shown that interventions delivered to newborn babies in their homes can prevent 30–60% of deaths in high mortality settings under controlled conditions. On the strength of this evidence, WHO and UNICEF now recommend a series of home visits in the baby's first week of life to improve newborn survival.

A WHO/UNICEF Joint Statement on **Home visits for the newborn child: a strategy to improve survival** recommends that home visits occur on days one and three of a newborn's life, and if possible, a third visit should take place before the end of the first week of life. During home visits, skilled health workers should perform the following measures:

- Promote and support early (within the first hour after birth) and exclusive breastfeeding
- Help to keep the newborn warm (promoting skin-to-skin contact between mother and infant)
- Promote hygienic umbilical cord and skin care
- Assess the baby for signs of serious health problems, and advise families to seek prompt medical care if necessary (danger signs include feeding problems, or if the newborn has reduced activity, difficult breathing, a fever, fits or convulsions, or feels cold)
- Encourage birth registration and timely vaccination according to national schedules
- Identify and support newborns that need additional care (e.g. those that are low-birth-weight, sick or have an HIV-infected mother).

For more details see http://www.who.int/child_adolescent_health/news/archive/2009/09_07_08/en/

Extract from CAH newsletter - *Reaching Out*, Issue 13 Aug09

To subscribe to this newsletter: please send an email titled UPDATE-SUBSCRIBE to cah@who.int

'Work with your heart' was the theme of **World Heart Day** on 27 September 2009. Among the materials available is a leaflet that provides tips on how people can improve their heart health. To download go to www.world-heart-federation.org/fileadmin/user_upload/images/members_area/world_heart_day_2009/WHD-Leaflet-09.pdf

Extracts from the leaflet 'Work with your heart'

How you can take steps towards a healthier workplace:

- Be physically active during your day. Create, or participate in an existing sport or fitness group and tell your colleagues about it.
- Walk around your building or exercise during your lunch break. Include physical activity in your working schedule and encourage others to do so too.
- Provide your colleagues with information about the benefits that they can gain from being physically active on a regular basis.
- Insist on a smoke-free environment.

Tips for devising your own personal workplace programme:

- **Healthy food intake** – Eat at least five servings of fruit and vegetables a day.
- **Get active and take heart** – Even 30 minutes of activity can help to prevent heart attacks and strokes and your work will benefit too. Take the stairs, go for a walk during your break, or get off the bus a couple of stops earlier and walk the rest of the way.
- **Use less salt and avoid processed foods** – Try to limit your salt intake to about a teaspoon per day. Be wary of processed foods, which often contain high levels of salt.
- **Say no to tobacco** – Your risk of coronary heart disease will be halved within a year and will return to a normal level over time.
- **Maintain a healthy weight** – Weight loss, especially together with lowered salt intake, leads to lower blood pressure. High blood pressure is the number one risk factor for stroke and a major factor for approximately half of all heart disease and stroke.

Reports and news from Southern Sudan

Developing Quality Primary Health Care in Yei, Southern Sudan - the challenges and successes

Poppy Spens, Health Project Development Coordinator, ECS Dioceses Yei and Lainya, CMS Ireland Affiliate. poppy.spens@gmx.com

The Martha Primary Health Care Centre (PHCC) originally started as a health unit in 1980. It was the idea of a school head mistress. It ceased to function during the war. The facility was re-developed in 2003 with a building funded by the Diocese of Salisbury (UK) and managed by the Diocese of Yei (Episcopal Church of Sudan ECS) The Diocese of Salisbury also funded the training of a nurse and a clinical officer.



In 2006, a Nurse Practitioner with extensive Primary Care experience in UK and a Diploma in Tropical Diseases was sent by Church Mission Society Ireland (CMS Ireland) as a volunteer to work with the ECS in Yei to help further develop Primary Care. Later in 2006, CMS Ireland in partnership with the ECS Diocese of Yei was successful in attracting a grant from Irish Aid to build and equip, train staff, and fund medicines and salaries for a year to provide a high quality PHCC. The facility was built in 2007 by the International Medical Group Contract Division, Kampala, and opened in February 2008. The new building is positioned beside the original building (the picture shows some of the staff outside this new building). The older building is used for preventative work including ante-natal, immunisations and HIV testing and counselling. Sick patients attend the new building, which is equipped to a high standard. Patient numbers have risen sharply.

The PHCC (see the picture below) places high emphasis on health education, and in 2007 carried out a Community Health Survey to identify health needs and also health beliefs of the local population. This formed the basis of the early health education programme funded by a UK charity.



The Irish Aid budget included the training of 10 Health Care Assistants in Kampala at the International Hospital, and funded training for a Laboratory Technician, a Clinical Officer and four Nurses. The Health Care Assistants were trained to a very high standard, studying modules in following treatment pathways, ante-natal care, health education, immunisation, management, assisting in the laboratory, and pharmacy management.

The PHCC aims to provide excellent affordable outpatient Primary Care to all local residents with no discrimination of tribe, race or religion.

Martha PHCC now has a competent, enthusiastic and committed staff team of 22, led by a trustworthy dedicated management team of three senior staff and managed by the Clinical Officer (CO) under the Diocesan Health Committee. The lead clinician for the PHCC is the very skilled CO, and the new projects are managed by the Nurse Practitioner from UK. Nursing, laboratory technician, midwife and CO students are sent to Martha on placements.

Treatment protocols, an excellent stock and ordering system, financial systems, staff contracts and continuing education policies are in place. Reports are sent regularly to MOH and County Health Department for surveillance and record keeping purposes.

Martha PHCC works in partnership with the American Refugee Committee for HIV work, with Population Services International (PSI) to provide malaria nets and treatment and TPO Health Net who provide psychological counselling. The PHCC is also very grateful to the Diocese of Salisbury in UK who have had a medical link with Sudan for many years, and supply some medicines each year as well as funding the training of the Clinical Officer.

Patient numbers and diagnoses for August 2009

Number of sick patients treated	Children immunised	Ante-natal mothers	Total patient number	Percentage of mothers HIV positive
1430	1286	1060	3776	2.5%

Numbers of patients with specific major diseases required to be reported to MOH during August 2009

Disease/syndrome	Under 5 yrs	Over 5 yrs	Total
Acute watery diarrhoea	14	6	20
Diarrhoea with blood	8	4	12
Malaria	376	248	624

Other significant diseases diagnosed during August 2009

Disease/syndrome	Total numbers
Bilharzia	12
STIs	79
Intestinal parasites	128

Martha PHCC operates an affordable cost-sharing scheme. With a strict accountability system, Martha PHCC pays its staff without fail each month, is well stocked with medicines and equipment and covers 70% of its own costs. Martha PHCC follows Government of South Sudan Ministry of Health (GOSS MOH) guidelines for treatment.

In December 2008, CMS Ireland received a substantial grant from the Basic Services Fund for Sudan (BSF) - included in this was an allocation for a Mobile Health Unit to operate from Martha PHCC (see picture below).



After working with the County Health Departments of Yei River and Morobo Counties, five villages have been identified as needing health provision. Starting in October 2009, each village will receive a weekly visit from the mobile unit, which will be staffed by a Nurse or Clinical Officer, a Community Health Worker, a Midwife and an HIV Counsellor. The aim will be to treat the sick, provide ante-natal care, give child immunisations, run a malnutrition project, give health education and raise the capacity of local health staff including traditional birth attendants. If needed, a sick patient could be taken to hospital at the end of the day. BSF funding allows for the training of another nurse and

midwife. Each village will have its water and sanitation needs addressed. Village health committees from each village have been trained in borehole maintenance and basic health.

Four of the Martha staff are receiving up-skilling training thanks to various donors. Two are at the new International Health Sciences University in Kampala sponsored mainly by two Primary Care facilities in the UK, and one by the Church Health Association Sudan. One Nurse has just returned from the University of Liverpool (UK) and another nurse is a medical student in Khartoum (whose course fees are funded by GOSS and some of his living expenses by some doctors in Winchester, UK).

There have been many successes as described above but also many challenges and frustrations. The particular challenges have been:

1. Maintaining drug supplies at optimum levels due to logistical issues.

2. Encouraging medical ethics and time keeping with staff (the staff are now well committed and of excellent calibre)
3. Accessing competent training in South Sudan due to organisational and communication issues with the MOH. This is largely due to geographical and IT difficulties but also due to the financial constraints on MOH. As a small team, it is hard to regularly visit Juba where the relevant offices are.
4. Martha PHCC pays for most of its medicines and so far has not received any from the MOH. We are hoping that our regular requests for medicines sent in to MOH will soon be successful.
5. Martha PHCC pays for all its staff salaries, apart from the two on the MOH payroll who are paid irregularly. When they are not paid, the PHCC has to pay them direct.
6. Current bank problems since March 2009, resulting in the PHCC being unable to access its funds.

It is hoped that the above problems will be resolved to ensure the sustainability of a quality primary care service.

Future Plans

Due to the generosity of donors in the UK, Martha PHCC is hoping, in the very near future, to expand its services by creating extra space by renovating an unfinished large building adjacent to the current facility. There is also the possibility of setting up a much needed eye care service.

Extra funding has been received from Irish Aid and BSF to:

- begin a second similar high quality PHCC outpatient service in Lainya Diocese and
- provide mobile outreach to Internally Displaced People's camps (IDP) near Lainya (see picture on cover).

The outreach started in August 2009 and the new PHCC will open in January 2010.

Also it is hoped to arrange a link between Yei Civil Hospital and a hospital serving a similar sized population in the UK.

All this could not have been achieved without the help of donors and the commitment of an excellent staff team, to whom I am greatly indebted.

Photographs supplied by Poppy Spens.

Southern Sudan loses a good friend

Dr Christopher Wood (OBE), a former Director-General of AMREF died in August at the age of 85. Chris will be particularly missed by the health community in Southern Sudan. His first visit was in the early 1970s when he was a health advisor to Sudanese People's Liberation Movement. He helped to develop of the first Health Policy of Southern Sudan following the initial peace agreement in 2003. This paved the way for AMREF's current engagement with the Government, including support for the development of the country's policy on human resources for health. Chris was also involved in setting up the Maridi Training Institute.

After his retirement in 1989, Chris continued to consult for AMREF and was involved with AMREF's training programmes, especially those in Southern Sudan. Last year he was awarded the Order of the British Empire for his work in bringing health care to marginalised African communities.



Chris Wood lasting legacy to the Africa he loved is that the training of health workers and the development of primary health care are now firmly established across the continent.

Chris Wood in one of the 'classrooms' at the half-built Community Health Workers' Training School at Liria outside Juba. Thanks to Peter Godwin for this photo.

To listen to an interview with a clinical officer in Southern Sudan – go to www.AMREF.org under media updates. You need [Adobe's Flash Player](#) plug-in installed in your browser to hear this.

Tuberculosis Information on Southern Sudan from USAID is at: http://www.usaid.gov/our_work/global_health/id/tuberculosis/countries/africa/ssudan_profile.html and general information about tuberculosis is at http://www.usaid.gov/our_work/global_health/id/tuberculosis/

Extracts from Journals, etc.

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

HIV/AIDS:

Change in drug treatment reduces HIV infection in newborn babies

HIV-positive pregnant women who take a combination of three ARV drugs from the last trimester of pregnancy until six months into breastfeeding (rather than a short course of drugs that ends at delivery) are over 40% less likely to infect their babies.

The WHO-led 'Kesho Bora' study involved 1,140 women from Burkina Faso, Kenya and South Africa and showed that a significant reduction can be achieved in many pregnant women with a lowered immune cell count.

HIV-positive mothers face a tough choice between breastfeeding their babies and risking the transmission of the virus through their milk, or giving them formula which deprives infants of the natural immunity passed on through breast milk and helps protect against diarrhoea, malnutrition and other potentially deadly diseases.

The Kesho Bora results increase the range of treatment options available to HIV+ mothers and gives them a greater chance of safely breastfeeding their babies. There is no increased risk to the health of the mother or the infant associated with this triple-ARV regimen, consisting of zidovudine, lamivudine and lopinavir/ritonavir.

Extract of findings presented at the 5th International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, Cape Town, South Africa. See

<http://www.ias2009.org> and

<http://www.un.org/apps/news/story.asp?NewsID=31545&Cr=UNAIDS&Cr1=22> July 2009.

Facility versus home-based care of HIV patients

In rural sub-Saharan Africa, access to treatment is commonly denied to patients who live far from health centres. A cluster-randomised trial of facility versus home-based care in Uganda found no difference in mortality and virological suppression. Median annual costs for patients accessing care were five-times less via the home-based approach. *Extract from Highlights of the International AIDS Society Conference in The Lancet Infectious Diseases, vol 9, issue 9, Page 528, September 2009*

Doctor versus nurse provision of ART

An important barrier to accessing care is the chronic shortage of doctors to provide antiretroviral therapy. To overcome this, nurse-based models of care have been proposed. Two studies—a randomised trial from South Africa and a concordance study from the Democratic Republic of the Congo—found no difference in the performance of doctors and nurses

in the provision of ART care, providing reassuring evidence of effectiveness. *Extract from Highlights of the International AIDS Society Conference in The Lancet Infectious Diseases, vol 9, issue 9, Page 528, September 2009*

Child health:

Mixed progress in reducing world under-5 mortality

The aim of the 4th Millennium Development Goal is to reduce under-5 mortality by two thirds between 1990 and 2015. A new UNICEF report shows that, although fewer children died between 2000-2008 than between 1990-2000, the rate of decline is presently too slow in many countries to reach this Goal. However the effect of interventions such as vaccination programmes and insecticide-treated bednets, may improve the rates.

The key findings are:

- The estimated global mortality for children under-5 in 2008 is 65 per 1,000 live births, versus 90 in 1990
- Around 8.8 million children under 5 died during 2008, compared with 12.5 million in 1990
- Africa (51%) and Asia (42%) represented 93% of all deaths globally.

Extracted from UNICEF Press Release September 2009.

Update on zinc supplementation

Zinc deficiency is responsible for ~4% of worldwide morbidity and mortality of young children. A new technical document from the **International Zinc Nutrition Consultative Group (IZiNCG)** provides information on intervention strategies for controlling zinc deficiency and reviews their efficacy and effectiveness. These analyses confirm that:

- Preventive supplementation reduces the incidence of diarrhoea by ~27% in young children over 12 months and the incidence of acute lower respiratory tract infections by ~15%; it may reduce the incidence of malaria. An earlier meta-analysis showed that zinc supplementation during pregnancy reduced the rate of preterm births by 14% but there were no consistent effects on complications of labour or delivery, or on birth weights.
- Therapeutic supplementation as an adjunct treatment reduced the duration of acute diarrhoea by 0.5 days and of persistent diarrhoea by 0.7 days (see WHO guidelines on treatment of diarrhoea below). There is insufficient evidence to know whether zinc enhances the treatment of respiratory infections; studies have found no impact on the outcome of malaria treatment.

To see the full document (Technical Document no. 2. Systematic reviews of zinc intervention strategies) and a one-page summary of advocacy points see www.IZiNCG.org or

http://www.foodandnutritionbulletin.org/downloads/FNB_v30n1_Supplement_izinc.pdf

WHO/UNICEF recommendations on zinc supplementation in the management of diarrhoea

Children with acute diarrhoea need zinc supplements for 10-14 days at the following doses:

- Children aged <6 months give 10 mg zinc/day.
- Children aged 6 months - 5 years give 20 mg zinc/day.

For details on how to treat diarrhoea and specifications of zinc products see WHO/UNICEF. *Implementing the new recommendations on the clinical management of diarrhoea: guidelines for policy makers and programme managers*. Geneva: WHO, 2006 at http://whqlibdoc.who.int/publications/2006/9241594217_eng.pdf

Other topics:

Heart disease and H1N1

Cardiac patients are among the at-risk groups that should receive the H1N1 flu drug oseltamivir (Tamiflu) as soon as they are suspected of having swine flu, according to WHO's Guidelines for Pharmacological Management of Pandemic (H1N1) 2009 Influenza and other Influenza Viruses. The guidelines are available at www.who.int/csr/disease/swineflu/notes/h1n1_use_antivirals_20090820/en

Sepsis in low-income countries

Sepsis is a disorder characterised by systemic inflammation secondary to infection. Despite recent progress in the understanding and treatment of sepsis, no recommendations exist that give effective approaches to sepsis care in resource-limited low-income countries. Due to the prevalence of HIV and other conditions, sepsis is probably substantially contributes to mortality in these countries. Health personnel should be educated in the recognition of sepsis and the importance of early and appropriate antibiotic use. Simple and low-cost standardised laboratory testing should be emphasised to allow accurate diagnosis, prognosis, and monitoring of treatment response.

From: Surviving sepsis in low-income and middle-income countries: new directions for care and research Becker JU et al Lancet Infectious Diseases, vol 9 issue 9, 577 - 582, September 2009.

For your resource centre

Child Health and Nutrition:

Field Exchange – searchable archive on a free CD or in hard copy

Field Exchange is a free well-illustrated useful publication available in hard copy. It is published 3 times a year by the Emergency Nutrition Network

(ENN) and distributed to those working in the fields of emergency nutrition and food security. To join the mailing list contact ENN using the address below.

ENN has produced an online search database, accompanying CD and print catalogue of the archive of **Field Exchange** (issues 1-35) This allows you to find all the articles related to a particular topic or country – for example, Southern Sudan. The e-version and online search is available at <http://fex.ennonline.net> or follow the Field Exchange link from the home page <http://www.ennonline.net>

The CDs and the print catalogue are available free from: ENN, 32, Leopold Street, Oxford, OX4 1TW, UK office@ennonline.net. Bulk CD orders are welcome – contact ENN re mailing costs.

Examples of articles in Field Exchange related to Southern Sudan:

- Addressing chronic malnutrition in South Sudan (issue 31, page 6)
- Home treatment for severe malnutrition in South Sudan (issue 28, page 18)

Community Nutrition: A Handbook for Health and Development Workers 2009

This new book has been written for health and other development professionals who work at community and district levels, as well as for teachers and students of nutrition. It is written in an easy to read style and is well illustrated.

The book covers nutrients and foods, feeding the family and the causes, diagnosis and control of malnutrition through the life cycle. It deals with undernutrition and micronutrient deficiencies and pays particular attention to the emerging challenge of chronic conditions (such as diabetes, obesity, hypertension and cardiovascular diseases) and to the links between nutrition and HIV. It gives guidelines on programme implementation and on changing behaviour through better communication, and has appendices on energy and nutrients needs, sources of nutrients, food composition tables and anthropometric measurements as well as a list of additional sources of information.

The book is edited by Ann Burgess, Marlou Bijlsma and Carina Ismael with contributions from other nutritionists working both in and outside Africa. It is available from Teaching-aids At Low Cost (TALC) www.talcuk.org price UK£5.50 plus delivery, and the African Medical and Research Foundation (AMREF booksbop, PO Box 30125-00100, Nairobi, Kenya, info.amref@amref.org).

WHO Fact Sheets on Child Health

These new Fact Sheets provide basic but useful information for members of the news media and

other audiences, and could be useful in preparing health education for the public. They are:

- Diarrhoea
www.who.int/mediacentre/factsheets/fs330
- Pneumonia
www.who.int/mediacentre/factsheets/fs331
- Early child development
www.who.int/mediacentre/factsheets/fs332
- Reducing newborn mortality
www.who.int/mediacentre/factsheets/fs333 – see page 12

Fact sheet on using the 2006 WHO Child Growth Standards in nutrition programmes for children aged 6-59 months

This fact sheet gives a framework and guidance for changing from the 1977 National Centre for Health Statistics/WHO growth reference to the 2006 WHO Child Growth Standards. It should be useful if you are involved with nutrition surveys and with programmes for the management of acute malnutrition.

The Fact Sheet attempts to answer the common questions that may arise during the change-over process. More information is on the WHO website or the links at the end of the fact sheet.
http://www.unscn.org/files/Task_Forces/Assessment_Monitoring_and_Evaluation/WHO_GS_English.pdf From IASC Global Nutrition Cluster, and Standing Committee on Nutrition (SCN) Task Force on Assessment, Monitoring, and Evaluation

Nutrition in Emergencies: Harmonized Training Materials Package and Toolkit

The Global Nutrition Cluster, in partnership with NutritionWorks has developed:

1. **The Harmonized Training Materials Package.** The materials cover a broad range of subject areas concerned with nutrition in emergencies. Based on priority capacity gaps in nutrition in emergencies, 21 areas were identified for inclusion in the training package. Each module comprises four sections: i) briefing paper for senior decision makers; ii) technical notes for practitioners; iii) trainers' guide and iv) reference material/sources.

2. **A Toolkit** – this is an easy-to-use field guide that outlines the key basic interventions for nutritional support to individuals and groups during an emergency situation. It provides the what, why, when, and how for different nutrition interventions, including basic monitoring benchmarks and expected standards. The Toolkit offers guidance and support for nutritionists and humanitarian workers to ensure that basic guidelines are followed and the basic nutritional needs of populations in emergencies are met.

Materials can be downloaded from

www.humanitarianreform.org/Default.aspx?tabid=488

Other topics:

The Clinical Practice Guideline Development Handbook for Stroke Care

This 26-page handbook provides a basic guide for healthcare professionals who wish to develop or adapt clinical guidelines for stroke care across any point in the continuum of care. It is particularly intended for those who manage stroke patients in developing countries or where healthcare resources are scarce. It aims to promote the use of evidence-informed care through locally developed or adapted guidelines without compromising the quality of the resource. *The handbook was developed by the World Stroke Organization in 2009 and is available at <http://www.world-stroke.org/guidelines.asp>*

Surgery in Africa Monthly Reviews:

- August 2009 Review, "Lower Gastrointestinal Hemorrhage – a Review for African Surgeons " by Brian Ostrow
- September 2009 Review, "Intracranial Infections" by David W. Cadotte; Malika Sharma and Mark Bernstein

These reviews, archives of reviews since 2005 and a resource library, are available free at www.ptolemy.ca/members

The Iodine Deficiency Disorders Newsletter

August 2009 issue has an article on the importance of iodine in women's health, and can be downloaded from <http://www.iccid.org>.

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

Please send articles and news for future issues of the Southern Sudan Medical Bulletin to Dr Eluzai Hakim Eluzai_hakim@yahoo.co.uk or Dr Wani Mena wanimena@gmail.com. Deadline for the February 2010 issue is 30 November 2009.