

THE STANDARD DRUG TREATMENT GUIDELINES



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FOREWORD

The availability of Essential drugs and their rational use are acknowledged as fundamental elements in the provision of health services. In this regard, efforts are being made to ensure that the components outlined in the Gambia National Drug Policy, are implemented.

In developing the Gambia Standard Drug Treatment Guidelines, the Department of State for Health is establishing the standard for the diagnosis and treatment of the majority of health problems in the country. The use of this manual will therefore contribute towards a more rational and cost-effective utilization of drugs at all levels of the health service delivery system.

The Gambia Standard Drug Treatment Guidelines is meant for prescribers (Medical Doctors & Nurses) in hospitals, health centres and dispensaries. It is also a useful guide to those in private practice, including pharmacies. The treatment guidelines can also serve as a reference document, especially for training purposes.

This document is the product of collaborative efforts involving Medical Doctors, Pharmacists, Nurses and other health professionals in public, private and Non-Governmental Organizations (NGO) health institutions in the country. The Department of State for Health wishes to thank all those who have contributed either as members of the committee or participated during the workshops in the development and subsequent review of the Standard Drug Treatment Guidelines.

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Dr. Yankuba Kassama

SECRETARY OF STATE FOR HEALTH & SOCIAL WELFARE

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CHAPTER ONE

MALARIA

MALARIA

Malaria is a leading cause of morbidity and mortality in The Gambia, particularly in children and pregnant women. The adequate management of this condition at all levels of the health care delivery system is essential. Laboratory diagnosis of malaria, where possible, is also of utmost importance. The following recommendations give a guide to appropriate management, especially in the light of increasing drug resistance.

I. MANAGEMENT OF UNCOMPLICATED MALARIA IN CHILDREN

Signs and Symptoms:

Temperature more than 37.5 ° C and less than 39.5 ° C; History of Fever; vomiting; Headache; abdominal pain;
Drinking well, fully alert, not pale; Able to sit/stand/walk unaided depending on age

Laboratory examinations where possible : Hb > 6g/dl
Malaria smear /BF: positive

TREATMENT : AS OUTPATIENT
Weighing start for children

Chloroquine 10mg/kg once daily for 3 days

* If the treatment fails or there is a positive BF after Chloroquine treatment :

Sulphadoxine & Pyrimethamine :
Stat dose of 1/2 tablet for every 10kg Bodyweight

Paracetamol - as antipyretic/analgesic

ADVICE ON ADDITIONAL FLUIDS. ALWAYS INFORM THE PARENT TO BRING THE CHILD BACK IF CHILD REMAINS UNWELL.

ALL STAT DOSES NEED TO BE GIVEN UNDER SUPERVISION AND THE CHILD NEEDS TO BE OBSERVED (for 30 minutes), IF VOMITING OCCURS: repeat stat dose after 30 minutes and observe. IF ORAL MEDICATION IS NOT TOLERATED, TREAT AS COMPLICATED MALARIA, section II.

II. MANAGEMENT OF COMPLICATED MALARIA IN CHILDREN

Signs and Symptoms:

Drowsiness, but able to drink; Temperature more than 37.5 ° C and less than 39.5 ° C ; vomiting; mildly dehydrated; No History of convulsions.

These children should have a bloodfilm taken and the Hb checked. BF > 500/Field

TREATMENT:
SUPERVISED OUTPATIENT TREATMENT OR CONSIDER ADMISSION

Sulphadoxine & Pyrimethamine : stat dose as in I
plus
Chloroquine : 10mg/kg once daily for 3 days
change to chloroquine injection - subcutaneous, if treatment is not tolerated

OBSERVATION FOR 1 TO 4 HRS : IF FLUIDS ARE NOT TOLERATED, TREAT AS SEVERE MALARIA, section III.

III. MANAGEMENT OF SEVERE MALARIA IN CHILDREN

Signs and Symptoms:

Very high temperature; Persistent vomiting; Severe Dehydration; Ketoacidosis; (sweet smell, deep breathing); History of convulsions; febrile convulsion; Hb < 6g/dl especially if B/F > 1000/field; unable to sit/stand/walk unaided depending on age; drowsiness, but able to localise painful stimuli; Hyperparasitaemia, Hypoglycaemia (Blood Sugar < 2.2mmol).

If signs of shock - cool extremities, low BP, weak pulse - treat as in section V.

TREATMENT: ADMISSION. CHECK: Hb, B/F and if possible blood sugar

Chloroquine injection : s.c. 5mg/kg every 6 hours (0.1ml/kg) x 7 doses
change to oral treatment as soon as possible, complete total dose of 30mg/kg.

and
Sulphadoxine & Pyrimethamine : statdose after 6 hours
(when vomiting has subsided)

Paracetamol

Fluids: by Nasogastric tube if possible, **Dextrose saline** 80 -100ml / kg/24hours

Anticonvulsant - see under fitting child, section IV.

Feeding by Nasogastric tube

Indications for i.v. fluids in severe Malaria:

- Excessive vomiting, uncontrolled
- Hypoglycaemia (B/S < 2.2mmol/l): CORRECT URGENTLY with 50% Dextrose i.v. (1ml/kg BW), then continue IV fluid Dextrose 5% or Dextrose Saline.
 - * I.V. fluids can be stopped as soon as the vomiting is controlled, the circulation is stable and a good urine output has been achieved.
 - * Monitor blood glucose

IV. MANAGEMENT OF CEREBRAL MALARIA IN CHILDREN

NB! THESE CASES NEED TO BE TREATED AT MAJOR HEALTH CENTRES OR HOSPITALS ONLY. BUT CHILDREN BEING REFERRED SHOULD RECEIVE STAT DOSES BEFORE REFERRAL!

1. THE FITTING CHILD

- Put in recovery position; Ensure free airways;
- Give anticonvulsant : **Diazepam** 0.1ml/kg injection slowly or rectally
- Check vital signs, Tepid sponging if pyrexia

If at a peripheral Health Centre, treat with :

Chloroquine s.c. 0.1ml/kg stat

check blood sugar, if not available: give **50% Dextrose** 1ml/kg i.v or concentrated sugar water by N/G tube

- If the child gains consciousness within 30 minutes: Carry out Blantyre Coma Score (see below), if C/S above 3 : treat as Severe Malaria section 3
 - If the child does not gain consciousness: treat as Cerebral Malaria section 4
- Rule out Meningitis and other causes of convulsions.

2. MANAGEMENT OF CEREBRAL MALARIA

Definition: An unconscious child with malaria with a Blantyre Coma Score (C/S) of 3 or below (30 minutes after a convulsion has stopped and hypoglycaemia has been treated effectively). A positive bloodfilm is also necessary.

THE BLANTYRE COMA SCORE (C/S) : Sum of the scores under A, B & C

BEST MOTOR RESPONSE SCORE		VERBAL RESPONSE	
Localizes painful stimulus*	2	Moaning or inappropriate cry	2
Withdraws limb from pain**	1	Appropriate cry	1
Non specific or absent	0	None	0
* Painful stimulus: rub knuckles on patient's sternum.			
**Painful stimulus: firm pressure on thumbnail bed with pencil			
EYE MOVEMENTS			
Directed (e.g.follows face)	1		
Not directed	0		

INVESTIGATIONS:

Hb. B/F, WBC, Blood sugar

Lumbar puncture to exclude concomittant Meningitis, unless the child is fitting.

TREATMENT:

Quinine i.m. 20mg/kg loading dose (omit loading dose if Chloroquine has been given previously)

continue **Quinine** i.m. 10mg/kg every 12 hours until the child has regained consciousness

continue oral **Quinine** 10mg/kg three times daily to complete 5 days treatment.

Sulphadoxine & Pyrimethamine tabs : statdose on discharge

SYMPTOMATIC TREATMENT OF CONVULSIONS, FEVER

Hypoglycaemia; fluid replacement; N/G feeding after 24 hours

ANTIBIOTICS IF:

children are posturing and cannot have a LP

children with signs of an LRI (Aspiration?)

Children in shock (see below)

TREATMENT : **Chloramphenicol** 25mg/kg/dose six hourly

V. MALARIA AND SHOCK SYNDROME

Very severe, children are usually older than 4 years, cold and clammy extremities, restless, irritable, Blantyre Coma Score usually above 3.

Often these children deteriorate and develop Cerebral Malaria within 24 hours; some have a history of Cerebral Malaria before.

MANAGEMENT:

Check B/S: often normal
WBC: usually very high
no other sign of infection

B/F : usually very high
CSF : normal

TREATMENT

Quinine : i.m. loading dose 20mg/kg body weight, then 10mg/kg 12 hourly i.m. as in cerebral malaria (omit loading doses of Quinine if the child received Chloroquine before)

Chloramphenicol : 25mg/kg body weight i.v. 6 hourly

or in severe cases and when cerebral involvement is ruled out:

Ampicillin : 100mg/kg Body weight 6 hourly i.v.

Gentamicin : 2.5mg/kg Body weight i.m. 12 hourly

IV Fluids : Strict fluid-management and check urine output

Dextrose Saline or **Normal Saline** with **50% dextrose** in older children : 30ml/kg stat in 30 min, then 70ml/kg in 4 hours, re-evaluate and continue maintenance 100ml/kg/day

VI. MALARIA AND ANAEMIA IN CHILDREN

Children who have a Hb below 8g/dl should receive regular Iron supplements at least for a month after the acute episode.

Treatment : 15mg **Ferrous Sulphate** / kg daily

Advice to impregnate bednet; and consider malaria prophylaxis

INDICATIONS for TRANSFUSION:

Hb below 5g/dl ; PCV of 15 and below; any sign of heart failure: oedema, tachycardia > 140/min; gallop rhythm, enlarged liver, respiratory distress, bilateral crepitations

AFTER CROSS MATCHING and HIV testing:

15 - 20ml/kg whole blood over 6 hours

10ml/kg packed cells

Frusemide 1mg/kg after 3 hours

VII. MALARIA PROPHYLAXIS

Malaria prophylaxis can never give full protection and should always be combined with other protective measures such as impregnated bednet; insect repellants & protective clothing. Encourage keeping the environment clean.

CHILDREN: Indications for prophylaxis

- children with sickle cell disease
- children with severe anaemia
- children after splenectomy
- children under immune suppressive therapy
- children from non-endemic areas
- Post-recovery from cerebral malaria

Prophylaxis:

1. Pyrimethamine weekly
2. Proguanil daily and Chloroquine weekly

ADULTS: Indications for prophylaxis

- Sickle Cell Anaemia
- Non Immune Adults
- Primigravidas (1st pregnancy)
- Patients after Splenectomy
- Patients under immune suppressive therapy

Recommendations:

1. Chloroquine 300mg weekly
 2. Pyrimethamine 25mg weekly
 3. Proguanil 200mg daily
- Disadvantage: daily medication; proguanil may cause mouth ulcers, epigastric pain
- or Mefloquine 250mg weekly (not to be used during pregnancy)
- Disadvantage: expensive; may cause psychiatric side effects: bad dreams
- or: Doxycycline 100mg daily (not to be used during pregnancy or in children)
- Disadvantage: daily medication; gastro-intestinal side-effects.

VIII. MANAGEMENT OF MALARIA IN PREGNANCY

Malaria in pregnancy is especially dangerous in primigravidas. Effects of malaria in pregnancy include: anaemia, low birth weight, premature labour and possibly abortions. Therefore prevention is of utmost importance.

- IMPREGNATED BEDNETS : all pregnant mothers
- MALARIA PROPHYLAXIS : primigravidas
all anaemic pregnant women

Treatment for Malaria if:

- fever above 37,5 degree celsius in the absence of other reasons
- headache, abdominal pain, vomiting
- Hb drop over 1g/dl in 2 successive antenatal visits up to 14 weeks.

CHAPTER TWO

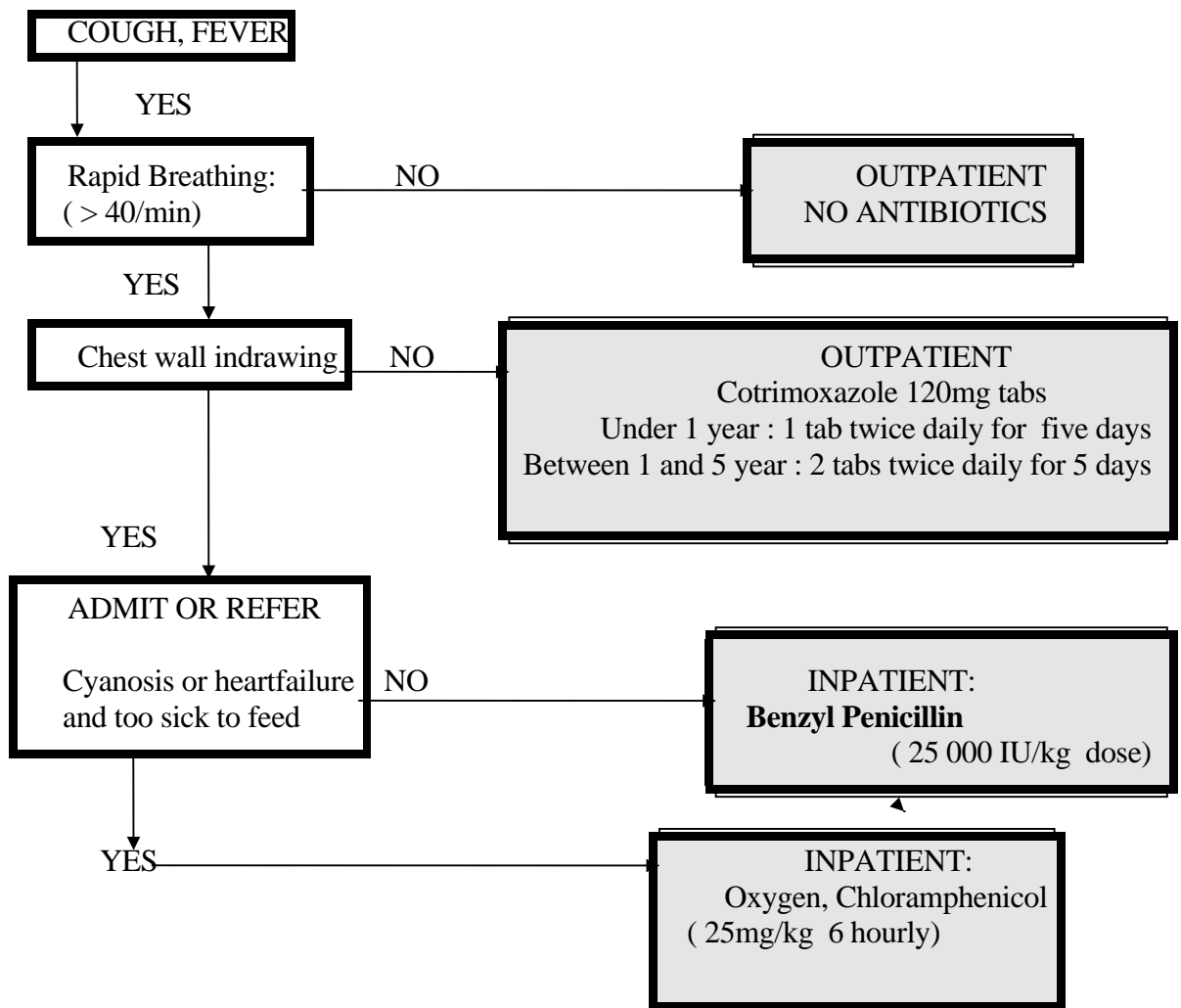
RESPIRATORY TRACT INFECTIONS

RESPIRATORY TRACT INFECTIONS

ACUTE RESPIRATORY TRACT INFECTION

Acute Respiratory Tract Infections (ARI) are a very important cause of morbidity and mortality in the Gambia, especially amongst children. The national ARI programme has adopted the WHO recommendation of improved case management at Primary Health Care (PHC) level.

The following flowchart gives the basis for the management of ARI :



I. LOWER RESPIRATORY TRACT INFECTION

A. LOWER RESPIRATORY TRACT INFECTION IN CHILDREN

CAUSES: Streptococcus pneumoniae, Haemophilus influenzae,
In Neonates: also: 1) Staph. aureus, 2) Strep. Pneumoniae, 3) Salmonella and other enteric infections

TREATMENT GUIDELINE ACCORDING TO SEVERITY:

Mild Pneumonia

Signs & Symptoms: Cough, fever, fast breathing (Respiratory rate over 40/minute) feeding and drinking well, no chest wall indrawings.

TREATMENT : OUTPATIENT

Cotrimoxazole 120 mg tabs :

Under 1 year : 1 tab twice daily for 5 days

Between 1 and 5years : 2 tabs twice daily for 5 days

6-12years: 480mg twice daily for 5 days

ALTERNATIVE: Amoxicillin : 10 - 20mg/kg/dose 8 hourly for 5 days

Moderate Pneumonia

Signs & Symptoms: High fever, cough, fast breathing (Respiratory Rate over 40/minute) and signs of respiratory distress: grunting or chest indrawing, flaring nostrils, not feeding or drinking well.

TREATMENT : ADMIT

Benzyl Penicillin: 50 000 U/kg dose 6 hourly,

Or for penicillin sensitive patients:

Chloramphenicol injection : 25mg/kg/6 hourly

Supportive Treatment: Fluids, Feeds and Antipyretics

Severe Pneumonia

Signs & symptoms: as above, with cyanosis and severe respiratory distress.

TREATMENT : Nasal Oxygen

Chloramphenicol inj 25mg/kg/ 6 hourly

I.V. fluids

Alternative: **Ampicillin** inj. 25mg /kg/dose 6 hourly

plus **Gentamicin** inj. 2.5mg/kg 8 hourly

If Staphylococcus is suspected : **Cloxacillin** 25mg/kg/dose 6 hourly

plus **Gentamicin** 2.5mg/kg/dose 8 hourly

NON- RESPONSIVE LOWER RESPIRATORY INFECTIONS

REFER ALL CASES

For severe pneumonia : failure to respond to Chloramphenicol or allergic to Penicillin, treat with : **Cefuroxime** 60mg/kg daily in 3-4 divided doses.

Check for EMPHYEMA: shallow breathing, dullness on one side of the chest wall, reduced breathsounds,

CAUSE: Staph aureus, Strep. Pneumoniae, Haemophilus influenzae

MANAGEMENT : Chest drainage, best after culture and sensitivity
Penicillin and Cloxacillin
or Ampicillin and Cloxacillin

LUNG ABSCESS: Staphylococcal, Streptococci, Fusibacterium sp. sometimes: Klebsiella, especially after measles.

MANAGEMENT: Admit and treat intravenously
Ampicillin and Cloxacillin and Metronidazole
or Cloxacillin and Gentamicin and Metronidazole
Postural drainage (physiotherapy)

ALWAYS CHECK FOR TUBERCULOSIS! Perform Mantoux test and Chest x-ray

KLEBSIELLA PNEUMONIA: Gentamicin / Ampicillin for 2 weeks
or Gentamicin / Cefazolin for 2 weeks

BRONCHIOLITIS:

CAUSE: Respiratory syncytial Virus, Parainfluenza virus, Adenovirus

Occurs in INFANCY, usually during the rainy season

Signs & Symptoms: Cough & wheeze in infants, chest indrawings.
Recurring episodes of wheezing suggest asthma. (usually above 1 year)

MANAGEMENT: According to severity; Symptomatic Treatment

MILD BRONCHIOLITIS: wheezing without fast breathing

Management: Treat as Upper Respiratory Tract Infection, if older than 12 months:
Salbutamol : 1mg three times daily,
continue breastfeeding, additional fluids.

MODERATE BRONCHIOLITIS: wheezing and fast breathing, no cyanosis, child is still able to drink

Management: Hospital admission
Nebulised with **Salbutamol**

Cotrimoxazole 120mg : Dose, as for mild pneumonia

Alternative: **Amoxicillin** 10-20mg/kg/dose 8 hourly for 5 days
Or **Erythromycin** 125-250mg 8 hourly for 5 days

Supportive treatment: fluids & feeds

SEVERE BRONCHIOLITIS: wheezes, fast breathing and cyanosis

Management: **IMMEDIATE HOSPITAL ADMISSION**
Oxygen 0,5 - 1L/min
Chloramphenicol 25mg/kg/dose 6 hourly
Or **Benzyl penicillin** 50,000U/kg dose 6 hourly
Plus **Gentamycin** 2.5mg/kg/dose 8 hourly

CAREFUL fluid management
In older children: nebulised Salbutamol

B. LOWER RESPIRATORY TRACT INFECTION IN ADULTS

CAUSE: Multiple organisms possible,
Community acquired: *Streptococcus pneumoniae*
Hospital acquired: *Pseudomonas*, *Enterobacter*, *Staphylococcus a.o.*

CLINICAL SIGNS: fever, sidepain, chestpain, cough and sometimes shortness of breath, Respiratory Rate above 30/minute.

MILD CASES:

TREATMENT :	
Cotrimoxazole 480mg tabs	: 2 tablets twice daily for 5-7 days
or Procaine Penicillin	: 5 Million units i.m. daily for 5 days
ALTERNATIVES:	
Ampicillin 500mg	4 times daily for 5 days
or Amoxycillin 250 - 500mg	three times daily for 5 days
or Erythromycin 500mg	four times daily for 5 days

SEVERE CASES: HOSPITAL ADMISSION

Benzyl Penicillin	: 2 Million Units 6 hourly for 5 days
Alternative :	Chloramphenicol injection : 25mg/kg/dose 6 hourly
Or	Cephalexin inj.
Change later to Ampicillin or Amoxycillin	

CHRONIC BRONCHITIS (ACUTE EXACERBATION) - OBSTRUCTIVE AIRWAYS DISEASE (COAD)

MANAGEMENT :	
Cotrimoxazole 480mg tabs	: 2 tablets twice daily for 7 days
ALTERNATIVE :	
Doxycycline 200mg	stat, then 100mg once daily for 7 days
Ampicillin 500mg	4 times daily for 5 to 7 days
Bronchodilators as necessary	

NB ! NON-RESPONSIVE BRONCHITIS : CHECK FOR Tuberculosis (TB) – Mantoux test, sputum, chest x-ray.

II. UPPER RESPIRATORY TRACT

A. UPPER RESPIRATORY TRACT INFECTION (URTI OR COMMON COLD)

Signs & symptoms: Fever, cough, running nose, No fast breathing

TREATMENT

ADULTS : **Acetylsalicylic Acid (Asprin)** 300mg tabs, 2 tabs as required (PRN)

CHILDREN : **Paracetamol** (10-20mg/kg/dose every 4 hours as required

NB: Not more than 4 doses per day.

Home Care : give extra fluids to drink, inform parent to come back if condition worsens or fast breathing occurs.

B. ACUTE OTITIS MEDIA

Very common in children;

early clinical signs: fever and crying, later pus discharging from the ear (less than 2 weeks).

In small children, the only sign might be a constantly crying baby with fever and refusing feeds.

TREATMENT :

Cotrimoxazole 120mg tabs : 1-2 tabs twice daily for 7 days

Alternative: **Ampicillin** or **Erythromycin**

C. CHRONIC OTITIS MEDIA

Pus discharging from the ear for more than 2 weeks. SEND FOR EAR SWAB, if possible

Management: Oral antibiotics not indicated

 EAR TOILET and keep ear dry

Gentamicin ear drops - to be used for not more than 5 days.

REFER TO SPECIALIST WHERE POSSIBLE

D. TONSILLITIS

CAUSE: Group A, C, G Streptococci

ANTIBIOTIC MANAGEMENT: DO NOT USE COTRIMOXAZOLE !

ADULTS: **Penicillin V** 250mg : 2 tabs four times daily for 5-7 days
or **Procaine Penicillin** 2 Million Units once daily for 5-7 days
or **Ampicillin** 250 - 500mg four times daily for 5-7 days

ALTERNATIVE: if allergic to penicillins
Erythromycin 500mg four times daily for 5-7 days

CHILDREN: **Penicillin V** : 12.5 – 25mg /kg 6 hourly for 5-7 days
or **Procaine Penicillin** 50,000-100,000 U /kg/day for 5 days
or **Ampicillin** 25mg/kg/day for 5 - 7 days

ALTERNATIVE: if allergic to penicillin
Erythromycin 40mg/kg/day in 4 divided doses

E. PERITONSILLAR ABSCESS

ANTIBIOTIC MANAGEMENT: **Procaine Penicillin** daily 2 MU daily for 5-7 days
and **Cloxacillin** 500mg 6 hourly for 7 days
or **Procaine Penicillin** 25,000 – 50,000 U/kg/day
and **Metronidazole** (30mg/kg/day in 3 divided doses)

REFER FOR SURGICAL DRAINAGE (where available!)

III. DENTAL ABSCESS

Management:

ADULTS: **Procaine Penicillin** 2 Million Units im for 5 days
or **Penicillin V** 250mg : 2 tablets four times daily for 5 days
Alternative, if allergic to penicillin : **Erythromycin** 500mg four times daily for 5 days

REFER FOR DENTAL DRAINAGE

CHILDREN: **Procaine Penicillin** 100,000 U/kg/day IM daily for 5 days

or **Penicillin V tabs**: Dose: 12.5 –25mg /kg 6 hourly for 5 days

REFER FOR DENTAL MANAGEMENT

IV. ASTHMA

Signs & Symptoms: Cough, wheeze and shortness of breath, usually history of repeated attacks.

MILD ASTHMA

Management

ADULTS: **Salbutamol** inhaler 2-3 puffs stat, or
Adrenaline 0.5ml s.c., followed by
Salbutamol 4mg tabs three times daily as outpatient

Treat any infection with **Amoxicillin 250mg**: 1 tablet three times daily for 5 days

Or **Erythromycin** 500mg 6 hourly for 5 days

Salbutamol inhaler home PRN

CHILDREN: **Salbutamol** tabs: 1- 5yrs: 1mg three times daily
Over 5 years : 2 mg three times daily
Salbutamol inhaler 1 puff stat

Treat any infection with **Cotrimoxazole**

SEVERE ASTHMA

Signs & Symptoms: Shortness of breath, severe respiratory distress, tachycardia, wheezes, sometimes, reduced breath sounds, inability to speak, cannot count up to five.

IN CHILDREN CAREFUL: Respiratory rate and chest indrawings are not a very reliable indicator for deciding about management. Check for cyanosis! Reduced breath sounds, apnoea and lethargy are WARNING SIGNS for a severe attack.

MANAGEMENT

- At major health centres or hospitals: admission
- At minor health facilities: Refer: Give stat doses before referral:

CHILDREN: **Ipratropium** 0.5 – 1ml diluted in 2ml Normal Saline

ADULTS: **Salbutamol** inhaler 2-3 puffs stat, nebulised Salbutamol (5-7 drops in 3ml saline)

Salbutamol inj. 0.5ml sc stat or **Adrenaline inj**

NB: Salbutamol injection is not recommended if patient have tachycardia.

IF NOT BETTER give:

ONLY IF NO PREVIOUS TREATMENT WITH AMINOPHYLLINE

AMINOPHYLLINE 250mg/10ml IV slowly over 20 minutes, observe pulse and respiratory rate,

THEN REFER QUICKLY

SEVERE ASTHMA IN CHILDREN

On admission:

1. Give **Oxygen** (0.51 L/ min)
2. Nebulise with **Salbutamol**: (3 drops in 2.5 ml saline) & **Ipratropium** (0.5-1ml in 2ml saline) to be given alternatively in desperate situation.

IF NOT BETTER AFTER 2 DOSES OF NEBULIZATION:

3. **Adrenaline** s.c. 0.01ml/kg (1:1000 dilution) Maximum dose: 0.3ml
4. **Hydrocortisone** 4mg /kg i.v. followed by oral **Prednisolone** 1-2mg/kg/day in 2 divided doses

IF NOT BETTER 6-12 HOURS AFTER ABOVE TREATMENT:

5. **Aminophylline**: make sure no oral aminophylline has been given recently, 5mg/kg given VERY SLOWLY over 20 minutes!!!

RAPID I.V. AMINOPHYLLINE CAN LEAD TO CARDIAC ARRYTHMIAS
HYPOTENSION AND DEATH. CHECK PULSE, BP, CONSTANTLY. NOT TO
BE GIVEN BY NURSING STAFF TO CHILDREN!

Continue doses: 0.9 mg/kg/hr in in i.v. Fluid if needed.

Treat any infection with **Amoxycillin**, alternative, **Erythromycin**

FLUIDS: Orally if possible,

If i.v. fluid is necessary: Dextrose / saline 70-100ml/kg in 24 hours,

Continue breastfeeding if possible or Expressed Breast milk in infants

Continue Treatment:

1. **Salbutamol** nebulising 4 hourly
2. **Salbutamol** tabs: for 1-5 yrs 1 mg three times daily
For over 5 yrs 2 mg three times daily
3. **Prednisolone**: if only stat dose of hydrocortisone was given and the child is better: Otherwise continue prednisolone, dosage to be gradually tapered off within 5 to 10 days. Only very few children will require long-term treatment.
4. Aminophylline usually not needed later.

HOSPITAL MANAGEMENT IN ADULTS

1. **Salbutamol** Nebuliser: 5 - 7 drops / 3ml saline & **Ipratropium**
2. **Salbutamol** injection s.c. 0.5ml or **Adrenaline** injection
3. Give **Oxygen** if cyanosed

IF NOT BETTER:

4. **Aminophylline**: Check whether the patient is on oral medication
If yes: give 250mg in 500ml Dextrose slowly over 12 hrs
If no: give loading dose of 250mg SLOWLY i.v. over 20 minutes and continue with **Aminophylline** in 500 ml Dextrose.
5. **Hydrocortisone**: 200mg i.v. 6 hourly

CONTINUE TREATMENT

NB: Pulse Oxymeter is needed.

1. **Salbutamol** nebuliser 4 hourly, later Salbutamol spray home
2. **Salbutamol** tabs 4mg three times daily
3. **Aminophylline** tabs 100mg three times daily
4. **Prednisolone** tabs in severe cases: 10mg three times daily for 2-3 days, then taper off gradually.

If a patient needs long-term Prednisolone, you must make sure:

Treat any underlying infection with **Amoxicillin** or **Erythromycin**

Thiabendazole tabs 25mg/kg three times daily for three days for strongyloides infestation.

Patients who are kept on Prednisolone need to be followed up closely. Usually even severe asthmatics can be taken off prednisolone in the dry season.

5. Where available, **Beclomethasone** spray can be used instead of systemic prednisolone.

V. MENINGITIS

Early presentation and introduction for early referral is necessary as rapid diagnosis and treatment are of paramount importance.

AETIOLOGY

- Haemophilus Influenzae
- S. Pneumococcus
- N. Meningococcus

Predisposing Factors

Usually non-pathogen, are usually acquired from the nasopharyngeal carriage, also associated with otitis media. Uncommonly, compound skull fracture, orbital/facial cellulitis, neural tube defects, cyanotic heart disease, infected VP shunts, immune deficiency.

CLINICAL FEATURES

1. Neonate - No Specific signs, may have fever, pallor, vomiting, lethargy, apnoea, poor feeding, bulging fontanel and convulsions.
2. Infants – headache, neck stiffness, photophobia, pallor, malaise, fever, lethargic
3. Older children & Adults - variable signs – headache, neck stiffness, photophobia, fever, irritability, lethargy, purpuric rash (invariably meningococcus), convulsions

Examination Signs

- Neck stiffness
- In children, Budzinski and Kerning sign
- Bulging fontanel

A) Diagnosis

- Lumbar Picture CSF, Characteristic
- Bacterial White cells increase
- Lymphocytes Increase +
- Neutrophils Increase +++
- Protein Increase
- Glucose Decrease
- Chloride normal (Reduced TB)

B) Viral

- White cell
- Lymphocytes 2 to 3 +
- Neutrophils normal to +
- Protein normal
- Glucose normal
- Chloride normal

ALWAYS SUSPECT MENINGITIS IN AN UNWELL CHILD, ESPECIALLY IN NEONATES AND INFANTS. DON'T ALWAYS RELY ON CSF COLOUR AND TURBIDITY.

C) Full Blood Count and Blood Culture.

Lumbar puncture (LP) is the only method to diagnose Meningitis. Resources to carry out too many cases are limited. Latex ANALYSIS, a CIE (variable reliability) is not a substitute for LP)

DIFFERENTIAL DIAGNOSIS

- Cerebral Malaria
- Encephalitis
- Septicaemia
- Febrile convulsions
- Intracranial haemorrhage in neonates.

TREATMENT

1.ABO

CHILDREN LESS THAN 2 MONTHS OF AGE:

Cefotaxime 50mg/kg 6 hourly i.v. plus

Ampicillin 50mg/kg 4-6 hourly i.v.

Alternative **Ceftriaxone** 100mg/kg one daily i.v. / i.m.

CONTINUE TREATMENT FOR 3 WEEKS

CHILDREN OVER 2 MONTHS OF AGE

Benzyl Penicillin 100mg/kg 6 hourly daily plus

Chloramphenicol (soluble) 40mg/kg loading dose

Continue until culture result is known, after which a single drug therapy with

Chloramphenicol, Benzyl Penicillin or **Ampicillin**

DURING OUT BREAKS USE LONG ACTING CHLORAMPHENICOL

IN OIL 100MG/KG SINGLE DOSE

In case of chloramphenicol resistance, use **Cefotaxime** 50mg/kg 6 hourly or **Ceftriaxone** 100mg i.m. / i.v once daily.

DURATION OF TREATMENT

For influenza: duration of treatment is ten days. Change to oral as soon as the child is well with no diarrhoea and vomiting.

For Pneumococcus: **Benzyl Penicillin** i.v for 10 - 14 days.

For Neissera Meningitis: 7 -10 days

MENINGITIS IN ADULTS

1. Pneumococcus
2. Neissera Meningococcus
3. Hemophilus Influenzae

TREATMENT FOR ADULTS

<p>Benzyl Penicillin 2MU6 hourly daily and Chlopramphenicol 1g 6 hourly daily Until culture and sensitivity test results is known, then use one drug for 10-14 days, and shift to oral medication when no vomiting.</p>

FLUIDS

Note: If B/P is well maintain there is need for Iv fluids. Give - 30ml/kg/day whenever the child is unable to drink. IV fluids should be regarded as a dangerous drug in Meningitis because of the risk of cerebral Oedema and Siadh (Syndrome of Inappropriate Antidiuretic Hormone Secretion)

In Hospital: Monitor serum creatinine and Urea

Provide early warning sign of dehydration.

Monitor Sodium and Potassium warning.

ACUTE COMPLICATIONS

1. CONVULSIONS

Treat aggressively with **Diazepam**, then **Phenobarbitone** loading dose 15mg then 5mg daily (in neonates 20-30mg/kg as loading dose with maintenance dose of 4 - 5mg).

2. SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE SECRETION (SIADH)

Presumption evidence, low serum sodium (Less 135 mmol/L), weight gain, Oliguria. Treatment - discontinue all fluid input. Once urine flow is established, restrict Urine input strictly to Urine output

3. RAISED INTRACRANIAL PRESSURE

Restrict fluid plus maintain cerebral perfusion and elevate head of bed to 20. Mannitol 0.25gram/kg. Strict control of seizures. Keep head in midline.

4. SUB-DURAL COLLECTION

May give new focal neurological signs or urea plan halt in clinical improvement. Treatment: large collection – Subdural taps or burrholes, small/or asymptomatic. Require no treatment.

PROGNOSIS AND LONG TERM SEQUELAE

Case fatality Rate is more than 40% for neonates, 5 - 10% for older children. Sequelae occurs in more than 25% of survivors, and includes:

- a) Behaviour problem
- b) Learning difficulties
- c) Mental retardation
- d) Motor abnormalities
- e) Hearing Impairment (Survivors should have hearing tested)
- f) Language difficulties
- g) Seizures

CHAPTER THREE

GASTRO-INTESTINAL CONDITIONS

GASTRO-INTESTINAL CONDITIONS

1. HELMINTH INFECTIONS

A. INTESTINAL HELMINTHS

Common: *Ascaris lumbricoides*
Trichuris trichuria
Enterobius Vermicularis
Necator americanus (Hookworm)
Strongyloides stercoralis

Diagnosis: Stool microscopy
Presence of worms in stool, vomiting or coughed out.

ASCARIS : Very common, especially in children;
can cause intestinal obstruction in rare cases
worms can be vomited out

TREATMENT

Levamisole 40mg tabs
Adults : 3 tabs single dose (also in pregnancy)
Children: 2,5mg/kg

or

Mebendazole 100mg tabs -
1 tab twice daily for three days

NB! Not for under two years or in pregnancy

HOOKWORM: common, causes anaemia

TREATMENT

Mebendazole 500mg tabs : one tablet twice daily for three days
or **Albendazole** 400mg statdose
or **Levamisole** 3 tabs statdose

TREATMENT FOR ANAEMIA: Ferrous (iron) sulphate tabs : see chapter 13 on anaemia.

TRICHURIS :

TREATMENT : **Mebendazole** as above
Repeat if necessary after 1-2 weeks
or **Albendazole** 400mg stat

ENTEROBIOS VERICULARIS: contagious!

Main symptom - Perianal itching

NB. ADVISE PATIENT TO OBSERVE STRICT HYGIENIC CONDITIONS

TREATMENT : TREAT THE WHOLE FAMILY

Mebendazole 500mg single dose
or **Pyrantel pamoate** 11mg/kg single dose

REPEAT TREATMENT AFTER TWO WEEKS

STRONGYLOIDES STERCORALIS

Common in immunocompromised patients: e.g. children with malnutrition, AIDS patients

NEVER GIVE STEROIDS IN PATIENTS WITH STRONGYLOIDES

TREATMENT :

Thiabendazole 25mg/kg twice daily for 2 days
or **Albendazole** 400mg once daily for 3 days
or **Ivermectine** 200mg/kg/day for 2 days

B. CUTANEOUS LARVA MIGRANS

TREATMENT :

Thiabendazole 25mg/kg twice daily for 5 days
Or **Ivermectine** 12mg statdose

OR LOCAL TREATMENT WITH : Ethyl chloride spray or icing of the lesions (only the edge), Thiabendazole applied locally

C. TAPEWORM INFECTIONS

Common : Taenia saginata, Hymenolepis nana
Uncommon: Taenia solium

TREATMENT : Niclosamide

Children under 2 years: 0,5g stat
Children 2 - 6 years : 1,0g stat
Adults: 2,0g stat (in 2 doses separated by 1 hr)

D. SCHISTOSOMIASIS

1. Schistosoma haemtobium: common

Main symptom: Haematuria , usually towards the end of urination.

TREATMENT

Metrifonate 10mg/kg on 3 occasions at intervals of 2-4 weeks

or **Praziquantel** 40mg/kg as single dose
May need to be repeated after two weeks

2. Schistosoma Mansoni: rare

Symptom: no early symptoms

can cause diarrhoea maybe with blood

Longterm effect: Symmers pipestem fibrosis of the liver (peri-portal).

TREATMENT: **Praziquantel** 30mg/kg (2-3 doses might be necessary.)

3. IMPORTANT COMPLICATION OF SCHISTOSOMA INFECTION

Ectopic worms may infiltrate the paravertebral plexus, leading to spinal cord compression or cauda equina lesion, which can cause paralysis. If treated promptly, full functional recovery is possible. Association with squamous carcinoma of the urinary bladder, Hepatic periportal Fibrosis.

II. DIARRHOEAL DISEASES

A. GASTROENTERITIS

Diarrhoea is defined as the passage of loose or watery stools, usually at least three times in a 24-hour period (WHO). However, it is the consistency of the stools rather than the frequency that is most important.

The danger of diarrhoea is the loss of water and electrolytes which can be fatal, especially in small children.

REHYDRATION : THE CORRECT REPLACEMENT OF FLUIDS AND ELECTROLYTES IS OF UTMOST IMPORTANCE FOR THE SUCCESSFUL TREATMENT OF DIARRHOEAL DISEASES.

TREATMENT :

Treatment is according to degree of dehydration as defined in the WHO manual for the treatment of diarrhoea. The method of assessment and type of treatment is indicated below.

A. ASSESSMENT OF PATIENT FOR DEHYDRATION

ASSESSMENT	DEGREE OF DEHYDRATION		
	A	B	C
1. LOOK AT: CONDITION	Well, Alert	Restless, irritable*	Lethargic or Unconscious, floppy*
EYES	Normal	Sunken	Very sunken & dry
TEARS	Present	Absent	Absent
MOUTH & TONGUE	Moist	Dry	Very dry
THIRST	Drinks normally Not thirsty	Thirsty, drinks eagerly*	Drinks poorly or not able to drink*
2. FEEL: SKIN PINCH	Goes back quickly	Goes back slowly*	Goes back very Slowly*
3. DECIDE	The patient has NO SIGNS OF DEHYDRATION	If the patient has two or more signs including at least one sign* , THERE IS SOME DEHYDRATION	If the patient has two or more signs, including at least one sign* , there is SEVERE DEHYDRATION
4.TREAT	USE TREATMENT PLAN A	Weigh the patient, if possible and USE TREATMENT PLAN B	Weigh the patient and USE TREATMENT PLAN C

TREATMENT

Maintain the principles of infection control in the nursing care of the patient. Treat according to the above classification of Diarrhoeal Diseases based on degree of dehydration :

1. No dehydration – follow treatment Plan A
2. Some dehydration – follow treatment Plan B
3. Severe Dehydration - follow treatment Plan C

TREATMENT PLAN A TO TREAT DIARRHOEA AT HOME

USE THIS PLAN TO TEACH THE MOTHER TO:

- Continue to treat at home her child's current episode of diarrhoea.
- Give early treatment for future episodes of diarrhoea.

EXPLAIN THE THREE RULES FOR TREATING DIARRHOEA AT HOME:

1. GIVE THE CHILD MORE FLUIDS THAN USUAL TO PREVENT DEHYDRATION:

- Use recommended home fluids. These include: ORS solution, food-based fluids (such as soup, rice water, and yoghurt drinks) and plain water. Use ORS solution for children described in the box below. (Note: if the child is under 6 months old and is not yet taking solid food, given ORS solution or water rather than a food-based fluid).
- Give as much as of these fluids as the child will take. Use the amounts shown below for ORS as a guide.
- Continue giving these fluids until the diarrhoea stops.

2. GIVE THE CHILD PLENTY OF FOOD TO PREVENT MALNUTRITION:

- Continue to breast-feed frequently.
- If the child is not breast-fed, give the usual milk.
- If the child is 6 months or older or already taking solid food:
 - Also give cereal or another starch food mixed, if possible, with pulses, vegetables, and meat or fish. Add 1 or 2 teaspoonfuls of vegetable oil to each serving.
 - Give fresh fruit juice or mashed banana or provide potassium.
 - Give freshly prepared foods, Cook and mash or grind food well.
 - Encourage the child to eat; offer food at least 6 times a day.
 - Give the same foods after diarrhoea stops, and give an extra meal each day for two weeks.

3. TAKE THE CHILD TO THE HEALTH WORKER IF THE CHILD DOES NOT GET BETTER IN 3 DAYS OR DEVELOPS ANY OF THE FOLLOWING:

- | | |
|----------------------|-----------------------------|
| * Many watery stools | * Eating or drinking poorly |
| * Repeated vomiting | * Fever |
| * Marked thirst | * Blood in the stool |

CHILDREN SHOULD BE GIVEN OR S SOLUTION AT HOME, IF

- *They have been on Treatment Plan B or C*
- *They cannot return to the health worker if the diarrhoea gets worse.*
- *It is national policy to give ORS to all children who see a health worker for diarrhoea.*

IF THE CHILD WILL BE GIVEN ORS SOLUTION AT HOME, SHOW THE MOTHER HOW MUCH ORS TO GIVE AFTER EACH LOOSE STOOL AND GIVE HER ENOUGH PACKETS FOR 2 DAYS:

Age	Amount of ORS to give after each loose stool	Amount of ORS to provide for use at home
Less than 24 months	50-100 ml	500ml/day
2 up to 10 years	100-200ml	1000ml/day
10 years or more	As much as wanted	2000ml/day

- Describe and show the amounts to be given after each stool using a local measure.

SHOW THE MOTHER HOW TO MIX ORS.

SHOW HER HOW TO GIVE ORS:

- Give a teaspoonful every 1-2 minute for a child under 2 years.
- Give frequent sips from a cup for an older child.
- If the child vomits, wait 10 minutes. Then give the solution more slowly (for example, a spoonful every 2-3 minutes).
- If diarrhoea continues after the ORS packets are used up, tell the mother to give other fluids as described in the first rule above or return for more ORS.

TREATMENT PLAN B TO TREAT DEHYDRATION

APPROXIMATE AMOUNT OF ORS SOLUTION TO GIVE IN THE FIRST 4 HOURS:

Age*	Less than 4 months	4 –11 months	12 –23 months	2 - 4 years	5 14 years	15 years or older
Weight:	Less than 5 kg	5 - 7.9 kg	8 - 10.9 kg	11 - 15.9 kg	16 - 29.9 kg	30 kg or more
In ml	200-400	400-600	600-800	800-1200	1200-2200	2200-4000
In local measure						

- Use the patient's age only when you do not know the weight. The approximate amount of ORS required (in ml) can also be calculated by multiplying the patient's weight (in kg) times 75.
- If the child wants more ORS than shown, give more.
- Encourage the mother to continue breast-feeding.
- For infants under 6 months who are not breast-fed also give 100-200 ml clean water during this period.

OBSERVE THE CHILD CAREFULLY AND HELP THE MOTHER GIVE ORS SOLUTION:

- Show her how much solution to give her child.
- Show her how to give it - a teaspoonful every 1-2 minute for a child under 2 years, frequent sips from a cup for an older child.
- If the child vomits, wait 10 minutes and then continue giving ORS, but more slowly, for example, a spoonful every 2-3 minutes.
- If the child's eyelids become puffy, stop ORS and give plain water or breast milk.
- Give ORS according to plan A when the puffiness is gone.

AFTER 4 HOURS, REASSESS THE CHILD USING THE ASSESSMENT CHART. THEN SELECT PLAN A, B, OR TO CONTINUE TREATMENT.

- If there are no signs of dehydration, shift to Plan A. when dehydration has been corrected, the child usually passes urine and may also be tired and fall asleep.
- If signs indicating some dehydration are still present, repeat Plan B, but start to offer food, milk and juice as described in Plan A.
- If signs indicating severe dehydration have appeared, shift to Plan C

IF THE MOTHER MUST LEAVE BEFORE COMPLETING TREATMENT PLAN B:

- Show her how much ORS to give to finish the 4-hour treatment at home.
- Give her enough ORS packets to complete rehydration, and for 2 more days as shown in Plan A.
- Show her how to prepare ORS solution.
- Explain to her the three rules in plan A for treating her child at home:
 - To give ORS or other fluids until diarrhoea stops
 - To feed the child
 - To bring the child back to the health worker, if necessary.

**USE OF DRUGS
FOR CHILDREN WITH DIARRHOEA**

- ANTIBIOTICS should ONLY be used for dysentery and suspected cholera. Otherwise, they are ineffective and should NOT be given.
- ANTIPARASITIC drugs should ONLY be used for:
 - Amoebiasis after antibiotic treatment of bloody diarrhoea for shigella has failed or trophozoites of *E. histolytica* containing red blood cells are seen in the faeces.
 - Giardiasis, when diarrhoea has lasted at least 14 days and cysts or trophozoites of *Giardia* are seen in faeces or small bowel fluid.
 - ANTIDARRHOEAL DRUGS and ANTIEMETICS should NEVER be used. None has proven practical value. Some are dangerous

**TREATMENT PLAN C
TO TREAT
SEVERE DEHYDRATION QUICKLY**

FOLLOW THE ARROWS. IF ANSWER IS "YES", GO ACROSS IF "NO" GO DOWN

START HERE

Can you give
give Intravenous (iv)
Fluids immediately

YES

Start iv immediately. If the patient can drink, give ORS by mouth while the drip is set up. 100ml/kg Ringer's Lactate Solution (or, if not Available, normal saline), divided as follows:

NO

Age	First give 30 ml/kg in	Then give 70 ml/kg in
Infants (Under 12 months)	1 hour*	5 hours
Older	30 minutes*	2 1/2 hours

- Repeat once if radial pulse is still very weak or not detectable.

* Reassess the patient every 1-2 hours, If hydration is not improving, give the iv drip more rapidly.

* Also give ORS (about 5 ml/kg/hour) as soon as the patient can drink usually after 3-4 hours (infants) or 1-2 hours (older patients).

* After 6 hours (infants) or 3 hours (older patients), evaluate the patient using the assessment chart.

Then choose the appropriate Plan (A, B or C) to Continue treatment.

Is iv treatment available
Nearby, (within 30 minutes)?

YES

- * Send the patient immediately for iv treatment.
- * If patient can drink, provide the mother with ORS and show her how to give it during the trip.

NO

Are you trained to use a
Naso-gastric (NG) tube for
Rehydration?

YES

* Start rehydrtion by tube with ORS: give 20 ml/kg/hour for 6 hours (total of 120ml/kg).

* Reassess the patient every 1-2 hours
- If there is repeated vomiting or increasing abdominal distension, give the fluid more slowly.

NO

- If hydration is not improving after 3 hours, send the patient for IV therapy.

* After 6 hours, reassess the patient and choose the appropriate Treatment Plan.

Can the patient drink ?

YES

* Start rehydration by mouth with ORS, Giving 20 ml/kg/hour for 6 hours (total of 120ml/kg).

NO

NO

- * Reassess the patient every 1-2 hours
 - If there is repeated vomiting, give the fluid more slowly.
 - If hydration is not improving after 3 hours, send the patient for iv therapy.
- * After 6 hours, reassess the patient and choose the appropriate Treatment Plan.

URGENT: Send the Patient for iv or NG Treatment.

NOTES:

- If possible, observe the patient at least 6 hours after rehydration
To be sure the mother can maintain hydration giving ORS solution by mouth.
- If the patient is above 2 years and there is cholera in your area, give an appropriate
- Oral antibiotic after the patient is alert.

B. DYSENTERY

Signs & Symptoms: Fever & diarrhoea with blood and mucus in stools

CAUSE: Shigella infection

TREATMENT : MILD

ADULTS: Oral Rehydration Salt (ORS) as per type of dehydration
Plus **Cotrimoxazole** tabs : 2 tabs twice daily for 5 days, if very ill
or **Ampicillin** caps : 250-500mg 4 times daily for 5 days

CHILDREN: ORS as per type of dehydration PLUS
Cotrimoxazole 120mg tabs : up to 1 year 1 tablet,
1-5years 2 tabs
6-12 years - 480mg twice daily.
if children are febrile or malnourished.

TREATMENT : MODERATE TO SEVERE

ADMIT

IV or oral **Ampicillin** 500mg 4 times daily
or **Nalidixic acid:** Children 15mg/kg 4 times daily for 5 days
Adults: 1g 4 times daily for 5 days
Hyoscine tablets 10mg three times daily for 1-3 days
or **Hyoscine** im 20mg twice daily for 1-3 days
Rehydrate with IV fluids

Dysentery

Cause : Entamoebic histolytica

This is very rare in The Gambia

Afebrile and usually painless bloody stools; often longstanding.

Diagnosis: Stool test (fresh)

MILD : Treat with **Metronidazole** 800mg orally 3 times daily for 5 days

MODERATE / SEVERE : ADMIT

Treat with IV **Metronidazole** 500mg three times daily for 5-7 days

Hyoscine as above

Rehydrate

NB! It is difficult to differentiate between the two aetiological agents (amoebia / shigella) without access to a lab. Treat for both in cases of severe bloody diarrhoea if no lab facility available.

C. PERSISTENT DIARRHOEA

Signs & Symptoms: diarrhoea watery, with or without blood, lasting more than 14 days

Management:

ADULTS: refer for investigations
stool microscopy and culture

Exclude HIV and other immunosuppressive conditions, if weight loss and fever

CHILDREN: usually malnourished children.

Refer to a Major Health Centre or hospital for management.

D. TYPHOID FEVER

Cause: *Salmonella typhi* & *Paratyphi*

Signs & Symptoms

Fever of unknown origin - usually continuous, abdominal discomfort, at the beginning
- constipation, later - diarrhoea. Often, patient is lethargic or with mental confusion.

TREATMENT

ADULTS: Chloramphenicol 500mg four times daily for 14 days

and 2nd generation Cephalosporin

or Ciprofloxacin 500mg twice daily for 10 days

CHILDREN: Chloramphenicol 100mg/kg/day in four doses for 14 days

MAJOR COMPLICATIONS:

HEMORRHAGE: Antibiotics, possible blood transfusion

PERFORATION: Antibiotics: Chloramphenicol and gentamycin
Surgical intervention can be of advantage

E. CHOLERA

CHOLERA should be suspected when:

- a patient older than 5 years develops severe dehydration from acute watery diarrhoea.

- or any patient above 2 years with acute watery diarrhoea in an area where there is an outbreak of cholera.

Laboratory diagnosis should be made, where available.

STEPS IN THE MANAGEMENT OF CHOLERA

THE BASIC PRINCIPLES OF INFECTION CONTROL, INCLUDING BARRIER NURSING MUST BE ADHERED TO AT ALL TIMES IN THE MANAGEMENT OF PATIENTS SUSPECTED OF CHOLERA

1. ASSESS FOR DEHYDRATION: No - Some - Severe (see section on diarrhoea)
2. REHYDRATE the patient and monitor frequently:

A. SEVERE DEHYDRATION

1. Give **IV Fluids: Sodium Lactate** (Hartmanns Solution), or **Normal Saline**: 30ml/kg as rapidly as possible, (including setting multiple I.V. lines) within 30 minutes, then 70ml/kg within 2 - 3 hours.
2. Give **ORS** (5ml/kg/hr) as soon as the patient can drink in addition to the i.v. fluids. In children, use N/G tube to rehydrate.

REASSESS THE PATIENT AFTER 3 HOURS;

- if there are still signs of severe dehydration, repeat the i.v. therapy already given.
- monitor urine output ; continue i.v. fluid replacement until good urine output is achieved and vomiting has subsided.
- if pulse is strong, BP normal and kidney function established, continue as under moderate dehydration.

B. SOME DEHYDRATION

1. Administer ORS solution and observe closely: The amount of ORS required varies greatly from patient to patient dependant on fluid losses.

Average need in the first 24 hours: at least 200ml/kg up to 350ml/kg.

2. Monitor patient frequently to ensure the ORS is taken satisfactorily and to detect patients with profuse on-going diarrhoea who will require i.v. solutions.

3. MAINTAIN HYDRATION

After a patient has been fully rehydrated, on-going fluid losses need to be replaced by ORS solution. As a guide, give patient:

Under 24 months:	100ml ORS/ loose stool
2 - 9 years:	200ml ORS / loose stool
10 years and more:	as much as required, 250 - 300ml ORS / loose stool

Patients, whose ongoing stool output is very large, may have difficulty in drinking the volume of ORS needed to maintain hydration. Vomiting may occur and abdominal distension. Stop ORS and give Sodium lactate (Hartmanns solution) i.v. 50ml/kg/3hrs. After this is done, usually oral rehydration can continue.

KEEP PATIENT UNDER OBSERVATION UNTIL DIARRHOEA HAS STOPPED OR IS INFREQUENT AND OF SMALL VOLUME.

4. GIVE ORAL ANTIBIOTIC WITH SEVERE DEHYDRATION

TREATMENT

ADULTS: **Doxycycline** 300mg stat

or **Tetracycline** 500mg four times daily for 3 days

or **Cotrimoxazole** 2 tabs twice daily for 3 days

in pregnancy : **Furazolidine** 100mg four times daily for 3 days

CHILDREN: **Cotrimoxazole** 1/4 to 2 tabs twice daily for three days

5. FEED THE PATIENT

Resume feeding with a normal diet when vomiting has stopped.

Continue breastfeeding in infants and young children.

III. OTHER GASTRO-INTESTINAL DISORDERS

A. PEPTIC ULCER

Signs & symptoms: Epigastric pain and tenderness with “positive finger point test” sign. There may be vomiting and or haematemesis.

MANAGEMENT

Diet; small frequent meal; no coffee, tea, fizzy drinks or alcohol

Stop smoking

Avoid acetylsalicylic acid and related drugs

Avoid pepper and spicy foods

Avoid citrus fruits, e.g. lime

TREATMENT

- Antacid: **Magnesium trisilicate** or **Aluminium hydroxide**

Chew 2 tablets three or four times daily for 2 weeks

REFER: if pain persists or black stools

- If not better: Treat as helicobacter pylori, a very common ulcer mimicking condition with: **Ampicillin** 500mg 4 times daily and **Metronidazole** three times daily for a total of 4 weeks
- For endoscopy or radiologically proven ulcers: treat with Ranitidine or Cimetidine or Omeprazole by specialist. Add treatment for helicobacter for resistant cases, as the two may co-exist.

NB! All radiological proven gastric ulcers must have endoscopy and biopsy taken to exclude Carcinoma of stomach.

VOMITING

- Try and make a diagnosis
- Replace fluids loss orally or IV
- Treat with **Chlopromazine** 25mg stat IM or **Promethazine**

B. REFLUX OESOPHAGITIS

A high index of suspicion is required. It is most frequent in middle-aged and elderly women. Pregnancy and obesity resulting in increased intra-abdominal pressure promotes their development in earlier years.

Signs & symptoms: Heartburn is characteristics. This is a deeply placed “burning ” sensation brought on by bending, stooping or by exertion of lifting and straining.

MANAGEMENT

- Advise weight loss if obese
- Eat small, frequent and regular meals and avoid fats
- Stop smoking
- Avoid stooping down from the waist
- Avoid tight clothes
- Elevate head of bed

Magnesium trisilicate or **Aluminium hydroxide tablets:** chew one and repeat PRN after meals

Metoclopramide tablets: 10mg three times daily

Seek specialist advice with regards to use of cimetidine, ranitidine or omeprazole

Surgery may be rarely required.

C. CONSTIPATION

Signs & symptoms: Hard, infrequent stools and difficulty passing them.

MANAGEMENT:

Advise to DRINK plenty, EAT lots of fruits and vegetables

If necessary, FOR ADULTS:

	Senna tabs	3 tabs at night
or	Bisacodyl tabs	2 tabs at night (in severe cases)
or	Liquid Paraffin	15ml at night, give 2 - 3 doses

AVOID LAXATIVES IN CHILDREN AND PREGNANT WOMEN

D. HAEMORRHOIDS

Signs & symptoms: Swelling and itching of anal tissues, sometimes bleeding

MANAGEMENT (localized treatment)

Antihemorrhoidal suppositories - insert rectally twice daily

ointment - use on rectal area

Advise as per management of constipation

COMPLICATED HAEMORRHOIDS

Signs & symptoms: Severe pains, bleedings, prolapse

Management: REFER FOR SURGICAL MANAGEMENT

E. ANAL FISSURE

Signs & Symptoms: Painful bowel movements, constricted sphincter.

Cause: Chronic constipation, very hard stools

MANAGEMENT

Paraffin ointment anally, also oral doses of Liquid Paraffin 15ml at night - give 2-3 doses.

Sitz bath at home twice daily in soap or salt water.

Advise patient to maintain hygiene and avoid constipation.

REFER FOR SURGICAL MANAGEMENT, IF NO IMPROVEMENT

F. RECTAL PROLAPSE

Signs & Symptoms: Rectum protruding from a child's anus

Common in children due to Trichuris infections

MANAGEMENT: Push prolapsed rectum back inside when the child is sleeping, (teach mother to do this). Advice parent to maintain hygiene

CHILDREN OVER 1 YEAR : **Levamisole** 2.5mg/kg/dose stat

CHILDREN OVER 2 YEARS : **Mebendazole** 100mg twice daily for 3 days

REFER FOR SURGICAL MANAGEMENT, IF PROLAPSE PERSISTS

G. HERNIA AND RELATED CONDITIONS

TYPES

MANAGEMENT

Inguinal

Refer for elective surgery

Umbilical (uncomplicated)

Refer for surgical surveillance

Hydrocele (scrotum)

Refer for elective surgery / surveillance
(not in infancy)

Obstructed

ADULTS: Analgesics (non-narcotic)

Reducible hernias - refer for elective surgery

Non-Reducible hernias - Refer immediately

IV. LIVER DISORDERS

A. ACUTE VIRAL HEPATITIS

Viral hepatitis is almost always caused by one or other of the hepatitis viruses. Type A and Type B are common in The Gambia. Type C virus may cause disease. All the known viruses give rise to illnesses, which are similar in clinical features.

Symptoms & signs

These include the usual manifestations of an acute infectious disease, and include chills, headache and weakness. Gastrointestinal symptoms may include anorexia, nausea, vomiting and diarrhoea. An upper abdominal pain over the liver may occur as the organ enlarges. The liver is usually tender and dark urine and yellow sclerae mark the onset of the disease.

Investigation

Liver function test shows elevated liver enzymes and an almost normal or slightly raised alkaline phosphatase. The prothrombin time is usually prolonged and returns to normal as the disease abates. Hepatitis B surface antigen (HBs Ag) may be screened for where available.

Treatment

There is no specific therapy. Bed rest is advised when symptoms are marked and a good general diet containing some 3000 K cal daily is desirable. Allow the patient to eat what they enjoy and encourage liberal fruit and glucose drinks.

B. CHRONIC LIVER DISEASE

There are two main forms of chronic liver disease: 1. Chronic hepatitis, 2. Cirrhosis.

In The Gambia, both types are mainly due to the Type B hepatitis virus. Drugs, alcohol and other causes are rare. In chronic hepatitis, there are signs of other systemic involvement such as fever; joint pains, nosebleeds and amenorrhoea. With the development of cirrhosis, ascites, encephalopathy (confusion) and enlargement of the spleen occur.

Treatment

Steroids may be useful in chronic hepatitis (refer patients to physician/gastroenterologist). Diuretics are useful in cases of cirrhosis. This reduces ascites and oedema. Diuretics must be introduced gradually starting with frusemide in low doses. Add spironolactone if high dose loop diuretics fail to induce diuresis.

C. HEPATOCELLULAR CARCINOMA (Primary Liver Cancer)

This is by far the commonest cancer in The Gambia and in most cases patients are carriers of the hepatitis B virus.

Symptoms & signs

Patients present with upper abdominal pain, weakness, loss of appetite, fever, firm rock-hard right upper abdominal mass with or without ascites. There may be an audible bruit over the liver on auscultation.

Investigations

A positive α -fetoprotein in the presence of the above symptoms and signs is diagnostic. Ultrasound and liver biopsy are useful diagnostic tools.

Treatment

Symptomatic pain relief and diuretic therapy when indicated is the cornerstone of management for these patients.

D. LIVER FAILURE

- Treat infections if proven or suspected.
- Bed rest - admit.
- Diet. Good diet containing some 3000 K cal daily is desirable consisting mainly of glucose, and less of protein.
- Stop Diuretics.
- Up to 3 litres Dextrose 10-20% orally, via nasogastric tube or IV. Avoid Normal saline.
- Enema is recommended twice daily.
- Magnesium sulphate 10 ml orally three times daily.
- IM Vitamin K 10 mg daily or fresh frozen plasma.
- IM or IV Diazepam for confusion.
- Refer to physician/gastro-enterologist or hepatologist as soon as possible.

CHAPTER FOUR

CARDIOVASCULAR DISEASES

CARDIOVASCULAR DISEASES

I. HYPERTENSION

To diagnose Hypertension, the following conditions must be present:

- 1) Two or three readings are taken on separate occasion
- 2) The patient must be in a relaxed state
- 3) The cuff around the arm should be at the level of the heart
- 4) The cuff should be of sufficient size and the bladder applied on the medial aspect of the arm
- 5) The diastolic pressure is taken at the disappearance of the sound.

Definitions

Mild Hypertension:	Diastolic pressure 90 - 104 mm/Hg.
Moderate Hypertension:	Diastolic pressure 105 - 114 mm/Hg
Severe Hypertension:	Diastolic pressure 115 - 130 mm/Hg
Malignant Hypertension:	Diastolic >130 mm/Hg ± Papilloedema & other organ damages

Management

- 1) Encourage weight loss if overweight - one kg per week is a reasonable target
- 2) Source physical exercise - e.g. one-hour walk 2-3 times weekly.
- 3) Stop smoking if a smoker
- 4) Reduce or stop alcohol intake
- 5) Avoid adding extra salt to food or salted products.

TREATMENT:

Mild Hypertension

Thiazide diuretic:

Bendrofluazide tabs 1.25-5mg daily.

Moderate Hypertension/ Severe Hypertension

TREATMENT

Thiazide diuretics: **Bendrofluazide** 1.25-5mg daily
Or **Hydrochlorthiazide** 12.5 – 25mg daily

*If Diastolic pressure > 95mm/Hg after four weeks treatment:

Add Betablocker: **Propranolol** tabs - 40mg twice daily, increase to 160 - 480mg / day in divided dose. AVOID IN ASTHMATICS

or

Methyldopa tabs - 250mg 2- 3 times daily, gradually increase to 2-3g daily in divided doses

Hydralazine:

Reserved for patient, whose BP is not controlled with Thiazide & Betablocker or Thiazide & Methyldopa or for patients who have contra-indication to the use of these drugs. It is especially useful in Hypertension with renal involvement (its vasodilator properties increases renal vascular perfusion).

Dose: **Hydralazine:** 25 mg tabs twice daily, increase to 100 mg daily in divided dose.
I.V Hydralazine useful in hypertensive crisis.

Nifedipine

Reserve for patients who cannot use Thiazide & Betablockers

Dose: **Nifedipine** 10mg tabs three times daily.
I.V Nifedipine useful in hypertensive crisis

REFER: Diastolic > 115mmHg, associated medical condition e.g. diabetes

Malignant or Accelerated Hypertension

Diastolic pressure > 130 mm/Hg

1. Admit into Hospital
2. Complete Bed rest
3. Treatment by mouth is quite adequate in Hospital.

Use Thiazide and Betablocker or Nifedipine or Hydralazine in doses as a severe Hypertension.

Note: Rapid falls on blood pressure can cause cerebral infarction and blindness, reduced renal perfusion causing deterioration in renal function and Myocardial Infarction.

II. HEART FAILURE

Refer

Exclude anaemia

Heart failure exists when there is fluid retention due to inadequacy of cardiac output to meet the demand of the body.

Clinical features

- (1) Low cardiac output causing fatigue cyanosis
- (2) Fluid retention causing dyspnoea dependant cyanosis
- (3) Increased myocardial stiffness leading to raised jugular venous pulse

TREATMENT

- (1) Bed rest
- (2) Diuretics: The mainstay of Congestive Cardiac Failure (CCF) management.
 - (a) **Thiazide** Diuretic: see above
 - (b) **Loop** Diuretics: more potent than thiazide, used more in severe degrees of CCF.

Frusemide: available both in tablet or injection form.
Dosage: 20 - 80mg once or twice daily

- (c) **Spironolactone:** act as Aldosterone antagonist; Useful as an adjunct to thiazide or frusemide therapy and also for its potassium retaining diuretic effect, to minimize the risk of Hypokalaemia.

Spironolactone tabs
Dosage: 25 - 50mg three times daily.

Digoxin - Use in Major Health centres and Hospitals only

Uses: Congestive cardiac failure
Atrial fibrillation
Super ventricular Tachycardia

Digoxin
Dosage: Digitalising dose 1mg stat, followed 0.5mg for 2 days, then 0.25mg maintenance dose.
or 0.25mg twice daily for 2 days
NB: IV Digoxin offers no advantage over oral digoxin
Do not give if pulse is <60/m

Overdosage: Stop treatment, Refer

Left Ventricular Failure

Presents as dyspnoea on exertion to paroxysmal
Nocturnal dyspnoea leading to frank pulmonary oedema

INITIATE TREATMENT AND REFER

TREATMENT

1. BEDREST;
2. After ruling out the presence of obstructive airway diseases
3. MORPHINE I.V. is the first line of treatment. Morphine relieves dyspnoea, reduces anxiety and helps sluff fluid from the lungs to systemic circulation.
4. OXYGEN Especially in the presence of central cyanosis
5. INTRAVENOUS FRUSEMIDE
6. BETA ADRENERGIC drug - Can be used in the presence of tachycardia associated with early atrial fibrillation (see notes on betablockers).
7. ACE Inhibitor – **Captopril** 25mg tablets

III. ANGINA PECTORIS

Tight or gripping chest pain that is precipitated by exercise or emotion and radiates to the throat, left arm and sometimes back. If the precipating cause is exercise, it causes the patient to stop and the pain is relieved promptly by rest.

Management

- (1) Change of lifestyle as in Hypertension; e.g. stop smoking and diet
- (2) Nitrates
Nitro-glycerine used as sublingual tablet or as spray
Long acting preparations now available

Isosorbide Dinitrate : Long acting vasodilator and venodilator Dosage: 10 - 30mg twice daily.

Propanolol (Beta blocker) Dosage: 10 - 120mg daily. Avoid in patients with Angina at rest or unstable Angina

Nifedipine Dosage: 10 - 30mg daily Not as potent as Betablocker but useful in unstable angina
--

There is an additive anti-anginal effect if both betablock and nifedipine are used.

IV. MYOCARDIAL INFARCTION

Chest or epigastric pain - deep pressing, squeezing or crushing in quality as in angina pectoris, but more severe and persistent, not relieved by nitrates.

Patient with no past history of angina may assume the pain to be indigestion and the frequency of nausea and belching reinforces this belief.

Less frequently, Myocardial Infarction presents as painless dyspnoea - difficulty breathing or syncope - loss of consciousness.

Treatment

- (1) Establish diagnose with an ECG if possible, and/ or cardiac enzymes assay, if available.
- (2) Bed rest
- (3) Oxygen administration
- (4) Keep the vein open with IV cannulas
- (6) Keep continuous monitoring of patient.

Pain Relief: **Morphine**: 5 - 10mg i.v 4 - 6 hourly
or **Pethidine** : 100mg 6 hourly as necessary

Oral anti-emetic:

Metoclopramide 5 - 10mg 6 hourly, when required for Nausea.

Thrombolytic / Anticoagulant therapy

Not feasible in the absence of a Coronary Care Unit.

Prevention of re-infarction;

1. Beta Blocker
2. **Acetylsalicylic acid (Asprin)** 75mg daily

Anti Arrhythmia

Management of Myocardial Infarction centres on the ability to correct ventricular fibrillation and other arrhythmias. In the present state of Gambia health delivery system, this is not a priority area as it is not common.

CHAPTER FIVE

DIABETES MELLITUS

DIABETES MELLITUS

Signs & symptoms

Suspect Diabetic patients generally presents as weight loss, fatigue, excessive thirst, eating and excessive urination.

Diagnosis:

Random plasma glucose of more than or equal 10mmol / L or 200mg / dl.

Fasting plasma level: more than or equal 7mmol/L or 140mg/dl and /or abnormal glucose tolerance.

Other clinical manifestation

Puritus vulvae, Balanitis, cramps in the calves or feet, tingling of the fingers, some patient develop a craving for sweet foods or drinks, visual blurring necessitating a visit to optician, widespread skin infection, bacterial or fungal.

I. CLASSIFICATION

Type I: Insulin Dependent Diabetes Mellitus - IDDM (Juvenile onset)

Type II: Non Insulin Dependent Diabetes Mellitus – NIDDM (Maturity onset)

Type III: Gestational Diabetes

II. MANAGEMENT

1. DIET - most important

- Maintain correct Weight for Height.
- Avoid free sugar completely in food and drink.
- Eat regularly but sensibly. Reduce the intake of carbohydrate as much as possible, eat half of what you used to eat, supplement with vegetables, meat or fish.
- Eat coos products as coos pap/Cherreh and Findi on other days.
- Fresh vegetables and Fruits

- Exercise regularly by taking walks at least twice weekly.

3. Patient Education

III. TREATMENT

A. Insulin Dependent Diabetes Mellitus (IDDM)

INSULIN

- Used in Type I diabetes and Type II who
- a. Develop ketoacidosis
 - b. Failed oral hypoglycaemic therapy

Types of Insulin

- Short acting
- Intermediate acting
- Long acting

Regimen for Insulin therapy

ONCE DAILY

- a. **Long acting Insulin** - Elderly patient requiring Symptomatic Relief
Type II diabetes uncontrolled by diet and oral hypoglycaemic therapy
- b. **Long acting + short acting Insulin** (actrapid) - Non-obese Type II uncontrolled by oral agents.

TWICE DAILY

- a. **Intermediate acting** Type I Diabetes
- b. **Intermediate acting + short acting Insulin** Type I Diabetes
Pregnant Diabetics

THREE TIMES DAILY

- a. **Short acting + intermediate or long acting** before main meal of the day.
Use in
 - Type I Diabetes
 - Diabetic requiring near perfect glycaemia control.

B. Non Insulin Dependent Diabetes Mellitus (NIDDM)

Oral Hypoglycaemic Treatment - This should not be used in pregnancy.

Sulphounylurea - Most widely used in the Gambia + Diet:

Tolbutamide

Dosage: 1 - 3g divided dose 3 - 4 times daily

Glibenclamide

Dosage: 2.5 - 20 mg daily once or twice daily

Biguanides - Rarely used in public health facilities

Metformin useful as an adjunct to sulphounylurea in obese diabetics

Dose: 500mg tds before meal.

Metformin - Risk of lactic acidosis makes it unsuitable

IV. SPECIAL PROBLEMS IN DIABETES

1. **Pregnancy (see chapter 7)**

Very strict control needed. Refer to specialist where possible. Use Insulin only. Twice daily S.C injection of Soluble Insulin and Isoplane Insulin.

2. **Surgery**

Give soluble Insulin in Dextrose saline IV during surgery and in the postoperative period until the patient start to feed.

3. **Severe Infection**

Change to Insulin twice daily subcutaneous injection Isoplane Insulin

Coma in Diabetes

- 1) Abnormal Glycaemia
 - a) Hypoglycaemia
 - b) Hyperglycaemic
 - i) ketoacidosis
 - ii) Nonketoacidosis
- 2) Other Metabolic causes
 - a. Uraemic coma with or without glyceimic upset
 - b. Lactic acidosis
 - c. Alcoholic coma

NB. WHEN IN DOUBT AS TO THE TYPE OF COMA ALWAYS GIVE GLUCOSE, NEVER INSULIN.

Hypoglycaemia Coma

Warning signs: sweatiness, clammy, irritability, confusion, rapid bounding pulse, and later coma.

Early stage - Take **oral glucose** as solid or liquid form.

Late stage - IV Injection of 50ml **50% dextrose**.
Repeat after 5 minutes if no response.
Then put up **5% Dextrose** in water or 4% Dextrose saline IV infusion
Monitor finger prick capillary glucose

Hyperglycaemic Coma

Patient may be comatose, confused or stuporous presenting with :

- Dehydration
- Air hunger with increased depth and rate of breathing
- Ketosis - a sickly sweet smell in the breath

Non- ketotic Hyperglycaemia

Occurs in elderly and dehydration is the main feature. No hyperventilation, No ketosis.

Treatment

1) Fluids

NB! WATER AND SODIUM REPLACEMENT IS THE MOST IMPORTANT ASPECT OF TREATMENT.

Give 500ml **Normal Saline** in first 15 minutes
1L in the next 45 minutes alternate **Ringers Lactate & Normal Saline**
1L in next one Hour, then 500ml hourly to a total of 5 litres or until
general features of dehydration have disappeared.

Change to 5% Dextrose if blood glucose drop to < 13mmol/L. The blood glucose should be kept between 12-16 mmol/l. Use **Dextrose Saline** or **Dextrose** strictly.

2) Insulin

Low dose of **Insulin** is adequate to inhibit inappropriate gluconeogenesis and excessive lipolysis and to decrease blood glucose by 4-5mg/L.
Intra-muscular injection, not subcutaneous, for better absorption.

Quick injection of 20 IU soluble /crystalline Insulin, then 5 IU hourly until ketosis disappears, then sliding scale Insulin regimen

Intravenous Route

Bolus of 5 unit soluble insulin, then 5 unit hourly, until ketacidosis disappear, then sliding scale Insulin

Potassium Supplement

1. Use **Sodium Lactate** (Hartmanns Solution) as fluid replacement.
2. Encourage oral fluids rich in potassium e.g. Fresh Juice or Oral Rehydration Salts
Pass Nasogastric tube or suction.

Comatose patient

- Nurse Semi prone position
- Pass urethral catheter
- IV line
- Record ECG if possible
- Avoid surgery in ketacidosis with concomitant intra peritoneal infection: manage conservatively until ketoacidosis is controlled.

Laboratory: Check Blood glucose sodium/ potassium on admission, then 2 hours later, then at frequent interval.
Urine sugar and ketones can be checked as part of the monitoring process

CHAPTER SIX

EPILEPSY

EPILEPSY

Epileptic seizure

Paroxysmal discharge of cerebral neurones apparent to either an external observer, for example, tonic clonic seizure or as an abnormal perceptual experience suffered by the subject.

Synonyms: Attack, Fit, Turn, Spell, Convulsion or Seizures

I. CLASSIFICATION OF EPILEPTIC SEIZURES

A. GENERALIZED SEIZURES

1. Absence seizures (Petit mal)

a. Typical abrupt onset and cessation of impairment of consciousness with or without Myoclonic Jerk, tonic or autonomic - component.

b. Atypical Absence: Less abrupt onset and cessation.

2. Myoclonic seizures

- a. Myoclonic Jerks
- b. Clonic Seizures

3. Tonic / clonic seizures: Grand-Mal or major convulsion

4. Tonic seizures

5. Atonic or Akinetic seizures

B. PARTIAL SEIZURES

Seizures which start by actuation of group of neurones limited to one part of one hemisphere.

1. Simple without impairment of consciousness. Synonym: Jacksonian

2. Complex partial - with impairment of consciousness. Synonym: Temporal lobe or psychomotor seizure

3. Partial Seizures evolving to generalize. Synonym: Secondary Generalized Seizures

II. TREATMENT

Phenobarbitone and Phenytoin are the commonly used drugs for the treatment of epilepsy in The Gambia, and provide control for a vast majority of the cases. The other drugs mentioned here are available only to specialists in tertiary institutions.

ABSENCE SEIZURES (Petit-Mal)

Sodium valproate: 5mg/kg/12 hourly,
Increase to maximum dose of 30mg/kg 12 hourly. Maximum dose: 2.5g daily
To be taken after food.

Ethosuximide: 2.5mg/kg 8 hourly, Increase gradually to 5mg/kg/8 hourly
Maximum dose: 1.5 -2g
Neonates: 0.25mg /kg IV
Children: 0.5mg /kg IV, orally 0.01mg/kg 8 hourly

Clonazepam: 1mg at night.
Maximum dose: 4-8mg daily in divided dose

MYOCLONIC & AKINETIC SEIZURES

Sodium valproate: Dosage as above

Clonazepam: Dosage as above

Nitrazepam: For short-term use. * Effectiveness decreases (waned) after weeks or months

TONIC/CLONIC SEIZURES: Grand-Mal

NB: START WITH ONE DRUG FIRST

Sodium valproate: if associated with Petit Mal

Phenobarbitone 30 or 100mg tabs
Dose: Adults: 60 - 180mg at night
Fitting child: Loading dose: Children: 15mg/kg, Neonates: 20-30mg/kg
Maintenance dose: 4-5mg /kg/day

Phenytoin 100mg tabs
Dose: 3 - 4mg/kg or 150 - 300mg as single or twice daily dose

TONIC / CLONIC SEIZURES: Grand-Mal

If associated with partial seizures OR partial seizures alone

Carbamazepine tabs 100 - 200mg Adults: Maximum Dose - 0.8 - 1.2g daily

Phenytoin

Children: 2mg/kg/8 hourly, increase over two weeks to max 10mg/kg/8 hourly

Phenobarbitone: Dose as above.

Primidone: 125 - 500mg daily, in divided doses

STATUS EPILEPTICUS

Seizures occurring in sequence without remission.

MANAGEMENT

1. Place the patient on the left lateral side
2. Avoid forcibly introducing objects into the mouth.
3. Keep the airways open
4. Put up IV line, catheter & NG tube

TREATMENT - ADMIT

Diazepam

Adults: 10mg slowly given over 5 minutes.

Children: 0.2mg/kg IV or 0.2 - 0.5mg/kg rectally.

Repeat as necessary

Clonazepam or **Lorazepam** also used

Paraldehyde - remains a valuable drug given rectally or deep IM injection.

To prevent recurrence, use phenytoin slow IV injection 15mg /kg at 50mg per minute
Or IV **Diazepam** 100mg in **Dextrose 5%** and titrate according to need.

CHAPTER SEVEN

OBSTETRIC AND GYNAECOLOGY

OBSTETRIC AND GYNAECOLOGY

I. OBSTETRIC

A. DRUGS IN PREGNANCY

Though there is no firm evidence that the majority of drugs used appropriately have any harmful effect on pregnancy, the administration of drugs in pregnancy should be avoided as far as possible, especially in the first three months of pregnancy. Where a drug needs to be given, extreme caution is needed.

SOME DRUGS CONTRAINDICATED OR TO BE USED WITH CAUTION

- Tetracyclines / Doxycycline (NEVER use in pregnancy)
- Aminoglycoside antibiotics e.g. Gentamicin
- Cytotoxics
- Sex hormones
- Propylthiouracil
- Iodides
- Sulphonylureas e.g. Tolbutamide
- Diuretics -long term use
- Sulphadoxine /pyrimethamine: First 12 weeks and after 34 weeks
- Co-trimoxazole
- Ergometrine

B. DISORDERS OF PREGNANCY

VOMITTING (MORNING SICKNESS)

Very common, so that most women accept it as normal. Do not take lightly, if the woman persists complaining.

TREATMENT

- Reassurance
- **Chlorpromazine** 25mg or **Promethazine** 25mg twice daily
- With heartburn, **Magnesium Trisilicate** or **Aluminium Hydroxide**
- **Metoclopramide** 10mg tabs

HYPEREMESIS GRAVIDARUM

Severe, persistent vomiting resulting in severe dehydration, ketosis and electrolyte derangement

TREATMENT

- ADMIT
- Rehydration - **5% Dextrose** to alternate with **Normal Saline** or **Hartmans Solution**.
- Electrolyte estimations and correction of imbalances if facilities available.
- Intramuscular injection of **Promethazine** 25mg or **Chlorpromazine** 25mg stat if severe vomiting.
- **Multivitamin** supplement – **Vitamin B** injection
- Check out for the other causes of vomiting, such as Urinary Tract Infections, Malaria, Appendicitis and MOLAR PREGNANCY

BLEEDING IN EARLY PREGNANCY (FIRST TRIMESTER)

COMMON CAUSES

1. ABORTION
2. HYDATIDIFORM MOLE
3. ECTOPIC PREGNANCY

1. FIRST TRIMESTER ABORTION

CLASSIFICATION

- i. Threatened abortion
- ii. Incomplete abortion
- iii. Missed abortion
- iv. Induced abortion

i. THREATENED ABORTION

CLINICAL FEATURES

- Mild vaginal bleeding
- Little or no abdominal pain
- Cervical Os closed
- Uterus enlarged

Ultrasound scan - Regular intrauterine gestation sac with foetus and fetal heart movements

MANAGEMENT

Complete bed rest.

Reassurance and counselling what to do if bleeding persists or increases.

ii. INCOMPLETE ABORTION

CLINICAL FEATURES:

- Moderate to severe lower abdominal pain
- Moderate to heavy bleeding with clots
- On examination, products of conception may be seen or felt in vagina or through Cervical Os.
- Cervical Os open

COMPLICATIONS:

- 1 - Haemorrhage
- 2 - Sepsis

MANAGEMENT

UNCOMPLICATED & INCOMPLETE ABORTION

- I/m Ergometrine 0.5mg stat if bleeding heavy or patient needs to be transferred.
Use with caution if there is hypertension or cardiac failure is present.
- Surgical evacuation of the uterus.
- **Ampicillin** caps 500mg four times daily

COMPLICATED & INCOMPLETE ABORTION

SHOCK

- I/M **Ergometrine** 0.5mg stat
- IV **Normal Saline** to run at rate determined by clinical condition.
- Remove products of conception from cervical Os if present.
- Hb, Group, cross match blood and transfuse depending on clinical condition.
- Surgical evacuation of the uterus when stable.
- **Ampicillin** 500mg four times daily and **Metronidazole** tabs 500mg three times daily for five days

iii. SEPTIC ABORTION

Signs & Symptoms

Mild to severe lower abdominal pain

Pyrexia: Temperature 37.5 degree Celsius or above.

Foul smelling bloody discharge per vaginum

Tender lower abdomen, pelvic abscess.

May progress in severity leading to septicaemia in neglected cases.

MANAGEMENT

MILD

Antibiotics: Doxycycline 100mg bd for 7 days
And Metronidazole 500mg three times daily for 5 days
or Erythromycin 500mg four times daily for 5 days

Surgical evacuation of the uterus after 24 hours of antibiotic therapy.

SEVERE:

IV Fluids	Normal Saline 500ml or Hartmanns solution
IV Antibiotics	Ampicillin 500mg 6 hourly or cephalosporin (if available) and Metronidazole 500mg 8 hourly for 24 - 48 hours and Gentamicin (i.m) 80mg 12 hourly- monitor urine output
If septicaemia develops - treat as in septicaemia	
Transfer to hospital	
Surgical evacuation of the uterus when stable.	

Stable condition indicates:

- Anaemia corrected
- Properly hydrated
- Temperature down to normal level

iv. SEPTIC INDUCED ABORTION

History of induced abortion

Signs of peritoneal irritation/infection if uterus is perforated - abdominal distension (Generalised)

Tenderness and rebound tenderness, other clinical features as in severe septic abortion.

MANAGEMENT - REFER TO MAJOR HEALTH CENTRE OR HOSPITAL

As in severe septic abortion

In addition, i.m **Tetanus Toxoid** 0.5ml stat.

Transfer to hospital for specialist attention.

2. HYDATIDIFORM MOLE

CLINICAL FEATURES

- Irregular vaginal bleeding - mild to heavy
- Vesicles may be passed
- Exaggerated symptoms and signs of pregnancy, e.g. Hyperemesis gravidarum. in rare cases, Pre-eclampsic.
- Uterine fundus higher than that period of amenorrhoea.
- Diagnosis or ultrasonic scan - snowstorm appearance Fetus absent.

MANAGEMENT

- Suction evacuation of the uterus under oxytocin cover.
- 20 units **oxytocin** in 500ml **5% Dextrose** to run at 20 - 40 drops per minutes during evacuation
- Antibiotics to be given as with uncomplicated abortion
- All women with hydatid mole need to be followed up quarterly to ensure that they do not develop complications such as chorion carcinoma.
- Check HB, weight and Urine HCG regularly
- Warning signs – weight loss, persistent bleeding, cough and haemoptysis and positive HCG test.

3. CHORIOCARCINOMA

- Most common following Hydatidiform mole
- Intermittent vaginal bleeding
- Cough and haemoptysis
- Weight loss
- Pelvic examination may show an enlarged uterus or no abnormal findings.
- Positive Pregnancy test
- Chest X-ray - Cannonball metastases

MANAGEMENT

Transfer to hospital for specialist management. Check Hb, WBC count and platelets.

CHEMOTHERAPY

Methotrexate:

Oral - 15mg daily for 7 days alternating with **folic acid** 5mg daily for 7 days

or I.M methotrexate 5 - 10mg daily for 7 days alternating with folic acid

In addition, actinomycine and cyclophosphamide have been found to be effective.

Twice weekly HB, WC count and HCG. Contraception and HCG measurements for 1-2 years.

PUEPEREAL SEPSIS

Pyrexia up to six weeks after delivery.

Temperature of 37.5 degree Celsius or above.

Notifiable for Midwives

Rule out

1. Malaria - blood film
2. Pyelonephritis - MSU.

CLINICAL FEATURES: Mild to severe

Pyrexia

Varying degree of lower abdominal pain and tenderness

Foul smelling lochia.

MANAGEMENT

Pelvic abscess / Septicaemia

Rule out ruptured uterus

Treat as in septic abortion.

IV Fluids	Normal Saline 500ml or Hartmanns solution
IV Antibiotics	Ampicillin 500mg 6 hourly or cephalosporin (if available) and Metronidazole 500mg 8 hourly for 24 - 48 hours and Gentamicin (i.m) 80mg 12 hourly- monitor urine output
If septicaemia develops - treat as in septicaemia	
Transfer to hospital	
Surgical evacuation of the uterus when stable.	

4. ECTOPIC PREGNANCY

Commonly presents at 6 - 8 weeks, Amenorrhoea and Lower Abdominal pain. It can occur acutely or protracted.

CLINICAL FEATURES

- Irregular vaginal bleeding
- Intermittent or constant abdominal pain (if ruptured the pain is very severe)
- If ruptured, : Pallor
Hypotension and rapid pulse
Abdominal distension
Paracentesis - non-clotting blood.
- If the ectopic is not ruptured, the pain can be localised and misleading.
-

MANAGEMENT

IV Fluids	Normal Saline 500ml or Hartmanns solution fast
Transfer to hospital AS SOON AS POSSIBLE for a Lapratomy	
Blood transfusion usually needed	

C. MEDICAL DISORDERS IN PREGNANCY

i. HYPERTENSIVE DISORDERS IN PREGNANCY

Hypertensive disorders in pregnancy are the commonest medical disorders in pregnancy and one of the four major causes of maternal death in The Gambia.

Definition: BP of 140/90 mm Hg or above

CLASSIFICATION

1. Hypertension presenting before pregnancy, e.g. Essential hypertension / Secondary hypertension
2. Pregnancy Induced Hypertension
3. Pre-Eclampsia, PIH & proteinuria

CLASSIFICATION OF PRE-ECLAMPSIA

1. MILD

Diastolic BP 90-100mmHg and 1+ protein in urine

2. SEVERE / FULMINANT

Diastolic BP of 90 and above with 2 or more + protein in urine.

SYMPTOMS OF SEVERE / FULMINANT

- Headache
- Visual disturbances
- Hyperexcitability
- Hyper-reflexia
- Oliguria – urine output < 400mls in 24 hours
- Epigastric pain

All the above indicate impending eclampsia, which is the end stage manifestation of this disease process. This is characterised by tonic and clonic convulsions, lasting few seconds to minutes.

COMPLICATIONS OF PRE-ECLAMPSIA

1. Eclampsia
2. Cerebrovascular accidents
3. Cardiac failure
4. Renal failure
5. Placental abruption and disseminated intravascular coagulation (D.I.C)
6. Intra uterine growth, retardation and intra-uterine fetal death

MANAGEMENT

ADMIT ALL CASES

CLASSIFICATION OF BLOOD PRESSURE

Mild - Diastole 90mmHg

Moderate – Diastole > 90-120mmHg

Severe – Diastole > 120mmHg

1. MILD Pre-Eclampsia

- Rest
- **Diazepam** 10mg nocte orally
- 6 hourly BP
- Daily urinalysis for protein
- 24 hour urine output
- Fetal assessment - growth, Amniotic fluid volume measurement
- Check reflexes daily
- **Methyldopa** for BP of 90 – 120mmHg
250mg tds up to 500mg qid
Deliver when fetal maturity attained

3. SEVERE / FULMINANT Pre-Eclampsia

- Nurse in quiet surrounding
- **Diazepam** 10mg nocte orally
- 6 hourly BP
- Daily urinalysis for protein
- 24 hour urine output (indwelling catheter)
- Fetal assessment - growth, Amniotic fluid volume measurement
- Check reflexes daily
- Hydralazine 20mg in 500ml 5% dextrose, titrate to keep diastolic pressure under 100mmHg
- Alternatively control BP with Nifedipine sublingual and **Methyldopa** for BP of 90 – 120mmHg 250mg tds up to 500mg qid
- Refer to hospital and
- Deliver as soon as possible

ii. DIABETES IN PREGNANCY

DEFINITION AND DIAGNOSIS - See section on Diabetes (chapter 5)

- Requirements of hypoglycaemic agents increase with advancing pregnancy.
- Maternal and fetal complications - See section on Diabetes
- Pre-Eclampsia

SCREENING FOR DIABETES

Refer for fasting blood sugar, if:

- History of Macrosomia (big baby > 4kg)
- History of Glycosuria
- History of Family History of Diabetes
- History of Previous still births and neonatal deaths

FETAL COMPLICATIONS

1. Fetal macrosomia
2. Intra - uterine growth retardation leading to intra-uterine fetal death
3. Fetal anomalies
4. Neonatal hypoglycaemia - in both small and big baby

MANAGEMENT

Ideally, by obstetrician and physician experienced in management of diabetes.

PRE-PREGNANCY COUNSELLING

Stop oral hypoglycaemia and change to Insulin, six weeks before pregnancy is planned. Aim to obtain as near as possible to normal blood glucose levels (4-6.5 mmol/L) for at least six weeks before pregnancy.

MANAGEMENT IN PREGNANCY

- Review two weekly jointly by Obstetrician and Physician
- Two weekly fetal assessment
- Insulin therapy, Soluble and Lente.
- Allow pregnancy to continue to term : 38-40 weeks

MANAGEMENT IN LABOUR

5 units Insulin soluble in 500ml 5% Dextrose slowly
Hourly blood sugar if possible.

Watch for Hypoglycaemia after delivery of the placenta. DO NOT GIVE INSULIN AFTER DELIVERY

iii. HEART DISEASE IN PREGNANCY

May be diagnosed before pregnancy or may present for the first time during pregnancy. Main aim is the early detection and treatment of heart failure.

SIGNS AND SYMPTOMS

- Dyspnoea - on exertion
Symptoms at rest:
- Paroxysmal nocturnal dyspnoea
- Acute pulmonary oedema - severe dyspnoea, generalised crepitations on listening to the lungs, frothing at mouth and nose
- Dependent oedema
- Triple rhythm with or without murmurs or auscultation of the heart

MANAGEMENT

1. Transfer all known cases of heart disease to Antenatal clinic in Major Health Centre or Hospital
2. See two weekly for assessment to detect early signs of heart failure and counselling on the recognition of the early symptoms of cardiac failure.
3. Admit if heart failure occurs. Stay in hospital till delivery
4. Bed rest in cardiac position
5. Diuretics: **Furosemide**
Oral 40 mg twice daily in mild failure
I.V 40-80mg twice daily in moderate or severe failure
Indwelling catheter in severe failure
6. Correct anaemia and treat hypertension if present
7. Potassium replacement after chronic diuretic use.

IN LABOUR

- NO I.V. FLUIDS
- **Furosemide** i.v. 40 - 80mg depending on severity
- Antibiotic prophylaxis: i.v. **Ampicillin** 500mg stat, then orally 500mg six hourly for five days.
- Aim for vaginal delivery
- **Oxytocin** – i.v 10mg for 3rd stage. No ERGOMETRINE.
- Observe closely in puerperium. Stay in hospital for at least a week.
- **DIGOXIN:** Where indicated - See section on cardiac failure.

iv. ANAEMIA IN PREGNANCY

Definition

Hb less than 10.2g/dl.

By this definition most Gambian women are anaemic. NB! Hb normally drops in pregnancy.

CLINICAL FEATURES

- Dizziness
- Lethargy and easy fatigability
- Pallor
- Cardiac failure if severe.
- Increased susceptibility to infection

ANAEMIA PROPHYLAXIS

- Iron supplements: **Ferrous sulphate / folic acid**, one tablet daily after food.
- Antimalarial prophylaxis
- Blood transfusion : Hb less than 5g / dl or if heart failure develops.

CONTINUE MANAGEMENT AS IN CARDIAC FAILURE

- IV **furosemide** 40-80 mg at beginning of transfusion
- Imferon infusion when oral iron not tolerable

TREATMENT OF ANAEMIA

1. HB of 8-10g/dl - **Ferrous sulphate / folic acid** (FeFa) – one tablet twice daily
 - Malaria prophylaxis
 - **Levamisole** 3 tablets statdose
3. HB 6-8g/dl - **Ferrous sulphate / folic acid** (FeFa) – one tablet twice daily

INDICATION FOR PARENTERAL IRON

- Patients who cannot tolerate iron
- Lack of compliance
- Prescribed by a Medical Officer only.

NB! Sickle-cell anaemia in pregnancy should be managed only in a hospital.

v. MALARIA IN PREGNANCY

Clinical features as in Malaria section (chapter 1).

DRUGS: 1st, 2nd and 3rd trimesters - **chloroquine** (Adult dosage).

Sulphadoxine & Pyrimethamine - contraindicated in first twelve weeks and after 34 weeks.

Quinine use in pregnancy.

vi. URINARY TRACT INFECTION IN PREGNANCY

Increased susceptibility because of ureteric dilation and relative urinary stasis. Refer to STD/STI Manual.

PYELONEPHRITIS

CLINICAL FEATURES

- Pyrexia
- Rigors
- Renal angle pain /tenderness
- Dysuria
- Rule out malaria.

TREATMENT

Antibiotics as per results of culture and sensitivity of midstream specimen of urine

Nitrofurantoin 100mg four times daily for 7 days

D. USE OF ANALGESIA IN LABOUR

PETHIDINE

Pain relief in first stage, but ensure there is no sign of obstruction. Obstructed and prolonged labour cases need to be referred immediately.

ADMINISTRATION.

I/M **Pethidine** 50 - 100mg stat.

REPEATED DOSE SHOULD BE GIVEN ONLY AT HOSPITAL LEVEL.

And when delivery is not imminent and there is no fetal distress.

NB: For pethidine and morphine overdosage, refer to chapter 19.
Ensure proper recording of DDA drugs.

E. DRUGS USED IN PREGNANCY AND LABOUR

1. OXYTOCICS

a. ERGOMETRINE MALEATE

INDICATIONS FOR USE:

- i. In all incomplete abortions
- ii. 3rd stage of labour.

Dose: 0.5mg intramuscularly. Avoid intravenous administration: causes increased Blood Pressure

Oral ERGOMETRINE is of little benefit as prophylaxis in post-partum

CAUTION: Do not use in the presence of hypertension or cardiac failure. Use Oxytocin instead

b. OXYTOCIN

INDICATIONS FOR USE:

- i. 2nd trimester inevitable abortion when expediting expulsion is required, E.g. bleeding, infection.
- ii. Augmentation of labour
- iii. 3rd stage of labour
- iv. Induction of labour
- v. Postpartum haemorrhage

RECOMMENDED REGIMES

1. **Induction of labour:** 5 units **oxytocin** / 500ml **5% Dextrose** to run at 10 to 60 drops increasing by 10 drops every hour according to progress of labour, until optimum contraction.

2. **Augmentation of labour** - as with induction

CAUTION: Rule out malposition in grand multiparae

Do not use in breech presentation

Do not use in patients with caesarean section.

3. **3rd stage** -10 units intravenous as a bolus

4. **2nd Trimester inevitable abortion** - 20 units / 500ml 5% Dextrose to run at 30-40 drops per minute.

5. **IUFD** (Intra-uterine fetal death) - as in induction of labour. Rule out ruptured uterus.

6. Post-partum haemorrhage 20 units /500ml 5% dextrose 30-40 drops per minute.

Bleeding in Pregnancy and Labour

ANTEPARTUM HAEMORRHAGE

Definition

Any PV bleeding during pregnancy or labour

CAUSE

1&2 Trimester see Abortion and Ectopic

3rd trimester and during labour mainly:

Placenta praevia 93%) and abruptio placentae (50%)

Signs & symptoms **Placenta praevia:** Uterus usually not tender
Abruptio placentae: Uterus tender, hard

Management at Health Centre and Dispensary level:
Check BP and start I.V. line (N/S or Ringer Lactate)
Where possible check Hb
Abdominal examination only, DON'T DO A PV
REFER IMMEDIATELY to Major H/C or hospital for scanning and further management.

Management at hospital level according to underlying cause.

POST PARTUM BLEEDING (PPH)

Definition: Pelvic bleeding after delivery: estimated blood loss above 500ml (1 kidney dish)
Main causes: Retained products or placenta
Atonic uterus
Vaginal or cervical tears
Laceration in circumcision scars

Management

Secure IV line immediately (Normal Saline or Ringers Lactate fast)
ERGOMETRINE MALEATE 0.5mg/ml i.v. stat (if BP is not raised)
If bleeding is severe: give Oxytocine 10IU stat and 20 IU in 500ml N/S
Catheterise
Rub uterus until firm and expel clots
Remove blood clots from vagina and check for tears (circumcision tear or vaginal tear)
Repair where possible vaginal / perianal tears
Start Ampicillin 500mg I.V

If bleeding is severe or cannot be controlled: Refer as soon as possible

Repair of circumcision tears: They can bleed heavily

Suture of circumcision tears:

Insert catheter

Infiltrate with L/A

1 or 2 Haemostatic sutures ONLY, DO NOT REPAIR CIRCUMCISIONS, they will heal

Management at hospital level according to cause of bleeding

Blood transfusion where necessary.

II. GYNAECOLOGY

A. PELVIC INFLAMMATORY DISEASE (PID)

CLINICAL FEATURES: Degree of symptoms and signs reflect severity

SYMPTOMS

- Bilateral lower abdominal pain
- Fever
- Vaginal discharge may or may not be present.
- May be preceded by dysuria, commonly occurs on about a week after menstruation.

SIGNS

- Bilateral tenderness over suprapubic region
- Vaginal examination - tenderness over uterus, both fornices and on moving the cervix
- Vaginal discharge - purulent - may be seen.
- Pyrexia

TREATMENT

MILD

Doxycycline 100mg twice daily for seven days
Or **Tetracycline** caps 500mg four times daily for five days
Or **Metronidazole** 200 - 400 mg three times daily for five to seven days.

SEVERE - REFER TO MAJOR HEALTH CENTRE OR HOSPITAL

- Hyperpyrexia
- Dehydration
- Severe lower abdominal pain and tenderness.

TREATMENT

• Intravenous fluids to correct dehydration.
• I.V. ANTIBIOTICS AND CONTINUE ORALLY FOR 5-7 DAYS
1. **Metronidazole** 500mg three times daily for 24 to 48hrs
2. **Ampicillin** 500mg four times daily or
Cephalosporins if available.
3. **Gentamycin** 80mg I.M. twice daily for 5 - 7 days.
If no improvement in 48 hours or if there is tenesmus / diarrhoeas or a pelvic mass - consider pelvic abscess. Refer to hospital
In presence of positive pregnancy test: rule out ectopic pregnancy.

CHAPTER EIGHT

CONTRACEPTIVES

CONTRACEPTIVES

Synthetic ovarian steroids are oestrogens and progestogens. The most commonly used oestrogens and progestogens are Ethinyl oestradiol and levonogesterol, norethisterone and medroxy progesterone acetate (Depoprovera) respectively.

I. ORAL CONTRACEPTIVES

USES

- Prevention of pregnancy
- To control menorrhagia eg. in fibroids
- To regulate certain menstrual disorders after gynae pathology has been ruled out
- Secondary, amenorrhoea where the cause is known (excluding pregnancy) and where the woman wants to have a monthly period - oral contraceptives
- Dysmenorrhoea

II. SIDE EFFECTS AND COMPLICATIONS OF COMBINED ORAL CONTRACEPTIVES

More common with the high dose pill.

MINOR

- Nausea and vomiting
- Weight gain
- Mild to severe headaches including migraine
- Menstrual disorders - break through bleeding and sometimes amenorrhoea.
- Acne
- Depression

SERIOUS

- Venous thromboembolic disease
- Arterial hypertension.
- Myocardial infarction and CVAS.

EXAMINATION

- General
- Weight and blood pressure
- Breast
- Pelvic / cervical smear examination

III. CHOICE OF PILL

Low dose pills containing 30 - 35 microgram of oestrogens are preferable, as they are associated with fewer side effects and complications than the high dose - 50 microgram pills.

ADMINISTRATION

- First pill is taken at the beginning of the menstrual cycle for 21 days
- Placebo for 7 days

FOLLOW - UP

- Client should be seen one month after commencement of the pill, three (3) months and then six months:

At each visit:

1. Enquire about side effects and complications
2. Weight and blood pressure measurements

NB! In the presence of side effects, appropriate treatment should be given, including stopping the pill.

IV. CONTRAINDICATIONS TO THE USE OF ORAL CONTRACEPTIVES

1. ABSOLUTE

HISTORY OF OR CURRENTLY EXISTING

1. Hypertension
2. Ischaemia disorders
3. Thromboembolic disorders
4. Heart Disease
5. Severe migraine
6. Liver disease jaundice
7. Pregnancy
8. Recent Hydatidiform mole
9. Breast Cancer
10. Undiagnosed vaginal bleeding

2. RELATIVE

1. Risk factors for cardiovascular disease e.g. smoking and age over 40 years
2. Varicose veins
3. Age above 45 years
4. Before and immediately after major surgery
5. Undiagnosed scanty or absence of period.
6. Severe depression

V. PRESCRIBING THE PILL

Assess for suitability by history and physical examination, with particular attention to contraindications.

CHECK FOR HISTORY ON:

- Drug therapy. Some drugs e.g. Rifampicin reduce efficacy
- Cardiovascular disorders
- Leg swelling and pain
- Breast cancer
- Depression

CHAPTER NINE

SEXUALLY TRANSMITTED INFECTIONS

SEXUALLY TRANSMITTED INFECTIONS AND OTHER RELATED INFECTIONS

GENERAL GUIDELINES

It is not always possible to make firm laboratory-proven diagnosis of Sexually Transmitted Infections (STI). Therefore the treatment recommended in this section is based on the syndromic approach to management. Conditions that do not fall within these syndromes are discussed at the end under separate headings. Also refer to the STD/STI Manual.

The following messages must be emphasised to all patients and their contacts:

- Complete all medications as advised
- Come back for follow up as directed
- Stress the need for examination and treatment of all contacts
- No sexual intercourse during infections
- Use condoms for all sex
- All pregnant women to have test for syphilis during the first three months of Pregnancy routinely.

I. URETHRAL DISCHARGE IN MEN

Symptoms: Urethral discharge
Pain when passing urine (dysuria)

The commonest cause is Gonorrhoea. Other causes include Chlamydia and Trichomonas.

Examination and treatment

If discharge seen, treat with any of the following drugs for gonorrhoea and chlamydia

Ciprofloxacin 500 mg stat orally
And **Doxycycline** tabs 100 mg twice daily for 7 days!
or **Spectinomycin** 2g stat by intramuscular injection
or **Erythromycin tabs** 500mg four times daily for 10 days
or **Kanamycin** 2g stat by intramuscular injection (1g into each buttock)

FOLLOW UP 7 DAYS LATER AND IF NO IMPROVEMENT, REFER TO REGIONAL STI CLINIC

II. VAGINAL DISCHARGE

Symptoms: Vaginal discharge

Examination and treatment:

1. **PURULENT DISCHARGE**
Treat for Gonorrhoea, Chlamydia, Trichomoniasis and Bacterial Vaginosis
2. **CLUMPED DISCHARGE**
Treat for Gonorrhoea, Chlamydia and Candidiasis
3. **YELLOW/GREEN VAGINAL DISCHARGE**
Treat for Trichomoniasis
4. **FLAKY WHITE VAGINAL DISCHARGE**
Treat for Candidiasis (Thrush)

TREATMENT

Gonorrhoea and Chlamydia:

Ciprofloxacin 500 mg stat orally (**Not for pregnant women**)
And **Doxycycline** tabs 100 mg twice daily for 7 days (**Not for pregnant women**)
Or
Erythromycin tabs 500 mg four times daily for 10 days (**during pregnancy**)

Candidiasis:

Clotrimazole 500 mg inserted in the vagina stat
or **Clotrimazole** 200 mg inserted in the vagina for 3 days
or **Miconazole** 200 mg inserted in the vagina daily for 3 days
or **Nystatin** 100,000 U inserted in the vagina once daily for 14 days

REVIEW AFTER 14 DAYS INSTEAD OF AFTER 7 DAYS.

Trichomoniasis and Bacterial Vaginosis:

Metronidazole tabs - 2g (8 tablets) orally stat
or **Metronidazole** tabs 500mg orally twice daily for 7 days

(Do not give Metronidazole during the first 3 months of pregnancy!!! Delay treatment until 4th month)

REVIEW AFTER 7 DAYS

III. GENITAL ULCERS IN MEN AND WOMEN

Symptoms: Genital ulcer with or without lymphadenopathy, with or without pain.

Examination:

1. Genital ulcer (open sore) - painful or painless with or without swollen lymph nodes in groin.

Treatment:

- a. Painless - Treat for Syphilis
 - b. Painful – Treat for Chancroid
- Use local anaesthetic cream (**lignocaine** cream)

2. Multiple, small, painful blisters (Herpes)

Treatment: Treat to relieve symptoms of Genital Herpes

IV. SYPHILIS

TREATMENT

Benzathine Penicillin 2.4 million Unit: 1.2 million into each buttock stat.
or **Procaine Penicillin** 1.2 million Units daily for 10 days intramuscularly
or (for men and non-pregnant women allergic to penicillin) :

Doxycycline tabs 100 mg twice daily for 10 days

or (for pregnant women allergic to penicillin)

Erythromycin tabs 500 mg four times daily for 14 days

NB! Babies of such women should be screened for syphilis, preferably during first 7 days of life.

V. CHANCROID

Symptoms: multiple painful genital ulcers and painful inguinal adenopathy

TREATMENT

Cotrimoxazole 2 tablets twice daily for 14 days
Or **Erythromycin** tabs 500mg three times daily for 7 days

VI. GENITAL HERPES

Symptoms/signs: pain, dysuria, discharge and flu like symptoms. Painful inguinal Adenopathy, multiple vesicles ---> ulcers ---> crust.

TREATMENT

Saline baths, analgesics (pain killers)
Acyclovir tabs 200 mg 5 times daily for 7 days for 1st attacks
Acyclovir 200 mg 5 times daily for 5 days for recurrent episodes
NB: Remember to inform patient that attacks can be recurrent

VII. SEXUALLY ACQUIRED ACUTE INGUINAL LYMPHADENITIS

(Lymphogranuloma venereum) - Rare
Examination: No other obvious cause, e.g. cut on leg?

Signs & Symptoms:

- Very painful inguinal lymph nodes (bubo)
- Valley in the groin (groove sign)
- There may be transient genital ulcers and the characteristic saxophone penis
- Test to exclude TB

TREATMENT:

Erythromycin tabs 500 mg four times daily for 21 days (for pregnant women)
or **Doxycycline** tabs 100 mg twice daily for 21 days

NB! REVIEW ALL PATIENTS AFTER 7 DAYS AND REFER TO REGIONAL STI CLINIC IF THERE IS NO DEFINITE SIGN OF IMPROVEMENT

VIII. ACUTE EPIDIDYMITIS

Signs & Symptoms

Moderate to severe pain and associated tenderness of one testicle. Remember torsion and refer to surgeons if in doubt.

TREATMENT

Doxycycline tabs 100 mg twice daily for two weeks with treatment for Gonococcal
or **Ciprofloxacin** 500 mg stat in severe acute cases
or **Erythromycin** 500mg four times daily for two weeks
Support/truss.
Bed rest and analgesics.

IX. URINARY TRACT INFECTION (UTI)

Signs & Symptoms: Dysuria and frequency of micturition.
Proteinuria/haematuria (protein/blood in urine)

Culture and sensitivity test to select antibiotic of choice

TREATMENT: ENCOURAGE FLUID INTAKE

Nitrofurantoin tabs : 50-100mg four times daily for 7 days
or **Ampicillin** 250mg capsules: 2 caps four times daily for 7 days

X. PUBIC LICE (PEDICULOSIS PUBIS)

Symptoms: Itching in pubic and perianal areas

TREATMENT

- Shave off pubic hair
- Remove lice with forceps
- Apply **Benzyl benzoate** 25% over affected area and wash off after 24 hours
Repeat after 3 DAYS if indicated. Treat all sexual contacts
- Follow up and Review after 7 days
- Advice patient to maintain personal hygiene

XI. SCABIES

See chapter 10 on Skin conditions: NB! Treat all sexual contacts.

XII. SECONDARY SYPHILIS

Signs & Symptoms

Skin: Non-itchy, generalised, macular or papular rash, may involve palms and soles. Pink or copper coloured Condylomata lata in moist areas. Pustular or psoriatic lesions. Patchy alopecia (hair loss)

Mucous membrane lesions: Painless erosions on genitalia, mouth.

Generalised lymphadenopathy

Constitutional symptoms: fever, malaise, and arthralgia

Others: Nephrotic syndrome, iritis, meningitis, choreoretinitis, periostitis hepatitis

Duration is more than 2 years

TREATMENT

Procaine Penicillin 0.6 MU intramuscularly daily for 14 days
or **Erythromycin** tabs, 500mg 4 times daily for 21 days
or **Doxycycline** tabs 1 tablet twice daily for 21 days (not for pregnant women)

SYPHILIS IN PREGNANCY

Treat with **Penicillin** or **Erythromycin** if allergic to Penicillin

CONGENITAL SYPHILIS

Treat with **Procaine Penicillin** 50,000 Units /Kg body weight intramuscularly daily for 10 days

If CNS is excluded, use **Benzathine Penicillin** 2.4 Million Units stat

XIII. GENITAL (VENEREAL) WARTS

- Apply 10-25% **Podophyllin** in Tinct. Benz. Co. very carefully to external genital, perianal, vaginal and rectal warts whilst avoiding normal tissue. Wash thoroughly four hours after application
- Allow surfaces to dry before removal of speculum for vaginal and anal warts
- Surgical treatment only for cervical and urethral warts
- Repeat treatment at weekly intervals

XIV. MOLLUSCUM CONTAGIOSUM

Prick lesions with sterile needle, squeeze and treat with iodine / phenol, if available

CHAPTER TEN

HIV / AIDS RELATED DISEASES

HIV / AIDS RELATED DISEASES

Major symptoms

Suspect adults with weight loss greater than 10%
Fever, for more than one month
Gastroenteritis for more than one month

Back up features

Oral thrush
Axillary lymphadenopathy
Kaposi sarcomas
Herpes zoster especially multi-dermatosis
A history of travel is often relevant.

ASYMPTOMATIC HIV POSITIVE SUBJECTS

Refer or follow up at three monthly intervals to assess if patient has symptoms and signs of disease progression.
Pre- and post counselling is necessary for both patient and partner.

MANAGEMENT OF SYMPTOMATIC HIV INFECTION

Prophylactic treatment with **Cotrimoxazole** 480mg: 2 tablets daily for life.

I. GASTRO-INTESTINAL SYMPTOMS

A. SORE THROAT /MOUTH/DYSPHAGIA

i. OROPHARYNGEAL CANDIDIASIS

Nystatin 100,000 Units three to four times daily
or **Ketoconazole** or **Miconazole** gel applied three times daily for 7 days
or **Ketoconazole** tabs 200mg once daily for 14 days NB! Check LFTs before ketoconazole. If ketoconazole is contraindicated, treat with **Fluconazole** 50mg once daily for two weeks.

ii. **APHTHOUS ULCERS**

Use **antiseptic** mouthwash three times daily.
Xylocaine gel for pain relief

iii. **HERPES SIMPLEX VIRUS**

Refer to Physician.

Analgesics (NSAID)

Acyclovir tablets 200mg x 5 daily for 5 days

iv. **KARPOSIS SARCOMA**

Raised nodules, which may easily bleed. The lesions may be in the extremities
Refer to specialist

v. **DYSPHAGIA**

Consider Candidiasis, ulceration and oesophagitis

If oral candidiasis present, treat with **Ketoconazole** tabs 200mg twice daily or **Fluconazole** 50mg once daily for three weeks. If no relief, refer to physician.

B. CHRONIC DIARRHOEA

Refer to Chapter 3

Consider early use of :

- 1 Antibiotics - Co-trimoxazole or Metronidazole -depending on the suspected causative organism
2. Thiabendazole or Albendazole for strongyloides
3. Anti-diarrhoeal drug, e.g. **Loperamide**, **Codeine** as a last resort.

II. RESPIRATORY DISORDERS

a. **TUBERCULOSIS**: Refer to chapter 12 on the management

b. **PNEUMONIA**: Treat as for HIV negative patients (chapter 2)
Refer to specialist for the management of failed treatments.

III. SKIN DISORDERS

(See chapter 10 on skin conditions)

a. **Karposis Sarcoma** - As above

b. **Herpes Zoster**: As above

c. **Seborrhoea Dermatitis / Fungal infections**

Use topical antifungal agents, e.g. **Whitfield's** or **Clotrimazole**. Use antifungal containing shampoo if scalp is peeling off.

d. **Dry skin**: Use emulsifying cream

e. **Tinea**: Use **Whitfield's** ointment or **Clotrimazole** cream

f. Recurrent bacterial infections - Folliculitis, Furuncles and Carbuncles. This is often due to staphylococcus.

Use **Chlorhexidine** - wash, and

Treat with **Cloxacillin**: Adults - 250mg-500mg caps four times daily for 7 days

Child under 2 years: 125mg four times daily

Child 2-10 years: 125-250mg four times daily

or **Erythromycin** if allergic to penicillin

Dose: Adult and Child over 8 years: 250- 500mg four times daily

Child under 2 years: 125mg four times daily

Child 2-8 years: 250mg four times daily

g. Molluscum Contagiosum & Warts - see chapter 7 on Sexually Transmitted Diseases.

IV. CNS PROBLEMS

Consider toxoplasma Encephalitis and Cryptococcal meningitis for acute neurological symptoms and refer to physician. Do lumbar puncture to exclude bacterial meningitis.

Peripheral neuropathy: Treat with **Vitamin B** complex.

V. DRUG REACTIONS

This is present in up to 10% of patients and can occur in patients with no previous history of allergy. Cotrimoxazole allergy is common. Stop all antibiotics if they cause rashes and treat with **Chlorpheniramine**.

VI. OTHER INFECTIONS

SEPTICAEMIA

Take blood culture, if possible.

1. **Salmonella**

Treat with **Chloramphenicol** or **Ampicillin** and refer to physician if no improvement or there is evidence of deterioration.

2. **Unidentified severe infections**

Treat with Intravenous **Ampicillin** 500mg 4 times daily with **Gentamicin** 80mg three times daily for 10 days.

NB! Consider TB if no improvement

HOME BASED CARE FOR SYMPTOMATIC HIV PATIENTS

Objectives

To visit HIV infected persons in their homes so as to assess their physical, social, psychological and spiritual needs.

To provide for such needs where possible

To carry out contact tracing

To Counsel and educate families and communities

To assess the value of counselling and health education on families and communities.

DISEASES OF THE RESPIRATORY SYSTEM

Treat as pneumonia with oral antibiotics
Give **Acetylsalicylic acid** or **Paracetamol** for pain relief
Refer sever cases or suspected TB to hospital

DISEASES OF THE GASTRO-INTESTINAL SYSTEM

Rehydrate with **Oral Rehydration Salt**
Antiemetic for vomiting - **Chlorpromazine** 25mg three times daily for 3-5 days
Codeine Phosphate for Diarrhoea - 30mg three times daily for 5 days or
Metronidazole for diarrhoea
Nystatin tabs for Oral thrush
Acetylsalicylic acid or **Paracetamol** for Pain relief
Milk for Protein supplement

DISEASES OF THE GENITO-URINARY SYSTEM

Assess response to treatment for STD
Treat STDs
Give analgesics for pain

SKIN DISEASES

Whitfield ointment for fungal infections
Antibiotics if indicated
Analgesics for pain
Incise abscesses
Chlorpheniramine for itching (4-8mg three times daily)

DISEASES OF THE NERVOUS SYSTEM

Analgesics for pain
Diazepam 5-10mg three times daily for restlessness and fits

OTHER DISEASE CONDITIONS

Anaemia - treat with iron and folic acid
Oedema - treat with diuretics (frusemide or Bendrofluazide)
Fever - treat with acetylsalicylic acid or paracetamol

RELATIVES who care for AIDS patients:

- must be provided with sodium hypochlorite or other suitable disinfectant to soak all soiled linen
- must be provided with gloves if patient has any open lesions
- must be taught basic hygiene

REMEMBER TO SEND ALL PATIENTS WHO MAY BENEFIT FROM IN-PATIENT CARE TO THE HOSPITAL OR MAJOR HEALTH CENTRE

CHAPTER ELEVEN

TREATMENT OF COMMON SKIN CONDITIONS

TREATMENT OF COMMON SKIN CONDITIONS

I. BACTERIAL SKIN INFECTION

These are highly contagious skin infections and include Impetigo, Furunculosis, Carbuncles.

Signs & Symptoms:

Impetigo - isolated pustules, crusted or ruptured

Furunculosis - boils

Carbuncles - inflammation of skin and deeper tissues, development of painful nodes and discharge of pus.

TREATMENT

- Instruct parent to cut fingernails and to wash child daily with soap.
- Clean lesion with disinfectant, Hydrogen Peroxide solution (20 vol).
- For small wet lesions: Apply GV paint or use Papaya paste or Sugar or Honey.
- For the preparation of papaya - peel, remove seeds, and make into paste by pounding. Apply paste on wound and cover with dressing. NB! Change daily.
- Remove crusts if possible.
- For furunculosis and carbuncles: consider incision and drainage.

ANTIBIOTIC TREATMENT should only be initiated if there are signs of regional or systemic spread, or are on the hand, feet or face. SINGLE ABSCESS DOES NOT NECESSARILY REQUIRE ANTIBIOTICS

ADULTS:

- **Cloxacillin** 250mg caps: One capsule four times daily for 7 days
- or **Erythromycin** 250mg tabs : One - two tablets four times daily for 7 days
- or **Doxycycline** 100mg tabs : One tablet twice daily for 7 days

CHILDREN:

- **Cloxacillin** 125mg/5ml susp or 250mg caps: 50 - 100mg/kg/day in 4 doses for 7 days
- or **Erythromycin** 125mg/5ml susp or 250mg tabs : 30-50mg/kg/day in 4 doses for 7 days

II. ECZEMA (DERMATITIS)

Symptoms: Erythema with crusting, scaling, itching.

Try to establish whether it is acute, subacute or chronic eczema:

- Acute: sudden eruption with erythema, vesicles and sometimes bullae, often with serious exudates (wet appearance)
- Subacute: lesions take several days to erupt, are red but not wet, no vesicles or bullae
- Chronic: develops after months/years, thickened dry and scaly skin, lichenification, deep cracks (can bleed), scratch marks, sometimes infected.

NB! As most eczema may recur, patient should be informed not to expect total recovery.

Remove any obvious precipitating factors in atopic, allergic or contact eczema. Ask about soaps, detergents, cosmetics etc. It is important to avoid scratching which makes the condition worse. Cover itchy areas with dressing and cut nails short in children.

TREATMENT

- Acute oozing: apply wet dressings soaked in boiled cold water and change every 4 hours. Improvement usually occurs after 2-3 days. Then treat with **calamine lotion** twice daily.
- Subacute + redness + swelling but dry: apply **zinc ointment** or **calamine lotion** twice daily.
- Subacute oozing: apply **gentian violet (GV)** paint twice daily.
- Subacute crusted with pus: remove crusts and apply GV paint. **Give systemic antibiotic treatment.**
- Subacute dry: apply emulsifying ointment twice daily.
- Chronic dry crusted: apply **Hydrocortisone** cream or **Zinc** ointment twice daily.
- Oral antihistamine may be used to relieve severe itching:

Adults: **Chlorpheniramine** 4 mg tablets: one tablet every 4-6 hours after food as required until symptoms stop

Children: **Chlorpheniramine** 0.4 mg/kg/day in 3-4 divided doses after food
or

Promethazine tabs: Adults: 25 mg every evening

Children: 1 mg/kg as single evening dose.

III. FUNGAL SKIN INFECTION

TINEA OR RINGWORM

For wet lesions (in skin folds or toe webs): wash and dry, apply **gentian violet** (GV) paint twice daily and make sure it dries.

For dry lesions (i.e. when wet lesions dried up or if initially dry) and Body ringworm: Benzoic acid 6% + salicylic acid 3% (**Whitfield's**) ointment - apply sparingly twice daily UNTIL ONE WEEK AFTER THE LESIONS HAVE CLEARED.

Alternative: **Clotrimazole** cream or **Miconazole** cream

In chronic or extensive cases of scalp ringworm and nail bed infection:

Adults: **Griseofulvin** 250 - 500 mg in single or in divided doses daily with food
AVOID IN PREGNANCY

Children: **Griseofulvin** 125mg - 10 mg/kg, as a single dose or in divided doses.

NB! TREATMENT SHOULD CONTINUE FOR SIX WEEKS. REPEAT IF NECESSARY.

INSTRUCT PATIENTS ON THE IMPORTANCE OF TREATMENT COMPLIANCE AND PERSONAL HYGIENE IN ORDER TO ERADICATE THE INFECTION.

IV. HERPES SIMPLEX

Localised itchy, slightly painful vesicles. More severe in HIV (+) patients.

TREATMENT:

Adults (symptomatic):

Apply **calamine** lotion 2-3 times daily.

Acetylsalicylic acid (Asprin) 600mg orally, preferably after food, every 6 hours as needed.

Alternative treatment: **Acyclovir** cream

TREAT SECONDARY INFECTION WITH ANTIBIOTICS

V. HERPES ZOSTER (SHINGLES)

A common presentation in HIV (+) patients.

TREATMENT

- Clean the lesions with hydrogen peroxide solution (20 vol) or wash them gently with soap and water.
- Paint the lesions twice daily with **Gentian Violet** paint or **calamine** lotion.
- For pain relief give: **Acetylsalicylic acid** 300 mg tabs or **Paracetamol** 500mg tabs: two tablets every 6 hours as needed

Alternative: **Xylocaine** gel

VI. PRURIGO

TREATMENT: Symptomatic

Calamine lotion: Apply 2-3 times daily (Adult & Children)

Chlorpheniramine 4 mg tablets:

Adults: one tablet every 4-6 hours after food

Children: 0.4 mg/kg/day in 3-4 divided doses after food.

TO BE TAKEN UNTIL SYMPTOMS STOP

VII. SCABIES

Treat the whole family and any other close contacts. After treatment, boil or use hot iron on all contaminated clothes, bedding and towels.

TREATMENT

- Wash the whole body with mild soap and water, preferably at night, and dry.
- **Benzyl benzoate** 25%: Apply to the whole body from the neck down. Ensure all parts of the skin are covered and allow the medication to dry and to remain on the skin for at least 10 hours.

NB: In children over 3 years, it is often necessary to treat the face also (except the eye surroundings).

For children below 1 year, use 12.5% application, by diluting one part of the 25% with an equal part of water.

- Next morning wash off the application with soap and water.
- Repeat treatment after 5 days.

Secondary infection is common and may mask the condition. In cases of severe or extensive infection, especially with secondary bacterial infection, give a systemic antibiotic as indicated under Bacterial Infection.

If itching is problematic, reassure patient as itching may persist for up to 2-3 weeks.

If severe, treat with **chlorpheniramine** tabs.

VIII. TROPICAL ULCER

Adults and Children:

- Clean ulcer with hydrogen peroxide solution (20% vol) or Eusol daily.
- Remove dead or damaged tissues, if wound is necrotic, and dress wound (Papaya paste, sugar or honey can be used. Magnesium sulphate solution can also be used.
- Rest with leg elevated.
- Improve on nutrition and diet.

If there is local infection treat with:

Phenoxymethylpenicillin (Pen V) 250mg tabs :
Adult: 2 tablets four times daily for 7 days
Children: 12.5 mg/kg four times daily for 7 days.

IX. URTICARIA

Symptoms: Eruption of papulas or wheals with intense itching

Allergic reactions: Look for a possible cause, e.g. allergy, insect bite / sting, drug induced reaction etc.

TREATMENT

Chlorpheniramine 4 mg tabs:
Adults: One tablet every 6-12 hours as required
Children: 0.1mg/kg/dose injection

Alternative: **Adrenaline** inj - 0.01ml/kg of 1:1000 dilution gradually.
RESERVE FOR ONLY CASES OF ANAPHYLAXIS

X. VARICELLA (CHICKENPOX)

Vesicular pustules - croups - on face, hands, or trunk, with extreme itching, which may lead to widespread infection and disfigurement. Hands should be kept clean and nails clipped short to reduce problems caused by scratching.

TREATMENT (symptomatic)

Children:

To relieve itching: **calamine** lotion: apply 2-3 times daily.
Treat pain and fever with **paracetamol** 10 mg/kg every 6 hours as required.

Adults:

Apply **calamine** 2% lotion 2-3 times daily
Acetylsalicylic acid 2 tablets, preferably after food, every 6 hours as needed
or **Paracetamol** 2 tablets every 6 hours as required.

CHAPTER TWELVE

TREATMENT OF COMMON EYE CONDITIONS

TREATMENT OF COMMON EYE CONDITIONS

I. CONJUNCTIVITIS

Acute inflammation of the conjunctivae, which may be infectious (viral or bacterial):

- Infectious conjunctivitis is often endemic and may become epidemic in conditions of poor hygiene. Secondary infection may lead to keratitis and subsequent blindness.
- Viral conjunctivitis is often preceded by a cold.
- Allergic or irritative conjunctivitis is often characterised by itching.

Clinical features

- “Red eye” (infected conjunctivae), either unilateral or bilateral. May be purulent discharge. Visual acuity intact.
- Pain and photophobia are signs of corneal involvement. Look for pericorneal infection and examine after fluorescein staining if available. Examine carefully to exclude foreign body (corneal or conjunctival)
- Chronic pruritis is usually the allergic form.

Treatment

- Wash several times a day to remove any discharge. Use tap water or normal saline
- Then apply **Tetracycline** or **Chloramphenicol** eye ointment 1 %: 4 times daily for 5 days
- Always look for foreign bodies (sub-conjunctival or corneal) and remove.

NB! Never use topical steroids.

IF THERE IS NO NOTICEABLE IMPROVEMENT WITHIN 48 HOURS, REFER TO A HIGHER LEVEL OF THE HEALTH SERVICE SYSTEM

II. OPHTHALMIA NEONATORUM

It is bilateral and appears immediately after birth. If only after 3 days, it is likely to be chlamydia, a less severe form of the infection.

- **Clinical features**

Sticky eyes in mild form
Purulent discharge (Chlamydia)
Oedema of eyelids in severe form

Prevention

Tetracycline 1% eye ointment: All delivered babies should have their eyes swabbed (wiped clean with wet gauze) and apply tetracycline in each eye.

Treatment

Clean with **Normal Saline** or **Ringers Lactate** at least 4 times daily
Apply **Tetracycline 1%** eye ointment hourly initially for 24 hours, then 4 times daily for 9 days.
plus **Erythromycin** syrup or tablets

Treat both parents for sexually transmitted diseases (Gonorrhoea).

Allergic conjunctivitis

Treat as for simple conjunctivitis:

Chlorpheniramine tab: 12mg/day divided in 3 doses - adults
4mg/day in 2 divided doses - children
plus Antihistamine eyedrops, if available

Kerato-conjunctivitis (corneal ulcers)

- Same treatment as for simple conjunctivitis: **Tetracycline 1%** eye ointment. Never use ointments or drops containing corticosteroids.
 - Give **Vitamin A** : 100,000 IU stat oral for infants < 1 year on day 1, days 2 & 8
200,000 IU start oral for older children and adults on days 1, 2 & 8.
 - Cover with an eye pad to relieve pain and photophobia.
 - Give **acetylsalicylic acid** or **paracetamol** as needed
- Refer to ophthalmic trained personnel.

Prophylaxis against the ocular complications of systemic conditions (e.g.: measles and other febrile illnesses):

Vitamin A

Children from 6 to 11 months of age: 100,000 IU by mouth.

Children from 1 to 5 years of age: 200,000 IU by mouth.

III. TRACHOMA

Keratoconjunctivitis due to **Chlamydia trachomatis**. It is the world's major cause of preventable blindness. Endemic and contagious, its occurrence is associated with poor hygiene, lack of water and over crowding.

Clinical features

Trachoma evolves through **four stages**. Early forms (stages I and II) can be completely cured with appropriate therapy. Patients in endemic areas should be

examined by everting the upper eyelid (have the patient look down and draw the eyelashes up while “tripping” the tarsal plate over a matchstick).
Follicles are the basic lesions; these are whitish granulations on an inflammatory base, which are better seen with a magnifying loupe.

Treatment

Tetracycline eye ointment 1% 3 times daily for 4-6 weeks
Review two weekly.
In severe cases, in addition to Tetracycline eye ointment
Give adults: **Tetracycline** 250mg - 1 capsule four times daily for two weeks
Children: **Erythromycin** syrup or tablets

Prevention

Adequate quantities of soap and water
Personal hygiene (hand washing, eye toilet, environmental hygiene)
Health education
Trichiasis epilate (removal) offending eye lashes and refer to ophthalmic personnel.

IV. VITAMIN A DEFICIENCY

Nutritional deficiency of vitamin A principally affecting infants and young children. Clinical manifestations are often precipitated by an acute febrile illness (measles, diarrhoea etc) and signs may evolve very quickly (in hours).

Prevention

Vitamin A Capsules

- Mother: 200,000 IU at the time of delivery or in the two months, which follow.
- Fertile women must not receive more than 100,000 IU / day, except in the two months following delivery.
- Children from 6 to 11 months of age: 100,000 IU by mouth every 3 to 6 months
- Children from 1 to 5 years of age: 200,000 IU by mouth every 3 to 6 months.

Nutritional education: Instruct mothers on locally available foods that are rich in vitamin A (e.g. yellow fruits & vegetables, especially papaya and carrots, red palm oil, green leafy vegetables, liver, eggs.)

NB: If vitamin A is given, doses should be marked on the health card. It is toxic so do not exceed the recommended dose.

V. FOREIGN BODY

History of Foreign Body (FB) entering eye. Symptoms usually are FB sensations and pain.

Treatment:

1. Removal of corneal foreign body under topical anaesthetic
 2. **Tetracycline** 1% eye ointment twice daily for 2 days
- NB. This should be done only by trained ophthalmic personnel.

VI. ACUTE GLAUCOMA

Sudden onset of severe glaucoma - Clinical features

- Pain in one eye
- Vision is reduced
- Eyeball is hard
- Pupil is larger
- Pupillary Light reflex absent

Refer to ophthalmic personnel

VII. PTERYGIUM

Whitish triangular membrane on the nasal aspect of the bulbar conjunctiva, progressing slowly towards the cornea.

Associated with dry climates, dust and wind. Does not regress spontaneously.

Occasionally, the eyes become red due to inflammation.

Treatment

1. Uncomplicated pterygium

Symptomless, not encroaching across the pupil. **No treatment.**

2. Progressive pterygium

Vascular, encroaching across the pupil, causing discomfort, lacrimation and sometimes secondary infection:

- Disinfection: wash eye with **normal saline**, apply **Tetracycline** eye ointment
- Surgical excision: Refer for cosmetic reasons or if it causes visual disturbance.

VIII. IRITIS

Sudden onset of pain and redness in one eye.

Vision is reduced

Pupil is small and irregular, sluggish to light

Redness, mainly around iris

RFEER TO OPHTHALMIC PERSONNEL

IX. CATARACT

Opacities of the lens that cause a progressive loss of visual acuity. Cataract is common in tropical regions. It is possibly associated with repeated episodes of dehydration.

Apart from surgery there is no treatment. Refer for Cataract Surgery - Ophthalmic personnel.

CHAPTER THIRTEEN

TUBERCULOSIS & LEPROSY

TUBERCULOSIS & LEPROSY

I. TUBERCULOSIS (TB)

INTRODUCTION

Globally, tuberculosis (TB) accounts for almost 3 million deaths annually and one fifth of all adult deaths in developing countries. The current global re-emergence of tuberculosis can be attributed to several factors, e.g. Human Immunodeficiency Virus (HIV), social dislocations, poverty, overcrowding and inadequate investment in public health. The emergence of multidrug-resistant bacilli threatens to make the situation worse as treatment is expensive. Cure rates greater than 85% can now be achieved in both HIV positive and HIV negative patients with conventional tuberculosis treatment even in developing countries. For multidrug resistant tuberculosis the case fatality rates of multidrug-resistant tuberculosis is 40% for HIV negative individuals and over 80% in HIV positive individuals.

Control of Tuberculosis

1. Central Level

The Leprosy & Tuberculosis Unit, Department of State for Health is responsible for the National Leprosy /Tuberculosis Control Programme (LTCP), with a National Committee as the policy making body.

2. Regional Level

At the regional level is the Leprosy/Tuberculosis **Control Officer (LTCO)**. They are responsible for the management and supervision of the activities of the Primary Health Care staff with regard to control of leprosy and tuberculosis.

3. Peripheral Level

Diagnostic facilities for leprosy and TB exist in the major health centres. These centres have Trained Leprosy/TB Inspectors (**LTI**) who make microscopic diagnosis, prescribe standard treatment for proven cases and refer suspicious cases to the Medical Officer in charge. The Village Health Worker (**VHW**) also supervises prescribed treatment in the field.

Immunization:

BCG Vaccine is given at birth as part of the EPI programme:

- 0.05 mls to infants.
- 0.1 ml to others.

BCG COMPLICATIONS

Treat only if present for six (6) weeks or more or is causing symptoms

1. Abscess:
Aspirate and **do not incise**
Erythromycin 75mg-125mg orally three times daily for 2-3 weeks or
Isoniazid 50mg orally once daily for 6 weeks
2. Lymph node enlargement:
A total excision biopsy is recommended, treat with once daily oral Isoniazid for up to 3 months.

SYMPTOMS AND DIAGNOSIS

Suspect all cases with a 4- week history of chronic cough, weight loss and fever.

Haemoptysis and history of contact with a known **TB** case are also important.

SPUTUM

- a. Collect and check 3 specimens of sputa. Ideally each should contain a “**clot**” and should be between three and five ml. This is examined for Acid Fast Bacilli (**AFB**) at health centres and RVH.
- b. Chest x-rays should be done where possible.

TUBERCULIN TESTING

Mantoux test is the skin test recommended by the Ministry of Health. NB! A negative result in a malnourished person does not exclude TB. Suspect TB, if a strong positive test of > 5mm in a child and > 10mm in an adult.

TREATMENT: PULMONARY TB

Directly Observed Therapy (**DOTs**) using Short Course Oral Therapy (**SCOT**) is available in The Gambia with the following dosage regimen:

Weight at Diagnosis	<u>Ethambutol</u>	<u>Rifampicin</u>	<u>Isoniazid</u>	<u>Pyrazinamide</u>
> 40kg	2000 mg	1600 mg	600mg	600 mg
26 - 40 kg	1500 mg	1200 mg	450mg	450mg
11 - 25 kg	1000 mg	800 mg	300mg	300mg
< 11 kg	500 mg	400 mg	150mg	150mg

Ethambutol should be used with caution in children less than five years old and the elderly.

COMPLICATED DISEASE/EXTRAPULMONARY

Refer to specialist TB MENINGITIS

Treat as for Pulmonary Tuberculosis. Add I.M. **Streptomycin** 20 mg/kg daily for 6-8 weeks.

Add **Prednisolone** tabs : 1-2 mg/kg orally once daily and gradually reduce after 4-5 weeks.

DIET

Patients are advised to eat protein rich food and to take plenty of rest.

All resistant and recurrent **TB** cases must be referred to the **Senior Leprosy/TB Medical Officer** at Central Level.

FOR FURTHER INFORMATION, REFER TO NATIONAL TUBERCULOSIS TREATMENT GUIDELINES.

II. LEPROSY

Although it is relatively rare in the Gambia, it is however necessary to maintain a high index of suspicion.

Symptoms:

Pale skin patch with sensory loss, thickened nerves, auto amputation of fingers and toes, thickened nose and ear lobes, loss of lateral aspects of eyebrows and painless ulcers. Refer all suspects to the Leprosy / TB clinics present in all major health facilities.

Diagnosis:

Skin slit and stains for Acid Fast Bacilli (AFB).

TREATMENT

1. **PAUCIBACILLARY**. This includes all cases of Tuberculoid (**TT**), Borderline-Tuberculoid (**BT**) and Borderline (**BB**) cases. The Bacillary Index (**BI**) is low at less than 2 in all smears.

Adults: **Rifampicin** tabs - 600 mg given monthly and supervised at the clinic and **Dapsone** tabs - 100 mg daily at home for 6 months.

Children: **Rifampicin** 10-15 mg/kg monthly and **Dapsone** 1-2 mg/kg orally daily as for adults

2. **MULTIBACILLARY.** This includes Borderline (**BB**) Borderline-Lepromatous (**BL**), and Lepromatous (**LL**) case. The Bacillary Index (**BI**) is greater than 2 in any smear. Treatment is for 24 months for both adults and children.

Adult: **Rifampicin** - 600 mg monthly and supervised in the clinic
Clofazamine - 300 mg monthly supervised in the clinic.
Clofazamine - 100 mg on alternate days at home.
Dapsone - 100 mg daily at home.

Children: **Rifampicin** - 10-15 mg/kg monthly and supervised in the clinic.
Clofazamine - 5-10 mg/kg once monthly and supervised in the clinic.
Clofazamine - 0.5-1 mg/kg alternate days at home.
Dapsone - 1-2 mg/kg daily at home.

Reversal Reaction

This is cell mediated due to immune reaction and associated with changes in the lesions and other clinical signs.

TREATMENT

1. Mild.

This involves pain in the skin and muscles with no nerve involvement. Response to analgesics, i.e. **Acetylsalicylic acid** or **Paracetamol** - two tablets three times daily is usually sufficient. **Indomethacin** or **Ibuprofen** - one to two tablets three times daily is useful for moderately severe cases. Refer all severe cases urgently to the Leprosy Medical Officer or Physician.

2. Severe.

This involves not only the skin but the nerves as well. Patients should be treated with

Prednisolone : 40-60 mg daily for 1 week
35-50 mg daily for 2 weeks.
25-40 mg daily for 1 month
20-30 mg daily for 2 months.
15 mg daily for 3 months.
10 mg daily for 3 months.
5 mg daily for 2 months.

NB! Patient may be on treatment with steroids for up to 12 months. Treatment with anti-leprosy drugs must continue. The dangers of long-term steroid treatment must be carefully considered.

Erythema Nodosum Leprosium (ENL)

This is an immune complex reaction, which is usually self-limiting. As the name implies nodular lesions, which may be painful, appear particularly along nerves.

TREATMENT

1. For mild cases use analgesics and anti-inflammatory as necessary.
2. For severe cases:

Prednisolone: 60 -100 mg daily for 3 days
40 - 75 mg daily for 3 days.
30 - 50 mg daily for 3 days.
20 - 30 mg daily for 3 days.
Then reduce by 5 mg daily and stop.

Recurrent and Chronic Disease: Refer to **Central Level for orthopaedic support and protective training.**

Iridocyclitis: Failing vision or painful eyes
Refer to **Central Level and Ophthalmologist.**

CHAPTER FOURTEEN

HAEMATOLOGY AND BLOOD TRANSFUSION

HAEMATOLOGY AND BLOOD TRANSFUSION

I. ANAEMIA

This is a reduction of haemoglobin in the blood (Hb < 9g/dl).

CAUSES:

1. Blood loss.
2. Increased destruction of red blood cells (haemolysis).
3. Failure of production.
 - a. Nutritional deficiencies - iron, Vitamin B12, folic acid, ascorbic acid.
 - b. Reduction in erythroid precursors - aplasia, leukaemia, marrow infiltration, lymphoma.
 - c. Ineffective erythropoiesis.
 - i. Anaemia of chronic disease.
 - ii. Renal failure.
 - iii. Thalassaemia.(Rare)

Clinical Manifestations:

This depends on the severity of anaemia, speed of onset, age and cardiovascular status of patient.

Symptoms:

Fatigue, dyspnoea, faintness, palpitations, dizziness, headache, blackouts, angina and oedema.

Signs:

Pallor of mucus membranes and skin creases, rapid pulse and heart failure.

INVESTIGATIONS

Hb. WBC. RBC MCV MCH MCHC Platelets
Blood film, Reticulocyte Count

TREATMENT

Elucidate cause and treat appropriately. Inappropriate use of Haematinics is useless.
For Hb of 6g/dl : Refer to Major Health Center
For HB 5g/dl or less - Blood transfusion

Symptomatic blood transfusion may be required.

- a. In acute blood loss.
- b. Do not transfuse in chronic anaemia if haemoglobin is stable.
+ PCV 15
+ PCV < 15 with heart failure.
Treat heart failure appropriately with Diuretics and rest.

A. IRON DEFICIENCY ANAEMIA

This is the most common type of anaemia.

TREATMENT

Treat the underlying cause.
Causes: Ulcers, poor nutrition, hookworms etc.

ORAL IRON (Route of Choice):

Ferrous sulphate 200 mg 3-4 times daily (200 mg = 60 mg elemental iron)
or **Ferrous gluconate** BP 300 mg 5-6 times daily. (300 mg = 36 mg elemental iron)
or **Ferrous fumarate** BP 200 mg 2-3 tiimes daily (200 mg = 65 elemental iron).

Optimal Response: rise in Hb of 1 g/week.

NB! Continue treatment for 3 months after normal Hb to replenish iron stores.

PROPHYLACTIC ORAL IRON

Recommended in: partial or total gastrectomy, low birth weight infants, pregnancy & female blood donors.

PARENTERAL IRON (Imferon)

Restrict to Hospital use only

INDICATION: Genuine intolerance of oral iron, failure of oral iron in malabsorption status.

Approximate total dose needed = (15 - HB level x 250 mg).

1. INTRAMUSCULAR IRON

Deep I.M injection in the upper outer quadrant of gluteus.

2. INTRAVENOUS IRON

NB! Avoid as much as possible particularly in patients with a history of allergy and previous drug reactions.

AVOID BLOOD TRANSFUSION IN MEGALOBLASTIC ANAEMIA **FOLATE DEFICIENCY**

Give folic acid 5 mg daily by mouth for at least 4 months.

15 mg daily may be required for severe malabsorption.

Give 5 mg weekly as prophylaxis in pregnancy.

B. MEGALOBLASTIC ANAEMIA

DEFINITION

Reduced haemoglobin (Hb<9g/dl) in blood due to deficiency of Vitamin B12 or Folate causing a fault in DNA synthesis. Vitamin B12 is obtained mainly from animal food products (kidney, liver, heart are the richest source) and Folate from both animal and plant products.

CAUSES

A) TYPE 1 – VITAMIN B12 DEFICIENCY

1. Low dietary intake (poverty or veganism)
2. Malabsorption:
 - a) Gastric:
 - i. Pernicious anaemia: Congenital or Acquired (type A. immune gastritis).
 - ii. Partial or total gastrectomy.
 - b) Intestinal:
 - i. Stagnant - loop syndrome.
 - ii. Chronic tropical sprue.
 - iii. Ileal resection and crohn's disease.
 - iv. Congenital specific malabsorption with proteinuria (Imerslund - Grabeck syndrome)
 - v. Fish tapeworm infestation
 - vi. Drugs e.g. metformin.

B) TYPE II - FOLATE DEFICIENCY

1. Low dietary intake:
 - a. Poverty.
 - b. Institutions
 - c. Goat's milk

2. Excessive Losses:
 - a. Dialysis
 - b. Congestive cardiac failure
 3. Drugs e.g. anticonvulsants, barbiturates.
 4. Alcohol abuse and liver disease
 5. Malabsorption
 - a) Ceeliac disease (gluten-induced enteropathy)
 - b) Dermatitis herpetiformis
 - c) Tropical sprue
 - d) Congenital specific
 6. Increased utilization
 - a) Pregnancy
 - b) Prematurity
 - c) Malignancies
 - d) Excessive marrow turnover
 - e) Chronic inflammatory disease
- C) TYPE III - ABNORMALITIES IN METABOLISM
- 1) Vitamin B12 Metabolism
 - a) Congenital:
 - i. Transcobalamin II deficiency
 - ii. Homocysteinuria
 - b) Acquired:
Nitrous oxide anaesthesia
 - 2) Folate metabolism:
 - a) Congenital: inborn errors
 - b) Acquired: Antifolate drugs
 - 3) DNA Synthesis
 - a) Congenital
 - i) Orotic aciduria
 - ii) Lesch - Nylan Syndrome
 - iii) Dyserythropoietic anaemia
 - iv) Drugs.

CLINICAL FEATURES

Usually insidious in onset and signs and symptoms of anaemia develop only in advanced cases of deficiencies. Detection as incidental findings is common or patients may present with features of other manifestation of deficiencies such as neurological signs and symptoms.

INVESTIGATIONS

- A) Full blood count with red cell morphology macrocytosis
- B) Stool microscopy for parasites
- C) Bone marrow aspiration - megaloblastic dyserythropoiesis

TREATMENT

- A) B12 deficiency
 - 1) **Hydroxycobalamin** injection – I.M. or Sc
 - 2) **Cyanocobalamin** tablets or injection - oral and I.M.
- B) Folate deficiency
 - Folic acid** tablets

C. SICKLE CELL ANAEMIA

Confirm diagnosis by electrophoresis whenever possible.
All confirmed cases should be maintained on prophylaxis

PROPHYLAXIS

- **Folic acid** tabs 5 mg daily.
- **Benzathine Penicillin** I.M. monthly or **Penicillin V** tabs 250 mg twice daily.
- **Pyrimethamine** 12-5 - 25 mg weekly.

PAIN CRISIS

The most common type of crisis presents as agonizing and relentless pain. Pain may be localised in a single long bone, symmetrically in several joints or involve the lumbar spine, ribs or pelvis.

MANAGEMENT

- **Analgesia:** Give pain relief at once using an opioid analgesic if available. (See section on acute pain - chapter 17).
- **Fluids:** Start IV normal saline 60 - 100 mls/Kg/24 hours.
- **Oxygen:** Give oxygen where available.

Investigations: Take blood for FBC, U+Es and blood cultures, group and save X-ray where possible.

NB! Avoid iron therapy

- **Antibiotics:** Start IV **Ampicillin** or **Chloramphenicol** or **Cephalosporin**.

OTHER COMPLICATIONS:

A. SPLENIC SEQUESTRATION

Children may suffer a rapid fall in haemoglobin. The spleen enlarges rapidly and death can occur from hypovolaemia and anaemia. Early transfusion is vital.

B. CEREBRAL SICKLING

Patients may present with strokes, fits, coma, bizarre behaviour or acute psychosis. Give IV fluids and early exchange blood transfusion may help.

C. GIRDLE SYNDROME (Easily mistaken for an acute abdomen)

Sickling in the splanchnic bed may cause abdominal pain with rigidity, loss of bowel sounds and increasing jaundice. Give IV fluids, consult surgeon to exclude other surgical abdominal causes but with-hold surgery unless unavoidable

BLOOD TRANSFUSION

Avoid as much as possible. Useful in sequestration. If possible, do exchange blood transfusion to reduce HB S level and decrease viscosity.

SICKLE CELL TRAIT

No treatment is required.

II. BLEEDING DISORDERS

Definition: Inappropriate and excessive bleeding either spontaneous or in response to injury.

ACQUIRED BLEEDING DISORDERS

a. Haemorrhagic disease of new-born.

Usually presents in breast fed infants 2-3 days after delivery, particularly in premature infants.

Treatment: **Vitamin K (Phytomenadione)** 1 mg IV. Refer if persistent.

b. Liver Disease

Hepatomegally and prolonged jaundice are usual hallmarks.

Treatment: **Vitamin K**- 10 mg IV daily for 3 days.

Fresh frozen plasma or fresh blood 450 mls/10 Kg/day.

c. Disseminated Intravascular Coagulation (DIC)

Causes: Acute severe infections.

Obstetric emergencies e.g. abruptio placenta, retained dead foetus.

Incompatible blood transfusion.

Severe trauma or burns.

Treatment:

1. Vigorous treatment of the underlying condition.
2. If bleeding is prominent, give fresh frozen plasma or fresh blood.
3. Cryoprecipitate may be used.
4. Heparin is not of proven use.

Refer all persistent or recurrent bleeds to physician/haematologist.

Haemophilia A (Factor VIII Deficiency), Haemophilia B (Factor IX Deficiency). These conditions are uncommon in The Gambia. Refer all suspected cases to physician/haematologist.

III. HAEMATOLOGICAL MALIGNANCIES

These include Leukaemia (acute and chronic), multiple myeloma, Hodgkin's disease and non-Hodgkin's lymphomas. Refer all suspected cases to consultant physician/haematologist for confirmation and management.

ATRIAL FIBRILLATION HEART VALVE PROSTHESES

Life long Warfarin treatment is required.

WARFARIN

Dose: Load with 10 mg daily for 3 days, then control dose using prothrombin time measurements expressed as International Normalised Ratio (INR).

Therapeutic range is 2.0 - 4.0.

The following may affect Warfarin therapy: barbiturates, oral contraceptives, griseofulvin, rifampicin, carbamazepine, vitamin K, chloramphenicol, cimetidine, cotrimoxazole, acetylsalicylic acid, erythromycin and alcohol.

Use Vitamin K for Warfarin over dose.

HEPARIN: To be given by physicians/haematologists only.

BLOOD TRANSFUSION GUIDELINES

- Ensure need is absolute.
- Use in anaemic heart failure.
- HB less than 4 g/dl in malaria anaemia.
- Use in shock 2^o severe haemorrhage and as listed above
Screen all blood for HIV.

CHAPTER FIFTEEN

RHEUMATOLOGICAL DISEASES

RHEUMATOLOGICAL DISEASES

This covers disorders of connective tissue, joints and bones. Patients suffering from one of these diseases present with pain and stiffness affecting one or more parts of the musculoskeletal system. For convenience they are classified into four groups:

- I. Inflammatory e.g. rheumatoid and autoimmune
- II. Infective arthritis
- III. Metabolic e.g. gout.
- IV. Degenerative e.g. osteoarthritis.

I. INFLAMMATORY ARTHRITIS

a. Rheumatoid arthritis

This is a chronic inflammatory, destructive and deforming arthritis usually affecting more than one joint. The pattern of joint involvement is characteristically symmetrical, affecting mainly the peripheral joints.

Symptoms & signs

Gradual onset of pain, stiffness and swelling of peripheral joints. The pain and stiffness are worse first thing in the morning and improve during the day. Pain and stiffness move from one joint to another. Later on the disease may affect the heart, lungs, eyes, blood and neurological systems.

Investigations: Rheumatoid factor is usually positive in 70% of cases.

Treatment

This is mainly symptom relief, the suppression of active and progressive disease and the maintenance of function in affected joints. Admission is advised when widespread active polyarthritis is associated with systemic symptoms.

Always start with the cheapest unless these are contraindicated. Non-steroidal anti-inflammatory drugs (NSAIDs) are commonly used.

	Acetylsalicylic acid	900-1200 mg 4 times daily
or	Indomethacin	25-100 mg 3 times daily
or	Ibuprofen	200-400 mg 4 times daily
or	Naproxen	250 mg morning & 500 mg at night
or	Diclofenac	50-150mg in 2-3 divided doses daily

Local measures: Rest splints.

Intra-articular injection of steroids (specialist care).

If the above measures fail, refer patients for specialist care.

b. Spondyloarthritis.

This constitutes a group of arthritis in which the rheumatoid factor is characteristically negative and include: Ankylosing spondylitis; Reiter's syndrome, psoriatic arthritis and juvenile chronic arthritis. The common features in this group are an asymmetrical inflammatory arthritis affecting a single or few joints, inflammation of the sacro-iliac joints, anterior uveitis (eye involvement) and involvement of tendons. These should be referred to the specialist.

Ankylosing spondylitis

Signs & symptoms: Low back pain and stiffness radiating to the buttocks & thighs, and worse in the morning and following activity.

Treatment:

- Use **NSAID** as for rheumatoid arthritis.
- Postural and breathing exercises.
- Local **corticosteroid** injections may relief pain from tendons.
- Hip disease may require surgery and hip replacement.

Treatment:

- NSAID.
- Gold, chloroquine and other drugs as recommended by specialists for severe cases.
- Coal tar for Psoriasis if present.

C. AUTOIMMUNE ARTHRITIS

Systemic Lupus Erythematosus (SLE)

This is a multi-system connective tissue disorder characterised by the presence of auto-antibodies, immune complexes circulating in the blood with associated tissue damage. It is rare in The Gambia.

Signs & symptoms

Arthritis or arthralgia are common and are frequently accompanied by tiredness, anaemia and weakness. The presence of a “butterfly” rash across the face helps to make the diagnosis.

Investigations: Anti-nuclear antibody (ANF) is present in over 90% of cases.

Treatment:

- **Prednisolone** 40-60 mg daily. Withdraw slowly with remission of disease.
- NSAID for arthritis.
- Immunosuppressive drugs by specialists.

II. INFECTIVE ARTHRITIS

Septic arthritis can accompany septicaemia. *H. Influenzae*, *staphylococcal streptococcal* and salmonella are known causative agents. But other organisms such as gonococci, pneumococci, meningococci, *E. Coli*, pseudomonas and proteus can also cause septic arthritis.

Signs & symptoms:

- Abrupt onset.
- Severe pain and swelling of single joint.
- Swinging fever.
- Severe weakness.

Investigations:

Blood culture.

Aspirate and culture fluid from joint.

Treatment:

- Appropriate antibiotics.
- NSAID.

Also use NSAID for post-infective arthritis.

III. METABOLIC ARTHRITIS

GOUT

This is a disease with a number of disorders in which high urate salts from body fluids give rise to arthritis, bursitis, tenosynovitis, cellulitis, tophaceous deposits, kidney stones and renal disease.

Signs & symptoms

The big toe is the site of the first attack in over 70% of cases, but all other joints could be the first site. Onset may be insidious or sudden. The affected joint is hot, red and swollen and is excruciatingly painful and tender.

Investigations:

The serum uric acid is usually raised.

Treatment

- **NSAID** are the agents of choice.
- **Colchicine** 1 mg stat followed by 0.5 mg every two hours relieves acute attacks fast.
- **Allopurinol** 300 mg once a day after the acute phase.

IV. DEGENERATIVE

Progressive systemic diseases (Scleroderma)

It is a generalised disorder of connective tissue with fibrosis in the skin and internal organs.

Symptoms & signs

Sausage shaped spindled fingers. Shiny thickened skin with atrophy and ulceration of finger tips in later stages.

Treatment

Steroids may assist in providing symptomatic relief.

Polymyositis and Dermatomyositis

Muscle weakness and inflammatory changes in muscle and skin are the predominant features. Refer suspected cases to specialist.

Osteoarthritis

This is the end result of a variety of patterns of joint failure as a result of ageing, trauma and obesity. There is degeneration of articular cartilage and connective tissue taking place at the same time.

Symptoms & signs:

The joints of the spine, hips and knees are most commonly involved. Movement in these joints become progressively limited. Pain is intermittent and relieved by rest. Later on microfractures may take place.

Treatment:

- Rest and avoidance of trauma.
- NSAID for pain.
- Surgery.
- Weight loss if obese

CHAPTER SIXTEEN

BONE; JOINTS AND SOFT TISSUE INFECTION IN ADULTS

BONE; JOINTS AND SOFT TISSUE INFECTION IN ADULTS

I. CELLULITIS

Signs & symptoms

Diffuse, tender swelling of soft tissue, not fluctuating, fever very common

Causative agent: Streptococci and others

MANAGEMENT

Adults & Children : Rest the limb

ADULTS

- Procaine Penicillin** inj. : 2 Million Units i.m for 5 days
- or **Erythromycin** 250mg : 2 tablets four times daily for 5 days
- or **Ampicillin** 250mg : 2 capsules four times daily for 5 days
- or **Cloxacillin** 250mg : 2 capsules four times daily for 5 days

CHILDREN

- Procaine Penicillin** 100 000 U/kg i.m. for 5 days
- or **Benzyl Penicillin** 50 000 U/kg i.m. 6 hrly
followed by **Procaine Penicillin** daily
- or **Erythromycin** 25mg/kg/dose four times a day for 5 days
- or **Ampicillin** 25mg/kg dose four times a day for 5 days

II. SOFT TISSUE ABSCESS: *SURGICAL DRAINAGE VITAL!*

Antibiotics needed if:

- hands, feet or face involved
- multiple abscesses
- fever and malaise

MANAGEMENT IN ADULTS :

Cloxacillin 250mg : 2 capsules four times daily for 5 days
or **Erythromycin** 250mg : 2 tabs four times daily for 5 days
or **Metronidazole** if perineal : 2 tabs four times daily for 5 days

FOR RE-OCCURRING ABSCESES CHECK FOR DIABETES, IMMUNOSUPPRESSION OR HIV

MANAGEMENT IN CHILDREN:

Cloxacillin 50-100mg/kg/day in 4 divided doses
with or without **Procaine Penicillin** 100 000 U/kg im for five days
or **Erythromycin** 40mg/kg day in divided doses
or **Ampicillin** 100mg/kg/day in divided doses

III. SEPTIC ARTHRITIS:

Swollen and tender joint, limited range of motion, usually single joints

Refer to Major Health Centre or Hospital

Causative agents: Staphylococcus, Streptococci, Gonococcus
Monarthritis of the knee

DIAGNOSIS: Needle aspiration, Gram and Zinc stain and Culture of joint aspirate, in children blood culture, often positive

IN CHILDREN: Staphylococcus, H.influenza, Strep. Enterococcus
If POSSIBLE: X-RAY

Treatment : Needle Aspirate, preferably by specialist: SURGERY
NO SURGICAL DRAINAGE if TB SUSPECTED

Adults: **Amoxicillin/ Cloxacillin** over 3 weeks
or **Chloramphenicol** especially if SS disease present
or **Erythromycin** 500mg four times daily, if GO is suspected
SURGICAL DRAINAGE

Alternative: Cephalosporines, Clindamycin or Lincomycin
Start treatment and refer.

IV. ACUTE OSTEOMYELITIS

Signs & Symptoms

Fever, malaise, tender swollen limb

Causative Agent: Staph. aureus, Haem. Infl. B,(esp. in children), Enterobacterias

X-ray if available

TREATMENT: Antibiotics and refer

ANTIBIOTICS best according to sensitivity pattern

Children:

Cloxacillin 100mg/kg/day in 4 divided doses for 3 weeks

Ampicillin 100mg/kg/day in 4 divided doses for 3 weeks

Alternatives : Clindamycin, Cephalosporins

Adults:

Ampicillin/ Cloxacillin for 3 weeks

or **Chloramphenicol** especially in sickle cell disease

Alternative: Clindamycin, Cephalosporins, Ciprofloxacin

V. ACUTE OSTEOMYELITIS IN SICKLE CELL DISEASE

Causative agent: often Salmonella, but also Staphylococcus a.o.

MANAGEMENT

Chloramphenicol 100mg/kg/day in 4 divided doses for 2 weeks

or **Ampicillin/Cloxacillin** as above if Salmonella is ruled out

CHAPTER SEVENTEEN

MISCELLANEOUS CONDITIONS

MISCELLANEOUS CONDITIONS

I. PAIN CONTROL

A. MILD TO MODERATE PAIN

Paracetamol:

Adults : 500mg - 1g 4 to 6 hourly
 route: oral
 via naso-gastric tube
 suppository

Child 10-15mg/kg dose

Acetylsalicylic acid: 300mg - 600mg 4 to 6 hourly
 route: oral (NB! avoid in patients with a history
 suggestive of gastritis)

NB: Avoid use in children if possible

Dihydrocodeine (DF118) 30-60mg, 3-4 times daily

B. SEVERE PAIN

NARCOTIC ANALGESICS: CONTROLLED DRUGS

Morphine 10-15mg 4-6 hourly
 route: intramuscular
 oral

Pethidine 50 -100mg 4-6 hourly
 route : intramuscular
 oral

Particularly useful in renal and biliary colic. Also in patients with respiratory depression and those with severe pruritus after morphine). Avoid narcotic analgesics in epileptics and patients on MAOI

C. ACUTE PAIN

URGENT PAIN RELIEF

Use opiates for severe pain
Use paracetamol, combination analgesic or NSAID for mild pain

PAIN IN TERMINALLY ILL

Use combination tablets but do not hesitate to use opiates as often as required

OPIOID OVERDOSE

Occurs when dosage is excessive
Patient is drowsy with pinpoint pupils
Respiratory depression with low respiratory rate.

TREATMENT:

- Stop opiates
- Give Naloxone i.v. up to 10mg slowly
- Give oxygen by mask
- Observe patients as Naloxone's action is shorter than opiates

II. SEPTICAEMIA IN CHILDREN

SUSPECT SEPTICAEMIA in any severely ill child, with signs of shock. Fever is usually present, but may not be present in a malnourished child.

Malaria should always be excluded.

Common bacteria found in bloodcultures:

Strep.Pneumonia: especially with severe Lower Respiratory Infections or Meningitis or older sicklers, nephrotic syndrome

Salmonella: especially in sicklers (may have accompanying bone lesions), children with severe anaemia after Malaria
Pyrexia of Undetermined Origin (PUO) with drowsiness & abdominal symptoms

Staphylococcus: Skin lesions, Bone lesions in non sicklers, Pneumonia
Pyomyositis, other abscesses

Haemophilus: Infants with pneumonia, meningitis, or septic arthritis

Gram negative Sepsis: very often Pyrexia of Undetermined Origin only, check urine!

Meningococcal: Epidemics and often fatal.

Epidemic meningitis, urgent notification required.

Suspect in particular if purpura seen. In the absence of a blood culture result the management will depend on the clinical picture:

Initial treatment should be either:

1. **Chloramphenicol** 100mg/kg/day i.v.(in 4 doses) in the following cases:
Typhoid, Sickler, Severe Anaemia, severe malnutrition, meningitis, post malaria,

or

2. **Ampicillin** 100mg/kg/24 hrs in 4 doses i.v./i.m.
and **Gentamicin** 5mg/kg in 2 doses i.m.
in Gram negative sepsis, urinary septicaemia

If Staphylococci suspected, use;

3. **Cloxacillin** 100mg/kg in 4 doses i.v/i.m.

In endemic meningitis

4. **Benzyl Penicillin** 100, 000 IU/kg 6 hrly i.v./i.m.
or Long -acting **Chloramphenicol**

III. MANAGEMENT OF ANTHRAX

Anthrax, especially cutaneous anthrax is a common condition in some parts of the Gambia, especially in the Foni's. It occurs mainly in the late dry season, but also at other times of the year.

CAUSE: *Bacillus anthracis*

spores live in contaminated sand for a long time
infection often occurred after slaughtering of infected animals. (cows)

Signs: eschar with a central black necrosis and oedema of the affected site.
(oedema can be very severe)

Treatment: **Procaine Penicillin** 500,000 IU /kg / day for 5 - 7 days
NO SURGICAL INTERVENTION or ASPIRATION

Systemic Anthrax: very rare but very severe

Signs: Shock, DIC, usually small skin lesion with very little swelling.

Treatment: Adults : I.V. Penicillin 2 MU 4 hourly
Children : I.V. Penicillin 100 000 U/kg every 6 hours)
Fresh blood transfusion if necessary
Intensive care

IV. DOG BITE

Clinical Recognition

The patient presents with a bite wound, or history of exposure to dog saliva on broken skin or intact mucosa. Exposure is considered major if it involves licks of mucosa or multiple bites or bites on the face, head, neck or fingers. Minor exposure involves licks of skin, scratches or abrasions and bites of covered areas of arms, trunk and legs.

The circumstances of the bite (whether provoked or not), recent behaviour of the dog and its well-being over the ten days following the bite are other key aspects to note in the evaluation and management of dog bites.

Management

The medical care of dog bites falls under the following areas:

1. Correct cleaning of the bite wound
2. Prevention of secondary bacterial infection and tetanus
3. Specific post-exposure anti-rabies immunization
4. Management of the ultimate complication of clinical rabies.

1. Correct cleaning of the bite wound

This is effective in killing rabies virus and is therefore of great importance.

- Scrub with soap and plenty of water (preferably under a running tap) for at least five minutes.
- Remove foreign material, damaged tissue and scabs.
- Rinse with plenty plain water/running tap.
- Liberally apply alcohol, iodine or quaternary ammonium antiseptics (e.g. **Chlorhexidine**).
- Major bites should be further explored, debrided and irrigated with 0.9% saline in hospital, if necessary under a local or general anaesthetic. In all cases, wound suturing should be avoided or at least delayed.

2. Prevention of secondary bacterial infection and tetanus

Antibiotics are given to cover potential pathogens. **Cotrimoxazole** 480mg two tablets twice daily is adequate for most adult cases. For multiple, deep or extensive bites, Augmentin/metronidazole or penicillin/gentamicin/metronidazole may be used.

In the previously immunized person, a booster dose of tetanus toxoid (0.5ml IM) is given at the time of injury. Unimmunised persons should be given tetanus toxoid in three doses by intramuscular injection, six weeks apart.

3. Specific post-exposure antirabies immunization

If the biting dog is alive, it should be kept under observation for ten days. If the dog has been killed, then attempts to obtain a brain biopsy for diagnostic purposes should be made. These are currently not routinely available and therefore cannot help guide initial specific prophylaxis. Therefore, in all minor and major dog bites, antirabies vaccine should be started immediately and this can be stopped if the biting animal remains healthy for ten days. Additionally, equine or human rabies immune globulin (40IU and 20IU per kg intradermally respectively after a test dose) is recommended

for major bites, although it is very expensive, carries risk of anaphylaxis and should only be used at the start of active immunization with rabies vaccine.

Currently, the Human Diploid Cell Rabies Vaccine (HDCRV), is locally available. **The lyophilized vaccine is reconstituted immediately before use and 1ml given by intramuscular injection. Five 1ml doses are given on days 0, 3, 7, 14 and 30. 'Days' refers to days after the dog bite.**

Alternative immunization

The multiple-site intradermal method utilizing human diploid cell vaccine (HDCV) is effective, has a wide margin of safety and is economical (a 60% reduction of the dose of the intramuscular regimen).

Day 0: 0.1ml intradermally at eight sites (right and left deltoid, scapular, thighs and lower abdominal areas) using the whole 1 ml ampoule.

Day 7: 0.1ml intradermally at four sites (deltoid and thighs)

Day 28 and 91: 0.1ml intradermally at one site (deltoid)

Other alternative vaccines of choice include the Purified Vero Cell Rabies Vaccine (PVRV) and the Purified Chick Embryo Cell Vaccine (PCEC). Five doses (0.5ml for PVRV and 1ml for PCEC) are given by the same route and on the same days as above.

Hypersensitivity reactions to rabies vaccine are uncommon and are often mild and transient. However, adrenaline, antihistamines and corticosteroids should be available to combat the rare case of serious reaction.

4. Management of the ultimate complications of Clinical rabies

Adherence to the guidelines has been shown to reduce the risk of clinical rabies from potential rabid bites from 35-77% to near zero. The incubation period is 20-90 days in 75% of cases. Prodromal symptoms include itching, pain or paraesthesiae at the site of the healed bite wound, followed by a variety of non-specific symptoms such as fever, lethargy, general body pains, irritability, photophobia and chills.

Most cases subsequently develop brainstem encephalitis (furious rabies) with hydrophobia, cardio-respiratory and autonomic instability. A third of cases will die during a hydrophobic spasm within the first few days and the rest lapse into coma and generalized flaccid paralysis and rarely survive more than one week. Less than one fifth of cases develop dumb rabies, with a flaccid ascending paralysis. Worldwide, there are only four known rabies survivors, all requiring protracted intensive care management with mechanical ventilation.

Patients with rabies should be:

- Kept in a quiet, semi-dark room and barrier-nursed
- Given heavy sedation such as with intravenous or per-rectal diazepam or phenobarbitone, to control and minimize hydrophobic spasms
- Given analgesia for pain and terror such as with pethidine 50-100mg IM 4 hourly.

V. SNAKE BITE

Clinical Recognition

Initial diagnosis often rests on history alone as fang bites are often invisible. The culprit snake is often not available and the distinction between venomous and non-venomous species uncertain. Therefore all patients with snakebite must be assessed carefully.

First Aid

Do not

- Make cuts at the site of the bite
- Attempt to suck venom out of the wound
- Apply ice or potassium permanganate to the bitten parts
- Apply tourniquets except for definite bites by dangerously neurotoxic cobras or mambas: in this case release tourniquet every 30 minutes for 30 seconds and on no account should a tourniquet be applied for more than 2 hours.
- Give antivenom unless indicated

Do

- Reassure patient and give paracetamol or pethidine for pain/anxiety.
- Immobilise bitten limb with a splint or sling
- Transport patient to the nearest hospital or health centre comfortably and passively.
- Give 0.1% adrenaline (0.5ml for adults, 0.01ml/kg for children) subcutaneous for shock, respiratory distress or angioedema.

Hospital Management

For convenience, this is outlined under the following headings:

1. Clinical assessment
2. Antivenom administration
3. Prevention of secondary infection
4. Supportive therapy
5. Surgical intervention

1. Clinical Assessment

Since the specie of biting snake is often unknown and symptoms and signs of envenomation take a while to develop, all patients with snakebite should ideally be admitted for 24 hours for observation. In particular, they should be observed for local pain, swelling, blisters, gangrene or tender lymph nodes, bleeding in the tooth sockets, swings in the blood pressure, respiratory distress, ptosis (which is the earliest sign of neurotoxicity) and general neurological state.

Supportive tests include the simple whole blood clotting test, urea and electrolytes, urinary dipstick and microscopy, FBC and the ECG. In the clotting test, whole blood is put in a clean dry glass tube and kept for 20 minutes. Failure to clot after this time is an indication of venom-induced defibrination.

It is never too late to start antivenom therapy in all cases of snakebite!

2. Antivenom Administration

Indications:

1. Local swelling involving more than half of the bitten limb or extensive blistering or bruising.
2. Impaired consciousness
3. Neurotoxic signs with impaired ventilation
4. Systemic bleeding/blood which does not clot
5. Hypotension/shock
6. Evidence of intravascular haemolysis
7. Renal failure
8. Rhabdomyolysis

Preparation for acute anaphylactic reaction

Always have 0.5ml 0.1% adrenaline drawn up in a syringe before giving antivenom. In case of anaphylactic reactions (intense itch, urticaria, cough, asthma, angioedema, tachycardia, fever, vomiting, low blood pressure and collapse) give the adrenaline immediately by subcutaneous injection. Antihistamines such as chlorpheniramine maleate 10mg iv and hydrocortisone 100mg iv are also indicated. Adrenaline is repeated every 10 minutes if there is no initial response.

Antivenom: type, dose and administration

The available antivenom serum is the purified polyvalent equine antivenom, and comes in 10ml ampoules. The antiserum is appropriate for patients bitten by Bitis, Echis, Naja and Dendroaspis (mambas), types of snakes, which are most frequently encountered in sub-Saharan Africa, including The Gambia. If the ampoule is clear then the antivenom is still potent even if the expiry date is passed.

A test dose is applied thus: 0.1ml of antivenom is injected subcutaneously. If no anaphylactic reactions after 15 minutes, apply 0.25ml antivenom subcutaneous and, if no adverse reactions after another 15 minutes, administer the rest of the dose as described below.

The initial dose is 40ml (4 ampoules) irrespective of age. This is diluted in 5ml/kg of isotonic saline and given by intravenous infusion (drip) over one hour. If there are reactions during administration, the antivenom drip may be temporarily stopped and the above measures for anaphylaxis instituted. Clinical response is usually evident within 15-30 minutes. The full dose of antivenom can be repeated as necessary if the initial response is poor.

3. Prevention of secondary infection

Tetanus prophylaxis should be given. With local bruising, blistering and swelling, and in those with systemic envenoming broad-spectrum antibiotic cover should be applied as in case of dog bites.

4. Other Supportive Therapy

This will depend on the attendant complications. Thus transfusion with fresh whole blood, intravenous fluids, iv hydrocortisone, diuretics, manual ventilation, neostigmine etc may be needed and appropriately deployed by the specialist physician.

5. Surgical Intervention

Early surgical consultation is particularly warranted in cases with extensive tissue destruction, intense limb pain or loss of sensation. Early surgical intervention may include debridement, fasciotomy tracheotomy, or even amputation. Continuing care of the severely damaged limb, including plastic reconstruction all require expert surgical care, which must always be sought early.

VI. MEASLES

Measles in an acute highly transmissible viral infection which is particularly severe in West Africa. It is transmitted by droplets and the clinical features of the disease results from infection of the skin, mucous membranes and the respiratory tract. There are many reasons for the increase in severity of measles in West Africa. They include young age of infection, severe malnutrition and overcrowding. Coverage of measles immunization has increased to 80% or more in The Gambia but epidemics of the disease still occur at 3 - 4 year intervals. Vaccinated children sometimes get measles but in these cases the disease is mild and the mortality is low.

Clinical Features: After an incubation period of about 10 days there is fever with a runny nose, red eyes and red mucosa of the mouth. At this stage the child is highly infection.

About tow weeks after exposure the rash appears. Small red sports appear on the forehead and neck and then spreads over a period of 3 - 4 days to involve the trunk and then the limbs. In severe cases the rash is often red, confluent, raised and extensive. Later the rash blackens and peeling of the skin occurs. There is cough, difficulty in breathing and signs of pneumonia. Conjunctivitis, especially in the vitamin A deficient child, can be severe and there may be much diarrhoea, which causes dehydration and malabsorption. The child has a very sore mouth, loses his appetite and may refuse to feed.

In the next week the child may develop secondary infections because measles causes damage to the immune system. At this time bacterial pneumonia is common but there may be infection of the mouth, eye, skin of gut.

Management and Treatment: The following signs indicate that measles is severe and that the child should be admitted to hospital or health centre: a widespread dark

deep red rash, signs of laryngitis, marked dehydration, blood in the stool or more than 5 stools per day, convulsion or loss of consciousness, severe secondary pneumonia, corneal ulceration or severe ulceration of the mouth and skin.

Hydrate the child with ORS or if necessary with intravenous fluids (see chapter 3). If the child has pneumonia or bronchopneumonia use:

Cotrimoxazole 120mg tabs

Under 1 year: 1 tab twice daily for 5 days

Between 1 and 4 years: 2 tabs twice daily for 5 days

Or

Amoxicillin: 10-20mgs/kg/dose hourly for 5 days

All children should be given **Vitamin A**: 100,000 IU for children less than 1 year of age. 200,000 IU for older children.

If eye signs of Vitamin A deficiency are present the initial dose should be repeated next day and again 1 - 4 weeks later. Apply antibiotics by mouth or by injection.

Prevention and Control: Live measles vaccine should be given at 9 months of age and the coverage kept as high as possible. Some people say that measles can be eradicated by higher measles vaccination coverage and mass immunization campaigns and such an approach have been having success in South America.

CHAPTER NINETEEN

IMMUNIZATIONS

IMMUNIZATIONS

Information on the Immunization services especially the cold chain system maintenance and monitoring, Vaccine Vial Monitors (VVMs) in particular and Disease surveillance can be found in the revised EPI manual.

Always remember to reconstitute all freeze-dried vaccines with the correct diluents.

I. VACCINES USED AND AGAINST WHICH DISEASES

BCG	:	Tuberculosis
DPT (triple antigen)	:	Diphtheria, Pertussis and Tetanus
OPV (Oral Polio Vaccine)	:	Poliomyelitis
Tetanus Toxiod	:	Both Neonatal and adult tetanus
Hepatitis B Vaccine	:	Hepatitis B infection.
Yellow Fever Vaccine	:	Yellow Fever
Haemophilus Influenza	:	Haemophilus diseases
Type B (HIB) Vaccine	:	Meningitis and Pneumonia.

The Gambian EPI adopts/modifies the EPI Global Advisory Group's recommendation to Immunize all children with EPI antigens in line with standard schedules. This includes individuals with the asymptomatic HIV infection; however, individuals with symptomatic AIDs should **not** be given BCG.

Generally live vaccines should not be given to immuno-suppressed individuals, but since the risk of Measles, Yellow Fever, Polio and Haemophilus Influenza Type B in unvaccinated children is high, whilst the risk from those vaccines even in the case of symptomatic HIV infections is low. They are therefore administered to all eligible individuals in the Gambia.

II. INFANT IMMUNIZATION SCHEDULE: PRIMARY SERIES

<u>DISEASE</u>	<u>VACCINE</u>	<u>AGE OF IMMUNIZATION</u>
Tuberculosis Polio 0 Hepatitis B	BCG + POLIO 0 & HEP B	AT BIRTH
Diphtheria Pertussis Tetanus Haemophilus Influenza Type B (HIB) Polio 1 Hepatitis B	DPT 1 + HIB 1 + POLIO 1 + HEP B2	2 MONTHS
Diphtheria Pertussis Tetanus Haemophilus Influenza Type B	DPT 2 + HIB 2 + POLIO 2	3 MONTHS
Diphtheria Pertussis Tetanus Haemophilus Influenza Type B Polio Hepatitis B	DPT 3 + HIB 3 + POLIO 3 + HEP B3	4 MONTHS
Measles Yellow Fever Polio 4		9 MONTHS

BOOSTER IMMUNIZATIONS

- Give Oral Polio Booster at the age of 18 months
- Give DPT Booster one year after DPT 3

NB: Always remember to give all immunizations at the right age and right interval.

III. TETANUS TOXOID IMMUNIZATION

FOR ALL WOMEN OF CHILD BEARING AGE.

<u>WHEN TO GIVE</u>	<u>PERCENTAGE OF PROTECTION</u>	<u>DURATION OF PROTECTION</u>
At first contact or as early as possible during pregnancy	None	None
At least four (4) weeks after TT1	80%	3 years
At least six (6) months after TT2 or during subsequent pregnancy	95%	5 years
At least one (1) year after TT3 or during subsequent Pregnancy	99%	10 years
At least one (1) after TT4 or during subsequent pregnancy	99%	for life

CHAPTER TWENTY

POISONING

POISONING

Poisons are chemical substances which on entering the body by whatever route, e.g. through ingestion, inhalation, or absorption through the skin, produces harmful effects. These effects may be in the form of damage to the tissues or as a disturbance of the functions of the body.

Drugs in the home are potential sources of poisoning, which may be as a result of overdosage due to accidental ingestion particularly with children.

Drugs are poisons and the amount administered or taken determines whether a drug achieves a therapeutic objective or produces a fatal effect.

Our environment contains many chemicals that are toxic to man and animals. These chemicals may be present in the atmosphere as air pollutants, in water as contaminants, in food as residues or contaminants, or in the soil as contaminants. Some of these potential hazardous substances are normally found in the home as drugs, household cooking materials like kerosene, cosmetics like shampoo, hair dyes and as detergents and pesticides. These cause poisoning, particularly among children.

I. MANAGEMENT OF ACUTE POISONING

A. HOME MEASURES

Preventive measures - Advice to the public

- (I) Keeping drugs out of the reach of children.
- (ii) Keeping all household chemicals e.g. detergents, insecticides, petroleum products, bleaches, polish, rodenticides etc away from food stuff and under lock and key
- (iii) Ensuring that the prescribed and over-the-counter medicines are taken as directed
- (iv) Prescribed medicines, which are not used, should be safely destroyed.

Liquids - should be diluted with large volume of water and then poured into toilets.

Solid - e.g. Tablets Capsules and powders could be thrown into pit latrines.

Contamination of the Skin

When a poisonous substance pours on the skin, drench the skin with water and remove any clothing while applying water on the skin. Then clean the skin with soap and water.

Contamination of the Eye

Wash the contaminated eye with running water for about 15 minutes. You may need to hold the lids apart for a more effective washing of the eye.

After the emergency management at home, the patient should be taken to the nearest health facility for treatment if it is required.

B. EMERGENCY TREATMENT OF ACUTE POISONING

Treatment of acute poisoning must be carried out in a hospital by those who have the training. This is necessary even when the patient appears well particularly if the poison has delayed actions (e.g.) Salicylates, tricyclic antidepressants, paracetamol, iron and atropine) or is a sustained release tablet or capsule.

The treatment aims at maintaining the vital functions through supportive care and treatment of Symptoms, removing the poison and neutralizing the effect of the poison by administering an antidote where available.

Maintenance of supportive care

Maintenance of supportive care is most important in the treatment of acute poisoning with the maintenance of respiration and circulation being priorities.

Vital signs to be monitored in a continuous basis are:

- Respiration
- Blood pressure
- Pulse rate
- Temperature

C. REMOVAL OF THE POISON

Gastro-intestinal tract

Ingestion is the most common cause of poisoning and therefore removal of the poison from the Gastro-intestinal tract becomes the most important step in the treatment of ingested poison.

The dangers of attempting to empty the stomach have to be balanced against the toxicity of the ingested poison, as assessed by the quantity ingested, the inherent toxicity of the poison, and the time since ingestion.

Gastric emptying is clearly unnecessary if the risk of toxicity is small or if the patient presents too late at the health facility.

Emesis is contraindicated when the ingested substance is a strong acid or alkali as this may worsen the gastric perforation and necrosis of the oesophagus.

Ipecac Syrup or paediatric ipecacuanha emetic mixture (15 to 30 ml) administered orally is the drug of choice for inducing emesis.

Activated Charcoal

Activated charcoal is very useful in the decontamination of the Gastro-intestinal Tract as it absorbs many drugs and chemicals and thus prevents the absorption and toxicity of these substances. It is administered as a mixture (50g or more in a glass of water)

Cathartics

Purgation is used to induce the removal of unabsorbed poisons from the Gastro-intestinal Tract by enhancing their passage through it - example of Cathartic is Magnesium Sulphate (Epsom salt)

POISON

ANTIDOTE

Acids

Weak alkali e.g.
Magnesium hydroxide.

Alkali

Weak acids e.g. Lemon juice

Detergent

Soap.

Iron

Sodium bicarbonate

Other poison known
Or unidentified

Activated charcoal
5 - 50g in water.

Carbon monoxide

Oxygen 100% for adults and
children

Opiates (Pethidine,
Morphine & codeine)

Naloxone 0.4 - 2mg IV or IM
To be repeated every 3 minutes.
Children 0.01 mg / kg IV or IM

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