Republic of Kenya

Reversing the Trends
The Second National Health Sector Strategic Plan

CLINICAL MANAGEMENT AND
REFERRAL GUIDELINES
Volume II

Clinical Guidelines for Management and Referral of Common Conditions at Levels 2–3: Primary Care

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Clinical Management and Referral Guidelines – Volume II:
Clinical Guidelines for Management and Referral of Common Conditions at Levels 2–3: Primary Care

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List of Abbreviations

ACT	Artemesinin combination treatment
AGN	Acute glomerulonephritis
AIDS	Acquired immune deficiency syndrome
AMI	Acute myocardial infarction
APH	Antepartum haemorrhage
ART	Anti-retroviral therapy
ARV	Anti-retroviral drug
BBA	Born before arrival
BPE	Benign prostate enlargement
CPD	Cephalopelvic disproportion
CHEW	Community health extension worker
CHW	Community health worker
CPD	Cephalopelvic disproportion
CSOM	Chronic suppurative otitis media
DIC	Disseminated intravascular coagulophy
DOTS	Directly observed therapy, short course
DUB	Dysfunctional uterine bleeding
DVT	Deep vein thrombosis
EFA	Education for All
FFP	Fresh frozen plasma
FP	Family planning
GIT	Gastrointestinal tract
GOK	Government of Kenya
GORD	Gastro-oesophageal reflux disease
HBC	Home-based care
HIV	Human immunodeficiency virus
HZO	Herpes zoster ophthalmicus
IEC	Information, education and communication
ITN	Insecticide treated net
IUCD	Intrauterine contraceptive device
JRA	Juvenile rheumatoid arthritis
KEPH	Kenya Essential Package for Health

KEPI	Kenyan Expanded Programme of Immunization
KMC	Kangaroo mother care
LLIN	Long-lasting insecticidal net
MDGs	Millennium Development Goals
MDR	Multiple drug resistant (TB)
MOH	Ministry of Health
MOMS	Ministry of Medical Services
MOPHS	Ministry of Public Health and Sanitation
MVA	Manual vacuum aspiration
NGI	Non-gonococcal infection
NHSSP II	Second National Health Sector Strategic Plan 2005–2010
OSCC	Oral squamous cell carcinoma
PAC	Post-abortion care
PDA	Patent ductus arteriosus
PEP	Post-exposure prophylaxis
PID	Pelvic inflammatory disease
PLWHA	Person/people living with HIV/AIDS
PMTCT	Prevention of mother to child transmission (of HIV)
PPH	Postpartum haemorrhage
RVF	Recto-vesical fistula
SSSS	Staphylococcal scalded skin syndrome (Ritter's disease)
STI	Sexually transmitted infections
TB	Tuberculosis
TBA	Traditional birth attendant
TMJ	Temperomandibular joint
TOF	Tracheo-oesophageal fistula
TT2	Tetanus toxoid
UNICEF	United Nations Children's Fund
UTI	Urinary tract infections
VCT	Voluntary counselling and testing
VSD	Ventricular septal defect
VVF	Vesico-vaginal fistula
WHO	World Health Organization
WRA	Woman of reproductive age

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Foreword

Following the articulation of the 1994 National Health Policy Framework, the Ministry of Health published the National Drug Policy, the Essential Drug List, and Clinical Guidelines and Referral Strategy. All these are important building blocks of the elaboration of the Kenya Essential Package for Health (KEPH) subsequently mooted in the second National Health Sector Strategic Plan (NHSSP II – 2005–2010). This volume is one of a three-volume set that comprises the latest edition of the Clinical Guidelines.

Intended as neither prescriptive nor restrictive, the guidelines are facilitative, enabling, and foundational. They provide a firm base for the attainment of equity and high standards in health care and the development of rational procurement and use of drugs by all prescribers, dispensers, hospital managers, and patients.

The guidelines are for the use of all clinicians and nurses who have the primary responsibility for diagnosis, management, and referral of outpatients and inpatients. They are also very useful to interns, medical students, clinical officers, pharmacists, and nurses in training – and generally to health professionals working in the clinical setting and especially those in rural health services where it might be the only reference book.

The revision has been widely consultative, incorporating recent advances in disease management and emerging medical challenges of the 21st century. Efforts have been made to include the most recent recommendations of the Ministry of Medical Services (MOMS) and the Ministry of Public Health and Sanitation (MOPHS) with inputs from specialized disease programmes, community health and the World Health Organization (WHO).

On behalf of the Ministry of Medical Services and the Ministry of Public health and Sanitation, many thanks are accorded to WHO, and to all contributors, reviewers, and the editors who have worked so hard to make the third edition of the guidelines a reality. We would like to acknowledge the technical guidance

provided by WHO in compiling these revised clinical and management guidelines, and the financial support for the process from the EC/ACP/WHO partnership USAID-MSH/SPS (Management Sciences for Health/Strengthening Pharmaceutical Systems) on meeting the health targets of the Millennium Development Goals (MDGs).

The regular and consistent use of the guidelines by clinicians, nurses and other health proffessionals countrywide can be expected to improve health care in Kenya and encourage the rational use of available drugs and thus contribute albeit in a modest way towards the realization of Vision 2030 of "creating an enabling environment for the provision of sustainable quality health care that is cost effective and accessible to all Kenyans".

Dr. Francis M. Kimani
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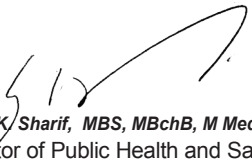

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Preface

The clinical guidelines the sector has been utilizing were developed in 2002. Since then, the sector has put in place a strategy to respond to declining trends in health impact observed over the previous decade. This updated edition of the guidelines represents part of that strategy, in particular by taking cognisance of the changes introduced by the Kenya Essential Package for Health (KEPH), with its emphasis on distinct levels of care – including the community – to be provided to defined cohorts of the human life-cycle. The new edition thus addresses key shortcomings in the previous versions that limited the ability of clinicians to provide a comprehensive package of effective health care.

Specifically, the guidelines have been updated in relation to:

- Defining care protocols by level of service delivery, recognizing the fact that the skills and facilities for care differ at the different levels of health care.
- Making available a clear, separate volume for management of conditions at the community level, in recognition of the fact that good health is nurtured – or destroyed – primarily at individual and household levels, rather than at the health facilities.
- Providing greater elaboration of the identification and preparation for referral of clients in case the presenting condition or state doesn't allow for management at the level where the client has presented.
- Updating management protocols to address current existing conditions and potential threats to the health of Kenyans.
- Including a process for monitoring and reviewing the guidelines.

For ease of reference and use, the guidelines are presented in 3 volumes:

- Volume 1: Management Guidelines for Level 1 (Community)
- Volume 2: Management Guidelines for Levels 2 and 3 (Primary Care)
- Volume 3: Management Guidelines for Levels 4–6 (Hospitals)

It is the hope of the sector that these guidelines will serve the users well as a

guide for the appropriate care expected to be delivered at each respective level in the health system, thus facilitating the realization of the Kenya Essential Package for Health at all levels. Any information that could be of use in improving the management protocols is welcome, and can be provided directly to the Office of the Director of Medical Services in the Ministry of Medical Services.

Introduction

Kenya's health sector aims to prevent ill health, and where this cannot be done, to address the medical and social implications of the resulting ill health. Clinical management relates to this by ensuring efficient and effective management of the implications of ill health. It complements the public health services by ensuring that a specified quality of essential medical care is made available as needed, when needed, and in appropriate amounts.

Rationale for Revision of Clinical Guidelines

The sector last issued revised clinical guidelines in 2002. The guidelines defined management approaches for the key conditions that were expected to be afflicting the Kenyan population at that time. The guidelines had a number of weaknesses, however, including the following:

- The health sector lacked a clear, comprehensive, evidence-based approach to service delivery. Such an approach is important as it provides the overall guidance for the services the sector intends to provide, plus the process for delivering the services.
- The mechanism for monitoring and updating the clinical guidelines was not clear. As a result, the new management protocols that have come up since the guidelines were developed have not been incorporated, such as for avian influenza, management of multi-drug resistant tuberculosis (MDR/XDR TB), use of artemesinin combination treatment (ACT) for management of malaria, use of anti-retroviral drugs (ARVs) in HIV management, non-communicable diseases, and injuries/violence management, among others.
- Guidelines for preparation and management of clients for physical referral were not included.

Besides these more or less innate shortcomings, the clinical guidelines predated the approach to service delivery grounded in the framework of 6 life-cycle cohorts and 6 levels of care, as set out in the second National Health Sector

Strategic Plan ((NHSSP II – 2005–2010).[1] Thus they did not take into consideration the new approach that calls for different capacities and different functions at the different service levels in the country. Significantly, there was no guidance on management of services at the community level, and the lack of a referral framework is a drawback that has become more apparent as the care level approach has become institutionalized. These updated guidelines attempt to address these shortcomings. In addition, they are aligned to the comprehensive multilevel service delivery approach defined by the Essential Package for Health (KEPH).[2]

Comprehensive Service Delivery Approach

The review of the 1st National Health Sector Strategic Plan (NHSSP I) in 2004 highlighted, amongst other issues, evidence of stagnating or downward trends in health indicators, especially in the key areas of maternal, newborn, and child health. To respond to this worrying trend, the health sector in Kenya initiated an accelerated reform process to halt, and then reverse, this trend.

The reform process is enshrined in NHSSP II, which states the midterm goal of the health sector as "To reduce health inequalities and reverse the downward trends in health-related outcome and impact indicators". The plan's defined strategic objectives are to:

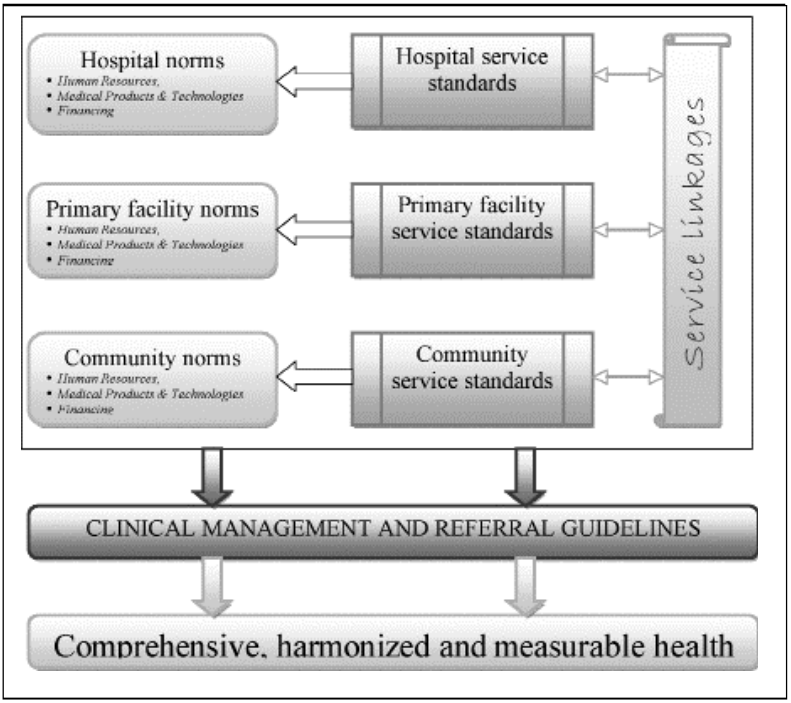
- Increase equitable access to health services;
- Improve the quality and the responsiveness of services in the sector;
- Improve the efficiency and effectiveness of service delivery;
- Foster partnerships in improving health and delivering services; and
- Improve financing of the health sector.

As part of the reform process, the sector elaborated clear operational approaches to enable it to achieve its strategic objectives, as well as health service norms and standards.[3] Investment plans now guide multi-year investment priorities for different key areas of the sector. [4] The comprehensive service delivery approach is one of these operational approaches (refer to Figure A).

A comprehensive service delivery approach is based on provision of guidance – at community, dispensary/health centre, and hospital levels of care – on services to be provided, service standards to be attained, service inputs (human resource,

[1] Ministry of Health, *Reversing the Trends – The Second National Health Sector Strategic Plan of Kenya: NHSSP II – 2005–2010*, Nairobi, Kenya, 2005.
[2] Ministry of Health, *Reversing the Trends: The Second National Health Sector Strategic Plan of Kenya – The Kenya Essential Package for Health,* Nairobi, Kenya, 2007.
[3] Ministry of Health, *Reversing the Trends: The Second National Health Sector Strategic Plan – Norms and Standards for Health Service Delivery in Kenya,* Nairobi, Kenya, 2006.
[4] *Ministry of Medical Services Strategic Plan 2008–2012,* Ministry of Medical Services, Nairobi, Kenya, July 2008; *Ministry of Public Health and Sanitation Strategic Plan 2008–2012,* Ministry of Public Health and Sanitation, Nairobi, Kenya, December 2008.

Figure A: The comprehensive approach to health care service delivery



infrastructure, equipment) to be applied, and cross linkages of services. This comprehensive approach guides not only the investment priorities for service delivery at the administrative level, but also the form and content of clinical management.

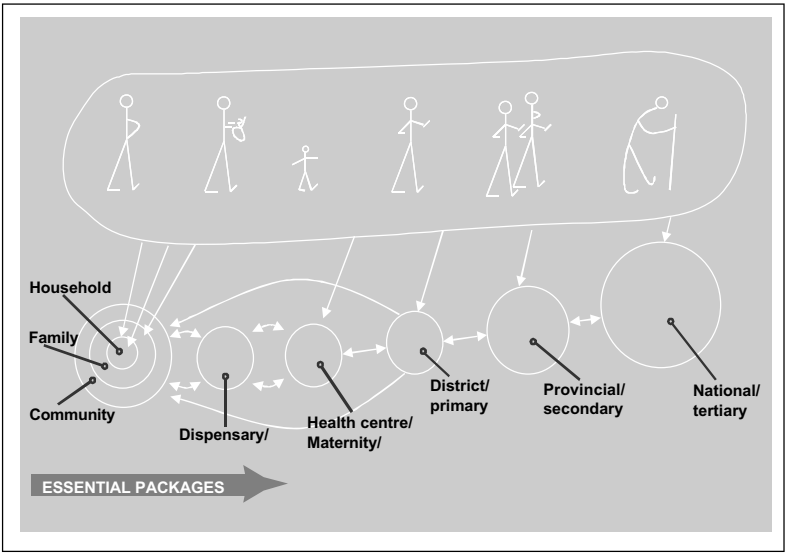
The services to be provided for each level of care are defined in the Kenya KEPH). A particular focus of the package is the community level.[5] The service linkages are defined in the Sector's Referral Strategy. These documents together describe the overall strategic approach for the sector, and are further elaborated.

The Kenya Essential Package for Health

KEPH is a life-cohort based approach to the delivery of health care services. Its main focus is to define the priority services that will ensure a healthy population at 6 distinct levels of the health system – from the community level up to tertiary

[5] Ministry of Health, *Taking the Kenya Essential Package for Health to the Community: A Strategy for the Delivery of Level One Services,* Nairobi, Kenya, 2006.

Figure B: The KEPH system



hospitals – for each of 6 defined life cohorts. As a result, it defines in a comprehensive manner, the services the sector is to prioritize so as to maintain health at all the different stages of life.

The diagram in Figure B illustrates the 6 life-cycle cohorts defined by KEPH: pregnancy and the newborn (up to 2 weeks); early childhood (to 5 years); late childhood (6–12 years); adolescence and youth (13–24 years); adulthood (25–59 years); and the elderly (60+ years). The diagram also illustrates the linkages of the 6 levels of care that KEPH defines:

- Level 1: Community: Village/households/families/individuals
- Level 2: Dispensaries/clinics
- Level 3: Health centres, maternities, nursing homes
- Level 4: Primary hospitals – District and subdistrict hospitals
- Level 5: Secondary hospitals – Provincial hospitals
- Level 6: Tertiary hospitals – National hospitals

The expected services to be provided are described in Table A. The KEPH has the following key characteristics:

- The package puts emphasis on health (rather than disease), on rights (rather than needs), and on community empowerment to exercise their rights.
- It identifies and redefines 6 distinct functional levels of care. The community level is recognized as the first level of care where major decisions are made and interventions are done that have an immediate impact. The focus at the community level is on the promotion of family practices that preserve and promote health.

Table A: KEPH strategic Interventions, by level and life-cycle cohort

Level 1 (Community)	Level 2 (Dispensary/ clinic)	Level 3 (Health centre)	Level 4 (Primary/ district/subdistrict hospital)	Level 5 (Secondary/ provincial hospital)	Level 6 (Tertiary/ national hospital)
Cohort 1: Pregnancy, delivery and newborn (to 2 weeks)					
Equip targeted communities with current knowledge and facilitate appropriate practices and attitudes leading to safe pregnancy and delivery of a healthy newborn	Ensure that health facilities are equipped to provide very basic ANC and refer all deliveries (regardless of risk analysis)	a) Ensure that health centres are equipped to provide basic essential obstetric care b) Enhance health systems support for delivery of quality obstetric and newborn care c) Establish a functional supportive supervision system to ensure quality assurance d) Develop outreach programmes to serve "hard-to-reach" populations	Ensure that facilities are equipped to provide essential comprehensive obstetric care	Ensure that facilities are equipped to provide essential obstetric care	Ensure provision of facilities to adequately manage mothers and newborn referred from lower levels
Cohort 2: Early childhood (0–5 years)					
Equip the community and health care providers with knowledge about the prevention of common childhood diseases and disabilities; and facilitate appropriate practices and attitudes leading to healthy child growth and development	a) Develop an outreach programme to serve "hard-to-reach" populations b) Strengthen the promotion and prevention of common childhood illnesses, impairments, and disabilities c) Strengthen case management and surveillance of common childhood illnesses d) Establish a functional supportive supervision system to ensure quality assurance	a) Strengthen the prevention of common childhood illnesses, impairments, and disabilities b) Strengthen case management & surveillance of common childhood illnesses c) Enhance the health systems support for delivery of quality child health services d) Establish a functional supportive supervision system to ensure quality assurance e) Develop outreach programmes to serve the "hard-to-reach" populations	Ensure availability of facilities to diagnose and appropriately manage sick children	Recognize and appropriately manage a sick child	Ensure provision of facilities to adequately manage children referred from lower levels

Continued

Table A, *continued*

Level 1 (Community)	Level 2 (Dispensary/ clinic)	Level 3 (Health centre)	Level 4 (Primary/ district/subdistrict hospital)	Level 5 (Secondary/ provincial hospital)	Level 6 (Tertiary/ national hospital)
Cohort 3: Late childhood 6–12 years)					
Equip the child with relevant knowledge and skills that promote healthy lifestyle, including psycho-social development	a) Develop an outreach programme to serve hard-to-reach populations b) Strengthen the promotion and prevention of common illnesses, impairments, and disabilities in late childhood c) Strengthen the case management and surveillance of common late childhood illnesses d) Establish a functional supportive supervision system to ensure quality assurance	Facilitate and support caregivers and community in the provision of a safe environment for child survival, growth, and development	a) Ensure that the health team is able to recognize and appropriately manage a sick child and where necessary refer b) Facilitate rehabilitative care for disabilities, and integration of children with disabilities (CWDs)	Strengthen provincial hospitals to diagnose and manage complicated childhood medical and surgical conditions	Ensure provision of facilities to adequately manage children referred from lower levels
Cohort 4: Adolescence and youth (13–24 years)					
Equip the youth with knowledge and life skills, and facilitate creation of a supportive environment to enhance adoption of healthy lifestyles for themselves and the community	Create an enabling environment for young people that discourages harmful practices, encourages psycho-social development, and prevents disease and injuries	Create an enabling environment for young people that discourages harmful practices and prevents disease and injuries	a) Ensure availability and access to quality youth-friendly services to encourage appropriate care seeking amongst the youth b) Ensure provision of rehabilitative services for substance abusers	a) Ensure provision of comprehensive rehabilitative services for youth drug abusers b) Ensure access to quality youth-friendly referral services for management of complicated medical and surgical conditions	Ensure provision of facilities to adequately manage youth referred from lower levels

Continued

Table A, *continued*

Level 1 (Community)	Level 2 (Dispensary/ clinic)	Level 3 (Health centre)	Level 4 (Primary/ district/subdistrict hospital)	Level 5 (Secondary/ provincial hospital)	Level 6 (Tertiary/ national hospital)
Cohort 5: Adulthood (25–59 years)					
Equip adults with knowledge and skills to facilitate creation of a supportive environment to enhance adoption of healthy lifestyles for themselves and the village	Provide information on and encourage utilization of recommended services for disease/injury prevention and facilitate creation of supportive environment to enhance adoption of healthy lifestyle.	Equip health facilities with staff who are able to conduct general medical and reproductive care assessment, disease/injury prevention and refer complicated cases to the district hospital	Ensure accessibility to quality curative services for adults with acute and chronic conditions	Ensure access to quality services for the diagnosis and management of complicated medical and surgical conditions	Ensure provision of facilities to adequately manage seriously ill adults referred from lower levels
Cohort 6: Elderly (60+ years)					
Equip the elderly persons, the community and health care providers with relevant knowledge on common old age diseases, impairments and disabilities in old age; and how to improve quality of life and enhance longevity	a) Provide information on and encourage utilization of recommended services for disease/injury prevention b) Refer difficult cases to the health centre	a) Provide information on and encourage utilization of recommended services for disease/injury prevention b) Refer cases to district hospital	a) Ensure early recognition and appropriate management of acute and chronic illnesses/ injury as per recommended guidelines b) Provide appropriate comprehensive and special rehabilitation to older persons with chronic illnesses and disabilities at all levels	Ensure provision of facilities for the diagnosis and management of severe illnesses in old age	Ensure provision of facilities to adequately manage seriously ill older persons referred from lower levels

- Its overall thrust is on revitalizing health promotion and preventive care at the first 3 KEPH levels.
- It defines health needs at each level of human development – from birth to old age – and identifies comprehensive and cost-effective interventions required at each stage of the human life cycle.
- It recognizes the packages of health care services per level of care to be rendered by both public and private health service providers.

KEPH is expected to improve the quality of services at levels 1–4 so that clients have confidence in these levels of care, thus resulting in increased client utilization of the lower level health facilities. KEPH is also expected to improve the networking of providers and facilities at the different levels of the health system thereby ensuring continuity of care for those who need the services provided at the higher levels of the system.

Sector Norms and Standards

Norms and standards defined to guide the provision of KEPH services are a statement of the human resource, infrastructure, equipment, and financing inputs necessary to ensure efficient and effective delivery of health care services to the population in Kenya. Service delivery standards relate to the expectations of each level of care with regard to service delivery and the types of human resources needed to provide these expectations. Service delivery norms define the quantities of these resource inputs needed to efficiently, effectively, and sustainably offer the service delivery package. These norms and standards are defined on the basis of the following principles:

- ***Units of service delivery:*** The focus is on the function, as opposed to the physical level, as the function may also be provided by a higher level facility.
- ***Equity in access and utilization:*** All inhabitants of the country and its respective districts have equal right not only to access health services, but also to use them equally for equal need.
- ***Relevance and acceptability:*** Health care needs to be rooted in the cultural and social reality of the communities and to include user satisfaction in the health care delivery equation.
- ***Continuity of care:*** Care should be viewed in a continuum, from the start of the illness or the risk episode until its resolution irrespective of the level at which care is sought. This means that a functional referral and counter-referral system should exist to make sure that services are availed.
- ***Integration of care:*** Every contact is used to ensure that a comprehensive set of defined services is made available.
- ***A comprehensive/holistic approach:*** Health services need to consider all the dimensions of the persons and their environment, and maintain a permanent interaction and dialogue with clients.

- ***The involvement of individuals, households, and communities:*** Involvement is expressed in people taking up responsibility for their own health; it provides them with a sense of ownership of all they undertake relating to their health.

Referral Strategy

The categorization of KEPH into the 6 levels of care is primarily meant to rationalize the delivery of health services within the health system, for efficiency in the use of existing resources. The implication of this, however, is that the health service delivery unit a client may have direct access to may not be able to adequately manage their health care needs. The referral system is intended to address this shortcoming. A referral system is defined as a mechanism to enable clients' health needs be comprehensively managed using resources beyond those available where they access care. It is based on the premise that while capacity for health service delivery has to be rationalized around different levels of care, the services received by clients should not be determined only by the services available where they access care, but rather by the full scope of care the health system is able to provide in the country.

An effective referral chain, therefore, provides the linkages needed across the different levels of the health system – from level 1 (community) to level 6 (national hospitals). These linkages ensure that a given health care need of a client can be addressed irrespective of the level of the health system at which the client first physically accesses care. The referral system can thus be likened to an "elevator/lift" in a multistory building: facilitating forwards and backwards management of clients across different floors (levels of care).

The referral strategy thus guides the sector on building an effective referral system that responds to the needs of rural and poor populations, thereby contributing to the realization of Vision 2030, and the Millennium Development Goals (MDGs)

Process of Elaborating the Clinical Management Guidelines

This revision of the clinical management guidelines has been carried out in an extensive 3-year consultative process over 2006–2008. The process has been coordinated by the Government's top management in the Ministries in Health, through the offices of the technical directors – Director of Medical Services and Director of Public Health and Sanitation.

Technical coordination of the revisions was structured around the key disciplines of Medicine, Surgery, Obstetrics/Gynaecology, and Paediatrics. A lead technical

specialist from each of these areas was in charge of coordinating the internal consultation process in each of these areas. In addition, pharmacy specialists were involved to review and guide the definition of the medicines and medical products included in the management protocols, ensuring that the management protocols are harmonized with the Essential Medicines List.

Four stakeholder consultations were held over the 3 years, to ensure that the management protocols being defined were in line with the overall policy direction from the programme and Ministry levels, and that their implementation is feasible. These involved management and technical specialists in each of the respective areas, from the public and non public sectors.

Description of the Revised Clinical Management Guidelines

In line with the process described above, this new addition of the clinical management guidelines is based on the latest orientation for each condition expected to afflict the population in Kenya. These are both for conditions in existence, plus conditions that are recognized as threats to the population.

Management descriptions are comprehensive, based on the expected capacity at each level of care. Descriptions of each condition are set out in terms of how it presents, physical and laboratory investigations for diagnosis, and the appropriate management, including when referral is to be made.

The referral management includes:
- Identifying signs during client management that indicate referral should be considered.
- Preparing the client for referral.
- Arranging the required logistics for referral at the referring and receiving facility, plus during transport.
- Ensuring the receipt and emergency management of the client who has been referred.
- Managing the referred client by the referring facility when they return.

For relevance, alignment with the service delivery approach, and ease of use, the guidelines are presented in 3 volumes representing the major levels of care:
- Volume I: Clinical Management and Referral Guidelines for Community Care – Corresponding to level 1 of the health care system
- Volume II: Clinical Management and Referral Guidelines for Primary Care – Corresponding to levels 2 and 3 of the health care system
- Volume II: Clinical Management and Referral Guidelines for Hospital Care – Corresponding to levels 4–6 of the health care system

The Process of Physical Referral

Critical Inputs to Have at the Facility to Expedite Referral

Input category	Type of input	Description of needs	
		Description	Number
Equipment	Emergency tray Emergency room 4x4 ambulance Motorized bicycle		
Staff			
Supplies		Referral forms	3-month supply

Referral Instruments

1. Preparation of a client for referral
1.1 Referral for a pregnant mother
1.2 Referral of a child with a medical problem
1.3 Referral for a child with a surgical problem
1.4 Referral for an adolescent, adult, or elderly patient for a medical problem
1.5 Referral for an adolescent, adult, or elderly patient for a surgical problem

2. Handling of a client during referral
2.1 Referral for a pregnant mother
2.2 Referral of a child with a medical problem
2.3 Referral for a child with a surgical problem
2.4 Referral for an adolescent, adult, or elderly patient for a medical problem
2.5 Referral for an adolescent, adult, or elderly patient for a surgical problem

3. Receipt and emergency management of a client who has been referred
3.1 Referral for a pregnant mother
3.2 Referral of a child with a medical problem
3.3 Referral for a child with a surgical problem
3.4 Referral for an adolescent, adult or elderly patient for a medical problem
3.5 Referral for an adolescent, adult or elderly patient for a surgical problem

4. Follow up of a client who has been referred back
4.1 Referral for a pregnant mother
4.2 Referral of a child with a medical problem
4.3 Referral for a child with a surgical problem
4.4 Referral for an adolescent, adult, or elderly patient for a medical problem
4.5 Referral for an adolescent, adult, or elderly patient for a surgical problem

PART I
Internal Medicine and Related Disciplines

IN THIS SECTION:

1. Acute Injuries, Trauma, and Selected Emergencies

1.1 Anaphylaxis

Occurs as allergic reaction to allergens facilitated by mediators in a sensitized individual. Allergens may be drugs, food, sera, stings, and intravascular contrast media.

Clinical Features
Include pruritus, urticaria, respiratory distress (due to laryngeal oedema, bronchospasm), and hypotension.

Management
- Avoid offending agents.
- Address airway, blood pressure and cardiac status.
- Administer adrenaline 0.2–0.5mg IM repeated every 10–15 minutes for 3 doses.
- Administer aminophylline 6mg/kg IV over 20 minutes if there is wheezing
- Administer antihistamine:
  - Chlorpheniramine 10mg IV slowly. IM/SC then continued 10mg 8 hourly for 24–48 hours (children 0.1mg/kg)
  - 100mg IV is of secondary value but useful to prevent delayed recurrences
- Observe patients with mild to moderate reaction, e.g., urticaria or mild bronchospasm, for at least 6 hours because attacks may recur after full recovery.
- Give nebulized oxygen ***OR*** bronchodilators, e.g., salbutamol.

Referral/Admission
Level 2 refer, level 3 admit where possible, in the case of:
- Severe reactions, e.g., hypotension, severe bronchospasm (especially with orally ingested antigens). Severe reactions require intravenous fluid replacement with normal saline and close monitoring, especially BP and urinary output.

1.2 Cardiac Arrest

This is due to asystole, ventricular fibrillation, and cardiovascular collapse in extreme arterial hypotension. There is absence of heart sounds and of carotid and femoral pulses. There may be associated apnoea and cyanosis.

☛ **Cessation of circulation requires immediate treatment.**

Optimal chances of survival are achieved when cardiopulmonary resuscitation begins within 4 minutes of the arrest, and when advanced cardiac life support

including intubation, intravenous medications, and defibrillation is started within 8 minutes.

1.2.1 MANAGEMENT

Airway

Clear airway immediately. Vomitus and secretions should be aspirated or removed with fingers or handkerchief.

Ventilation

Inflate lungs with air or oxygen by:

- mouth-to-mouth ***OR***
- mouth-to-nose insufflation ***OR***
- bag and mask devices (ensure thoraco-abdominal motion).

Circulation

Cardiac Massage

Carry out external cardiac massage (compressions) by applying appropriate pressure over the sternum. One breath should be interposed between every 4 to 5 cardiac compressions.

Defribrillation

Use standard defibrillators delivering 200–360 J and biphasic defibrillators delivering 150–200 J.

Drugs

Administer intravenous adrenaline 1mg bolus, repeated every 3 to 5 minutes, ***OR*** vassopressin 40 IU by intravenous push, ***OR*** amiodarone 300mg in 20–30ml normal saline.

Admit/Refer

- Undertake thorough investigation and treatment of the underlying cause.
- For level 2, observe closely and refer immediately.
- For level 3, admit for observation then refer to a higher level immediately.

1.3 Shock

This is circulatory insufficiency and becomes irreversible if not promptly corrected. Shock may be either hypovolaemic shock or septic shock.

1.3.1 HYPOVOLAEMIC SHOCK

This condition is caused by the loss of intravascular fluid volume. Decreased blood and/or fluid leads to decreased diastolic filling pressure and volumes.

Causes

- Haemorrhage
- Severe burns: Rapid plasma loss from damaged tissues when over 25% of the body surface area (BSA) is involved

- Endotoxaemia makes matters worse
- Dehydration
- Vomiting and diarrhoea (cholera and enterocolitis)
- Septicaemia
- Intestinal obstruction (mechanical or paralytic ileus)

Clinical Features
The patient becomes cold, clammy, drowsy, and tachypnoeic. There is cold sweat and restlessness. Blood pressure may become unrecordable. The skin is pale and cold with collapsed peripheral veins, with a tachycardia. The urinary output is an indicator of renal blood flow, and will fall significantly. Temperature is subnormal (less than 35°C).

Investigations
- Hb and PCV
- Urea and electrolytes
- Blood sugar
- Group and cross-match blood
- Blood gas analysis if possible
- Blood cultures

Management
Once shock is suspected, the medical staff taking care of the patient should initiate appropriate and coordinated emergency management.
- Treat the primary problem, e.g., control haemorrhage, endotoxaemia, etc.
- Secure a large intravenous line; do a cut-down if there is no accessible peripheral line.
- Use a central venous pressure line if available.
- Start infusion of isotonic saline (normal saline), or run 2 litres fast in an adult.
- Group and cross-match blood before you give plasma expanders (dextran 70, etc.).
- Transfuse in cases of blood loss, or shock due to burns.
- If shock is due to vomiting or diarrhoea, replace continuing fluid loss.
  - Adults: 1 litre 6 hourly Hartmann's solution or even normal saline.
  - Continue with IV fluids till shock reversed and cause treated.
- Closely monitor vital signs.
- Monitor urinary output.
- Administer broad spectrum bactericidal antibiotics if septic shock is suspected.
- Continue maintenance until shock is reversed and the cause is reversed. If condition does not improve refer to higher levels.

1.3.2 SEPTIC SHOCK

This condition is due to systemic sepsis and may result in hypotension or multiple organ failure.

Clinical Features
Initially “warm shock”: increased heart rate, diaphoresis, warm skin. Later “cold shock”: decreased cardiac output; cool vasoconstricted skin.

Complications
- Pulmonary oedema
- Renal failure
- Disseminated intravascular coagulopathy (DIC)

Investigations and Diagnosis at Level 3
- Hb, WBC, platelets, urea and electrolytes, creatinine
- Blood sugar culture and sensitivity (blood and body fluids)

Management – General
- Resuscitate with normal saline or dextran 70. Large volumes may be required but watch for heart failure.
- Monitor pulse and BP hourly.
- Catheterize and monitor urine output hourly. If less than 20ml/hr after adequate fluid replacement, give frusemide 80mg IV STAT.
- Administer oxygen via face mask
- Determine and treat the cause.

Management – Pharmacological
- Commence resuscitation measures immediately the patient is seen.
- Start empirically on:
  - Benzyl penicillin 4 mega units IV every 6 hours
  - + gentamicin 80mg IV 8 hourly
  - + metronidazole 500mg IV 8 hourly ***OR*** 1g suppositories rectally 8 hourly.
- Start oral metronidazole 400mg 8 hourly as soon as patient is able to swallow.

Use of other antibiotics will depend on source of infection and culture and sensitivity results.

Refer
Make the decision to refer if the case is complicated, especially if urinary output starts falling; serum urea, creatinine, and potassium begin to rise; or there is evidence of any other organ failure despite attention to adequate hydration with brisk electrolyte balancing, and antimicrobial administration. The onset of disseminated intravascular coagulopathy should always be anticipated.

1.4 Stings and Bites

Insect and animal bites can cause serious reactions, even death, and need to be treated with care.

1.4.1 BEE STING

Bee sting causes sharp pain followed by intense itching. Signs subside within a few hours. In hypersensitive individuals, anaphylaxis may occur (see Section 1.1,

anaphylaxis). Other patients may experience delayed reactions usually after 0–14 days. In case of severe reaction to a sting,

- Ensure the stinger is removed; scrape out, do not pull with tweezers as this can release more poison.
- Administer antihistimine if patient is allergic.
- Relieve pain with aspirin or paracetamol, and relieve itching with an appropriate lotion or a paste of bicarbonate of soda and water.

1.4.2 BITE BY A SUSPECTED RABID ANIMAL (RABIES)

Any mammalian animal may carry rabies. Saliva from a rabid animal contains large numbers of the rabies virus, which is inoculated through a bite, any laceration, or a break in the skin. Rabies is almost universally fatal once clinical features appear. It is therefore important to prevent the onset of symptoms. The incubation period is 10 days to 1 year with an average of 1–2 months. This period is adequate to allow immunization.

Management

Immediate Local Care

- Thorough irrigation with copious amounts of saline solution
- Cleansing with a soap solution debridement
- Administration of antibiotic
- Administration of tetanus toxoid
- Infiltrate the wound with rabies immunoglobulin

☛ **Suturing and skin grafting of bite wounds MUST be delayed, and be done at a higher level.**

Indication for Anti-Rabies Vaccine

- Bites from wild animals
- Bites from UNPROVOKED domestic animal
- Bites from a sick looking domestic animal, whether immunized or not
- Severe injury (multiple or deep puncture wounds), or any bites on the head, face, neck, hands or fingers
- Laboratory findings of Negri bodies in the brain of the involved animal
- Persons at high risk of exposure.

Immunization

Pre-exposure prophylaxis should be provided to persons at high risk of exposure such as laboratory staff working with rabies virus, animal handlers, and wildlife officers:

- Three full intramuscular doses of 1ml on days 0. 7 and 28 in the deltoid area.

Post exposure prophylaxis of previously vaccinated persons:

- Local treatment should always be given. Post exposure prophylaxis should consist of 2 booster doses either intradermally or intramuscularly on days 0 and 3 if they have received vaccination within the last 3 years. Otherwise, a full course of rabies vaccine.

Post Exposure Prophylaxis

- Passive immunization: Give human rabies immunoglobulin as a dose of 20 IU/kg of body weight infiltrated around the wound and 20 IU/kg given IM in gluteal region. This is followed by a course of rabies vaccine.
- Intradermal schedule: Give 1 dose (0.1ml) at each of 2 sites, either the forearm or the upper arm, on days 0, 3, and 7 and 1 dose at 1 site on days 30 and 90.
- Intramuscular schedule: Administer 1 dose (1ml) on days 0, 3, 7, 14, and 28. All IM injections should be made in the deltoid region or in small children in the anterolateral area of the thigh muscle.

1.5 Poisoning

Can be acute or chronic. Acute poisoning is often life threatening and should always be treated as an emergency even if the immediate threat to life does not appear real. Table 1.1 summarizes the clinical features and treatment of a number of common acute poisonings.

Clinical Monitoring

- Blood pressure measurement
- Urine output (1–2ml/kg/hr); catheterize
- Nasogastric suction in abdominal conditions
- Blood glucose levels
- Hb or PCV daily and correct appropriately

Treat renal complications appropriately. More importantly, treat the cause of the hypovolaemia to pre-empt these complications. Remember to consult in this very dire emergency.

Prevention

- Public education about farm or household chemicals known to cause accidental, para-suicidal, or suicidal poisoning.
- Parent education about NOT storing such substances in soft drink or juice bottles, and keeping them out of reach and sight of children.

Table 1.1: Clinical features and treatment of common acute poisonings

Substance	Clinical features	Recommended action
1. Household agents and industrial chemicals		
Kerosene (paraffin)	Nausea, vomiting, cough, pulmonary irritation, difficulty in breathing; headaches, loss of consciousness	• Remove contaminated clothing; wash exposed skin with water and soap.Activated charcoalMaintain airways and respiratory support • DO NOT INDUCE VOMITING or perform gastric lavage
Carbon monoxide, e.g., car exhaust, charcoal jiko	Headache, dizziness, confusion, slurred speech, convulsions, coma; symptoms vary with percentage of carboxyhaemoglobin	• 100% oxygen • Hyperbaric oxygen

Continued

Table 1.1, *continued*

Substance	Clinical features	Recommended action
Corrosives,e.g., acids, alkalis, hydrogen peroxide	Excruciating pain in the mouth, pharynx, epigastric area; dysphagia, vomiting and haematemesis; later develops laryngeal oedema and obstruction, oesophageal perforation; long-term: Stenosis of oesophagus	• Liberal water or milk orally • Analgesic injection to relieve pain • DO NOT INDUCE VOMITING • DO NOT PERFORM LAVAGE
Methanol	Intoxication, drowsiness, muscle weakness, blurred vision, photophobia, papilloedema blindness, coma, cerebral oedema, cardio-respiratory depression, seizures,DEATH	• IV sodium bicarbonate • 10% Ethanol in 5–10% dextrose as oral or IV infusion • Loading dose 0.7g/kg over 1 hour Maintain at 0.1–0.2g/kg/hour up to ethanol level of 100mg/dl
2. Pharmaceuticals		
Paracetamol	Nausea, vomiting, altered mental status, abdominal pain, evidence of liver failure (elevated transaminases)	• Gastric lavage within 1 hour • Activated charcoal • Antidotal therapy with N-acetylcysteine for up to 72 hours
Chloroquin	Convulsions, cardiac arrhythmia, cardiac arrest	• Gastric lavage • IV diazepam for convulsions • Refer if in coma
Digoxin	Arrhythmias, ventricular fibrillation, anorexia,nausea, vomiting,confusion, amblyopia	• Discontinue drug,administer potassium • Treat arrthymias with lidocaine ***OR*** phenytoin • Antidigoxin FAB fragments
Iron tablets, e.g., FeSO4, vitamins with iron	Vomiting, abdominal pain, pallor, cyanosis, diarrhoea, shock	• Emesis • Gastric lavage • Desferrioxamine 1g IV 15/kg/hour max 80mg in 24 hours
Opiates, narcotics (drugs of abuse)	Drowsiness, pinpoint pupils, shallow respiration, spasticity, respiratory failure	• Do not give emetics • Gastric lavage • Activated charcoal • Naloxone 5µg/kg IV to awaken and improve respiration • IV fluids to support circulation
Isoniazid	CNS stimulation, seizures,coma	• Emesis, gastric lavage • Diazepam • Pyridoxine (1mg for 1mg ingested up to 200mg) • Sodium bicarbonate for acidosis
Warfarin	Generalized bleeding, with intracranial haemorrhage being most serious	• Vitamin K 10mg IV STAT + OD for 5 days • Transfuse fresh blood

Continued

Table 1.1, *continued*

Substance	Clinical features	Recommended action
3. Pesticides		
Organo-phosphates, e.g., diazinon, dimethoate	Headaches, weakness, vomiting, colicky abdominal pain,profuse cold sweating, hypersalivation, muscular twitching, fasciculations, diarrhoea, tenesmus, convulsions, dyspnoea with bronchoconstriction,meiosis, bilateral crepitations	• Decontaminate (see above). • Remove contaminated clothing; wash exposed skin with water and soap. DO NOT INDUCE VOMITING. • IV atropine 2–4mg STAT, repeat after 10–20 min until full atropinization (pulse 100–120, dilated pupils) and maintain on SC atropine 4–6 hours x 24–48 hours. • Pralidoxime (PAM) 1–2g (children 30mg/kg) STAT, repeat 4 hourly, 12–24 hours depending on response
Rodenticides, e.g., zinc phosphide	Severe abdominal pain, nausea, vomiting and diarrhoea; strong garlic smell; severe respiratory distress; myocardial injury	Supportive: • Maintain airways • Assist ventilation • Observe for pulmonary oedema
Rodenticide (anticoagulant based)	Generalized bleeding, with intracranial haemorrhage being most serious	• Vit. K 10mg IV STAT • Transfuse fresh blood
Acaricides, e.g., Amitraz	Weakness, difficulty breathing, convulsions, coma	• Remove contaminatedclothing; wash exposed skin with water and soap. DO NOT INDUCE VOMITING. • IV sodium bicarbonate
Herbicides, e.g., Paraquat	Oral/pharyngeal inflammation, later multi-organ failure within hours or days depending on dose. Later interstitialpulmonary oedema and fibrosis. Multi-organ failure or pulmonary oedema invariably leads to death!	• Lethal dose as low as 10ml • Gastric lavage with 50–100g activated charcoal 4 hourly until patient improves
Organochlorines, e.g., DDT, aldrin, dieldrin	Excitement, tremors, convulsions with respiratory failure due to convulsions	• IV diazepam for convulsions • Gastric lavage if within 1 hour • Survivors beyond 48 hours almost invariably recover
4. Others		
Lead: e.g., lead salts, solder, toys, paints, and painted surfaces	Thirst, abdominal pain, vomiting, diarrhoea, encephalopathy following ingestion of suspicious substance	• Eliminate source of poisoning Chelation with Dimercaprol (BAL) Inj 4mg/kg and combined with calcium sodium editate (EDTA) with close monitoring for renal functionDMSA (oral succimer) Treatment over long periods (months to years)
Mercury	Acute: gastroenteritis,vomiting, nephritis, anuria, delayed GI motility Chronic: gingivitis, mental disturbances, neurodeficits, pneumonitis	• Gastric lavage • Activated charcoal • Penicillamine • Haemodialysis for renal failure • Look out for GIT perforation • Lungs: supportive care

2. AIDS and Sexually Transmitted Infections

2.1 HIV/AIDS

HIV infection is caused by one of two related retroviruses, HIV-1 and HIV-2, resulting in a wide range of clinical manifestations. Transmission requires contact with body fluids containing infected cells or plasma. HIV is present in blood, semen, vaginal secretions, breast milk, saliva, CSF, and wound exudates (see Table 2.1). The virus progressively destroys the body's immune functions, leading to opportunistic infections and tumours. It is these opportunistic infections and tumours that give the manifestations of this disease.

Table 2.1: Modes of transmission and preventive measures for HIV infection

Mode of transmission	Preventive measures
Sexual intercourse: vaginal intercourse (majority of cases), anal or oral sex	Practice abstinence Avoid risky sex practices like casual and multiple partners Use condoms Treat STIs promptly and effectively (STIs increase risk of HIV transmission)
Mother to baby: In utero, during childbirth, breastfeeding (30–40% transmission rate)	Advise counselling and testing Give ARV (nevirapine) to both mother and infant
Blood transfusion	Ensure that all blood is screened before transfusionArrange autologous transfusions where possible
Contaminated instruments: Needles, skin piercing instruments	Ensure that sterile needles are used at all times Ensure that instruments for ear piercing, circumcision, tattooing, etc., are sterile.For needle drug addicts, do not share needles

2.1.1 CLINICAL MANIFESTATIONS

These vary from asymptomatic carrier states to severe debilitating and fatal disorders related to defective cell-mediated immunity. AIDS (acquired immune deficiency syndrome) is the end stage of the spectrum of disease and is characterized by life threatening opportunistic infections and neoplasms.

The manifestations of HIV infection are many and present in all disciplines of medicine. Some of these are skin, respiratory system, GIT, and nervous system.

SKIN

Dermatological manifestations are probably the commonest. The diseases may be infective (bacterial, fungal, viral), reactive (eczema, hypersensitivities), or neoplastic. The most common ones are:

- Herpes zoster (shingles)
- Seborrhoeic dermatitis
- Molluscum contagiosum
- HIV-associated pruritis
- Chronic Herpes simplex or HSV ulcers
- Psoriasis
- Kaposi's sarcoma

Management
- For treatment of dermatological conditions, refer to specific areas in these guidelines.
- For Kaposi's sarcoma, refer to treatment guidelines in level 4 and above.
- For chronic Herpes simplex or HSV ulcers, use/advise antiseptic soaps or saline baths and topical acyclovir cream or systemic acyclovir tabs, 800mg PO 5 hourly for 10 days. Administer antibiotics for secondary bacterial infections.

GASTROINTESTINAL TRACT

Candidiasis

Caused by yeast or fungus, Candida albicans is the commonest agent. It is usually a normal inhabitant of mucosal surfaces but overgrows with increasing immune deficiency.

Presentation

Appears as white, milk-like, removable plaques on the oral mucosa – oral thrush – white coating on hard or soft palate and tongue; causes dysphagia if oesophagus involved; occurs in late disease.

Management
- Nystatin 100,000 units 4 times daily after food for 7 days
- Ketoconazole 200mg or 400mg OD for 7 days.
- Diarrhoea of more than 1 month's duration is often caused by shigella, salmonella, or amoeba; can also be caused by the HIV itself (slim or wasting disease).

RESPIRATORY SYSTEM

Pulmonary tuberculosis (PTB) cases have increased since the advent of the HIV/AIDS epidemic. The risk of reactions to anti-TB therapy is higher in HIV positive patients, thus thiacetazone (in thiazina) is to be avoided (see Section 7.3.3, TB). Pneumocystis carinii pneumonia is less frequent than in the western world.

Neurological Features
- Headaches (progressively worsening)
- Mental deterioration., seizures
- Meningitis including cryptococcal meningitis
- CMV encephalitis
- Sensory disturbances

General Features
- Fever, constant or recurrent
- Unexplained weight loss of >10% of body weight
- Chronic malaise or fatigue
- Enlarged lymph nodes at 2 or more extra-inguinal sites for more than 3 months

Investigations
- Rapid tests: 2 parallel tests with 2 different kits. A third kit can be used as tie breaker. Alternatively, use a double ELISA.
- Routine screening for HIV: People should be encouraged through VCTs and DCT/ PITC to learn their serostatus – and what to do once they know.

2.1.2 HIV TESTING AND PATIENT EDUCATION

- Pre-test and post-test counselling: HIV test should not be done without first counselling the patient, unless under emergency situations.
- Everyone should know:
  - How HIV is transmitted
  - How one can avoid getting infected
  - That HIV *CANNOT* be transmitted by shaking hands or touching people with AIDS; sneezing or coughing; eating food, drinking water or sharing utensils; from infected insect bites; from using contaminated toilets or latrines.

HIV-negative patients/clients need to know:
- That one can be in the window period (i.e., time between infection with HIV and development of detectable antibodies).
- That a negative result today does not mean that a person cannot acquire HIV if exposed.

HIV-positive patients need to know the following:
- They can transmit the infection to their sexual partner(s), and to their unborn baby in utero (if the patient is pregnant).
- Their health can deteriorate faster if they acquire other infections, including STIs.
- Their health can deteriorate faster if they take alcohol excessively, smoke, have poor nutrition, and have multiple sexual partners.
- Condoms, as generally used, are roughly 70–80% effective in preventing acquisition and transmission of HIV and other STIs. Proper education on condom use can increase the effectiveness of the condom to 90%.
- Pregnancy hastens the progression of disease and up to 40% of babies born to HIV infected mothers will acquire the infection. Contraceptive advice should be given. Intrauterine contraceptive devices (IUCD – the Coil) are known to predispose to pelvic inflammatory disease (PID) and hence are discouraged.

2.1.3 STAGING OF HIV/AIDS

The World Health Organization (WHO) defines 4 stages or phases in the progression of HIV and AIDS, as shown in Table 2.2.

2.1.4 MANAGEMENT OF HIV/AIDS

General Management

- Eat a well-balanced diet, get good rest, and take regular exercise.
- Minimize alcohol consumption and smoking.
- Pay prompt attention to any health problem.
- Seek social support through counselling, support groups of other HIV patients/ clients.

Pharmacological Management of HIV/AIDS

The main aim of anti-retroviral drug treatment (ARV/ART) is to suppress the viral load, achieve reconstruction of the immune system, and hence improve quality of life. Combination therapy using anti-retroviral drugs started from levels 3 and above, can be continued at lower levels, but in consultations with higher levels. Refer to Table 2.3 for standardized ARV regimes for adults and adolescents.

Principles of Treatment

- Ensure patient compliance through counselling and follow up.
- Use combination therapy of 3–4 drugs.
- Advise on nutritional support as an important component of management.
- Advise on ART – so far no drug or herb has been shown to eliminate the virus from the body. Some drugs have been shown to slow the multiplication of the virus and thus improve quality of life and delay the progression of the disease.
- Refer for anti-retroviral treatment to higher levels.

Treatment in Tuberculosis Patients

- Avoid ARVs in intensive phase: D4T + 3TC and EFV (800mg per day)
- NB: Protease inhibitors are contraindicated when rifampicin is used.

Table 2.2: WHO classification of HIV and AIDS clinical stages (adults and adolescents)

Clinical stage I – Asymptomatic

- Persistent generalized lymphadenopathy

Clinical stage II – Early (mild disease)

- Weight loss <10% body weight
- Minor skin infections
- Herpes zoster
- Recurrent upper respiratory infections

Clinical stage III – Intermediate (moderate)

- Weight loss >10% body weight, chronic diarrhoea, fever, oral candida, TB, severe bacterial infections

Clinical stage IV – Late (severe disease)

- HIV wasting syndrome, CMV, Pneumocystis carinii pneumonia, toxoplasmosis
- Kaposi's sarcoma, HIV encephalopathy

Table 2.3: ARV standardized regimes In Kenya (adults and adolescents)

1st line:	D4T or AZT+ 3TC + NVP or EFV For pregnant women and those likely to get pregnant give D4T + 3TC + NVP
2nd line:	ddl + ABC + lopinavir with ritonavir (kaletra) (needs refrigeration), alternatively – nelfinavir ***OR*** TDF + ABC + Lopinavir/ritonavir (kaletra)

2.1.5 PREVENTION OF MOTHER TO CHILD TRANSMISSION

Refer to Part IV, Obstetrics and Gynaecology, which deals with prevention of mother to child transmission of HIV/AIDS.

2.1.6 POST-EXPOSURE PROPHYLAXIS

- Low risk: AZT/3TC within 72 hours for 28 days.
- High risk: AZT/3TC/indinavir within 72 hours for 28 days.

☛ **Refer to higher level for appropriate post-exposure prophylaxis.**

2.1.7 OPPORTUNISTIC INFECTIONS AND OTHER MANIFESTATIONS

Appropriate management of the specific infection is covered in the relevant chapter and should be looked up.

☛ **Most opportunistic infections in HIV/AIDS are treatable. Patients respond well and are able to resume work.**

2.2 Sexually Transmitted Infections (STIs)

These are communicable diseases and usually transmitted through sexual contact. Other forms of transmission of these diseases include vertical transmission from mother to child in utero, during birth or soon after birth and blood transfusion, or via contaminated needles, syringes, specula, gloves, and skin piercing and cutting instruments. Clinical manifestations of these conditions depend on the offending organism and are numerous.

☛ **Accurate diagnosis and effective treatment of STI are essential and cost-effective HIV/AIDS prevention strategies.**

Management

- Give full course of appropriate drug therapy – see Table 2.4 and Figure 2.1 on urethritis.
- Follow up the patient.
- Provide health education and counselling.
- Manage the sexual contacts, including contact tracing, diagnosis, treatment, health education and counselling.
- Refer to higher level for complications.

☛ **Each and every treatment of STI must include the 4 C's.**

THE 4 C's OF STI MANAGEMENT

- ✓ Compliance with the full drug course and follow-up
- ✓ Counselling on safer sexual behaviour
- ✓ Condoms, used properly and consistently
- ✓ Contact tracing, partner treatment, and notification

Patient Education

- Avoid multiple or anonymous partners, prostitutes or any other person with
- multiple sex partners.
- Use condoms correctly, e.g., avoid oil-based lubricants.
- Avoid alcohol or drug abuse, as these may lead to irresponsible sexual behaviour.

Clinical Features and Treatment Summary

For more detailed descriptions see clinical features of specific conditions below.

2.2.1 GONORRHOEA AND URETHRAL DISCHARGE

Clinical Features

Discharge in anterior urethra with dysuria or urethra discomfort. Caused by gonococcal infection in 90% of cases. The other 10% are non-gonococcal infections (NGIs) mainly due to Chlamydia trachomatis and to less a extent trichomonas or Herpes simplex. In 5–10%, there is a mixture of gonorrhoea and NGIs. In addition, infection of the glans (balanitis) or prepuce (posthitis) by Candida albicans can lead to discharge. Otherwise:

- Gonorrhoea: Abundant pus-like discharge, incubation period 3–10 days.
- NGI: Mucoid or serous discharge, scanty, usually seen in morning, incubation 10–14 days.

Investigations

- Diagnosis in male is usually clinical, but if confirmation is required a urethral smear is done.
- Gram stain showing pus cells and intracellular Gram-negative diplococci is 95% accurate.

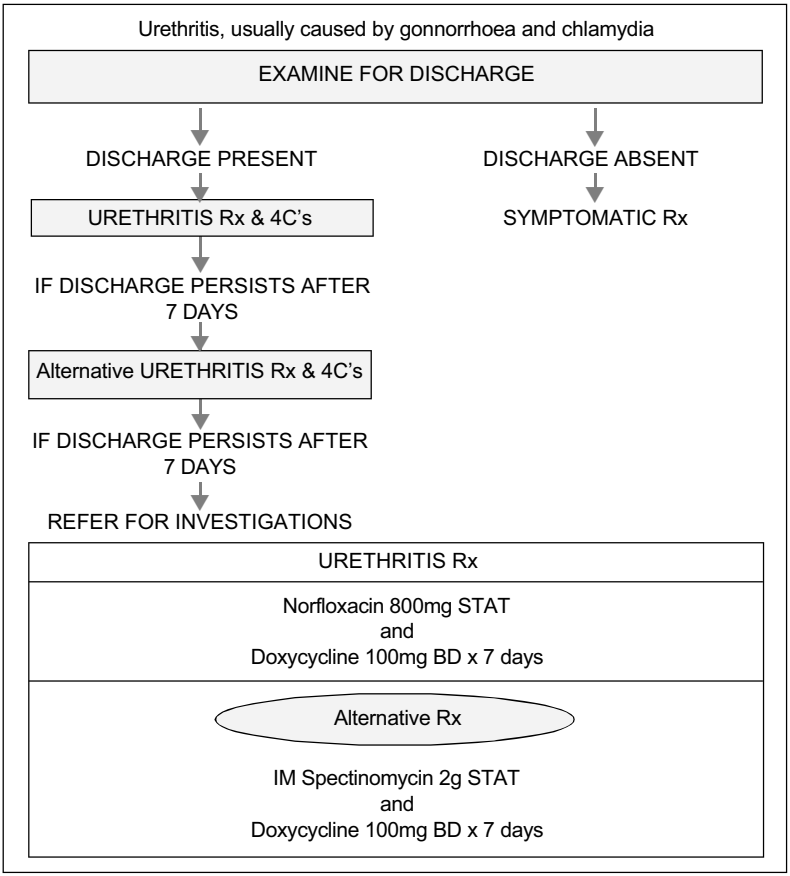
Management

Refer to Table 2.4 and Figure 2.1.

Table 2.4: Management – Gonorrhoea and other urethritis (levels 2–4)

Diagnosis	First line treatment	Second line treatment
Gonorrhoea – Adults	Amoxicillin 3g orally + Probenecid 1g orally ***OR*** Amoxicillin-clavulanate 625mg orally + probenecid 1g orally ***OR*** Ciprofloxacin 500mg orally ***OR*** Ofloxacin 400mg orally ***OR*** Ceftriaxone 250mg IM STAT	Kanamycin 2g IM STAT ***OR*** Cefuroxime 1g orally ***OR*** Azithromycin 2g orally
Pregnancy	As above	As above
Non-gonococcal & chlamydia urethritis – Adults	Doxycycline 200mg STAT followed by 100mg daily x 7 days	Erythromycin 500mg orally QDS x 7 days
Pregnancy	Erythromycin 500mg orally QDS x 7 days	

Figure 2.1: Decision flow chart for urethral discharge



2.2.2 GENITAL DISCHARGE IN THE FEMALE

Causes of vaginal discharge include Candida vulvovaginitis (monilia or thrush), trichomonas vaginitis, and bacterial vaginosis. Endocervical discharge can be caused by gonorrhoea, Chlamydia trachomatis, and Mycoplasma hominis.

CANDIDA VULVOVAGINITIS (MONILIA OR THRUSH)

Common infection of the vulva and vagina caused by the fungus Candida albicans. It is not always transmitted by sexual intercourse. Predisposing factors are diabetes mellitus, systemic antibiotics, pregnancy, hormonal oral or injectable contraceptives, and decreased host immunity.

Clinical Features
Vaginal discharge is creamy and thick (curd like), associated with itching, burning, and soreness during micturition and sexual intercourse. There is erythema, excoriation, and fissures. Diagnosis is mainly clinical.

Investigations
Wet mount is prepared by putting a drop of the discharge onto a glass slide and adding a drop of saline or 10% potassium hydroxide (KOH) and covering with a cover slip. Examine under low-power microscope. Candida albicans is identified by pseudohyphae and spores.

Management
- Apply gentian violet 1%, once daily for 3 days (use cotton wool balls or speculum).
  OR
- Insert Nystatin pessaries high in the vagina 1 BD for 7 days.
- Apply Nystatin cream to vulva BD for 14 days.
  OR
- Insert Clotrimazole pessaries 1 OD for 6 days.
- Also treat partner with application of cream.

Prevention
People who get recurrent infection should be given concurrent prophylactic treatment whenever broad-spectrum antibiotics are prescribed.

TRICHOMONAS VAGINITIS
"Trich" is a common cause of vaginal discharge. Caused by Trichomonas vaginalis, a flagellated protozoan, it is mainly sexually transmitted.

Clinical Features
Symptoms depend on the severity of the infection and include a frothy, greenish-yellow, foul-smelling discharge. Other features are vaginal soreness, dyspareunia, and post-coital spotting. Infection usually involves the vulva, vagina, and cervix, which may appear reddish and swollen. Diagnosis is mainly clinical.

Investigations
- Wet mount preparation demonstrates flagellated protozoa.
- Trichomonas may also be noted on urine microscopy or pap smear.

Management
- Metronidazole 200mg–400mg TDS for 7 days. The same dose for the male partner. Alcohol consumption to be avoided during treatment with metronidazole. Drug to be avoided during first trimester of pregnancy. In pregnancy use tinidazole pessaries.
- Tinidazole 2g STAT. The same dose for the male partner.

BACTERIAL VAGINOSIS

This is usually associated with Gardnerella vaginalis.

Clinical Features

Vaginal discharge greyish-white in nature with a characteristic fishy odour that increases in intensity after sexual intercourse. Not usually associated with soreness, irritation, pruritus, burning sensation, or dyspareunia. Diagnosis is usually clinical.

Investigations

- Wet mount preparation, which will show vaginal epithelial cells with adherent clusters of Gram-negative bacilli or coccobacilli (CLUE CELLS).
- Whiff-test in which a drop of discharge is mixed with a drop of KOH, which gives a characteristic fishy odour.

Management

- Treat both patient and male partner.
- Metronidazole 400mg TDS for 7 days (avoid alcohol).

CERVICITIS

About one-third of all women presenting with vaginal discharge have cervicitis. The commonest causes of endocervicitis are gonorrhoea, chlamydia, trichomonas, and Herpes simplex virus.

Clinical Features

Cloudy-yellow vaginal discharge that is non-irritating, non-odorous, and mucoid. There may also be inter-menstrual or post-coital spotting or both. There may also be dyspareunia or pelvic discomfort or both. Cervical mucosa appears inflamed with focal haemorrhages. Cervix is friable and bleeds easily on touch. Vesicular herpetic lesions will be found on vulva, vagina, and cervix. Abdominal and bimanual pelvic examination should be done to rule out pelvic inflammatory disease.

Investigations

- Wet mount preparation: Look for pus cells, trichomonas and yeasts.
- Gram-stain of the discharge of endocervical swab (Neisseria gonorrhoea shows Gram-negative intracellular diplococci).
- Culture for gonorrhoea or chlamydia if available.
- Pap smear after treatment.

Management

See Figure 2.2, Vaginal discharge flow chart.

Give norfloxacin 800mg STAT then 400mg BD for 7 days.

- Doxycycline 100mg BD
- Metronidazole 2g STAT

DYSURIA IN THE FEMALE

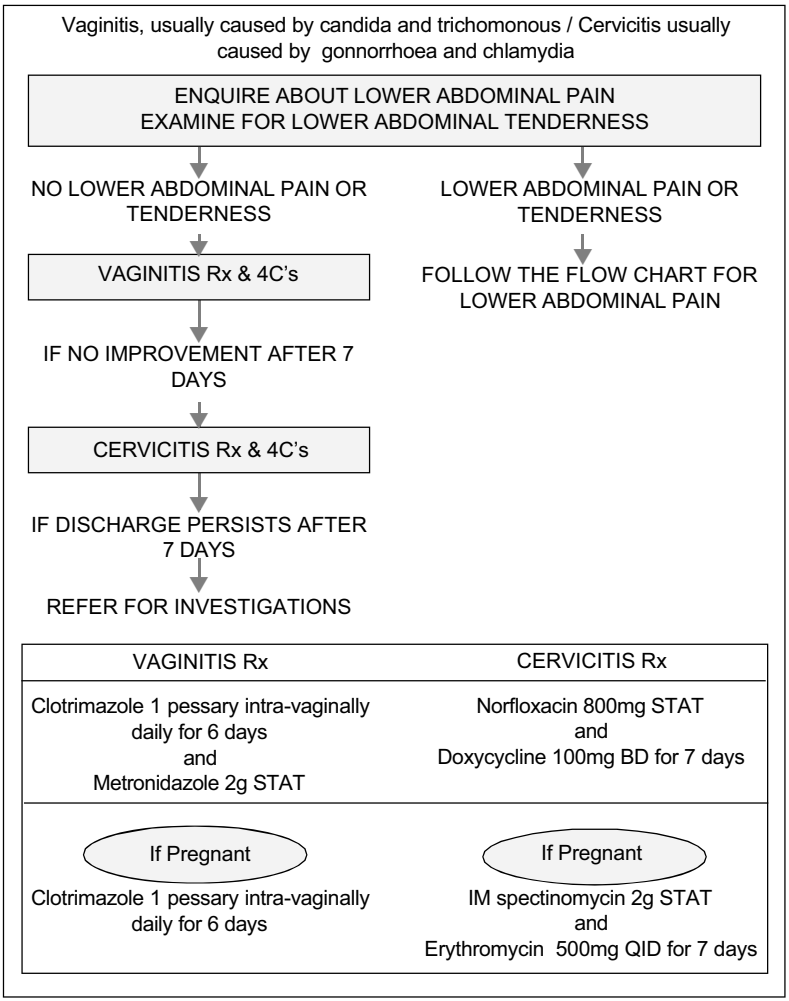
Can result from urinary tract infection, vaginitis, or cervicitis. See relevant sections of manual for clinical features, investigations and management. Gonorrhoea should be considered for patients at high risk for STIs.

LOWER ABDOMINAL PAIN IN THE FEMALE

Clinical Features

Lower abdominal pain is often due to pelvic inflammatory disease (PID – see

Figure 2.2: Flow chart for vaginal discharge



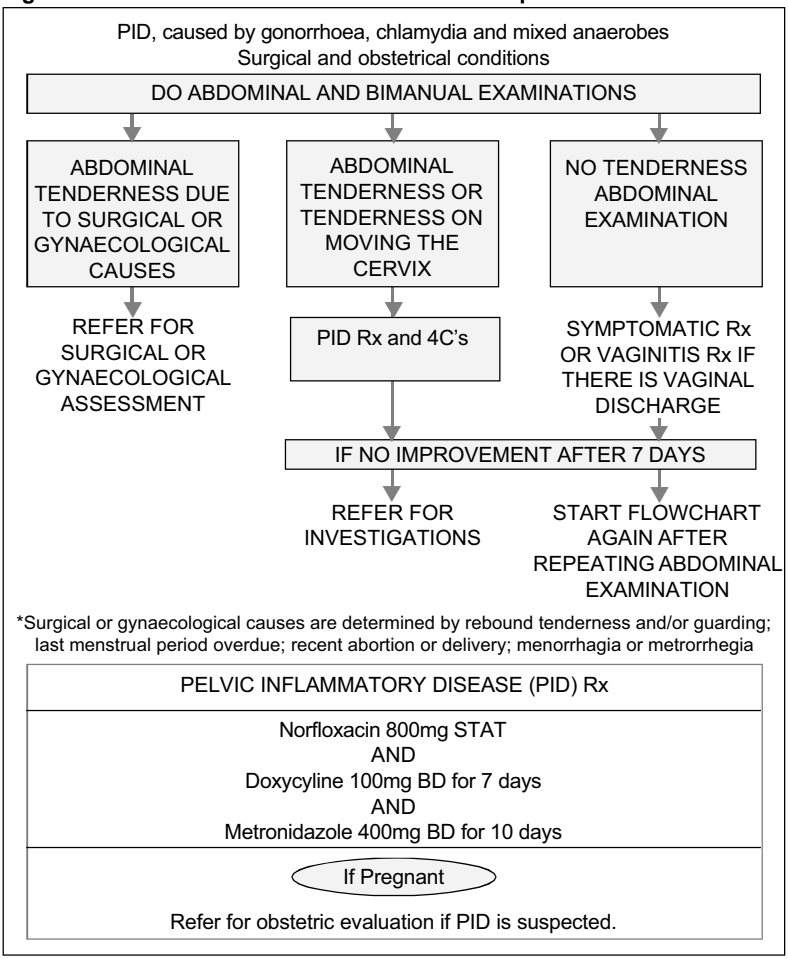
Chapter 54). It must be differentiated from urinary tract infection, ectopic pregnancy, threatened abortion, appendicitis, and other causes of acute abdomen.

☛ **Abdominal and pelvic examinations must be done on all cases of lower abdominal pain in women.**

Management

- See Figure 2.3 and relevant sections of manual.

Figure 2.3: Decision chart for lower abdominal pain in women



GENITAL ULCER DISEASE

Clinical Features

These are summarized in Table 2.5 for the more common ulcers.

Management

See flow chart in Figure 2.4 and management summary in Table 2.6.

BUBOES OR SWOLLEN INGUINAL GLANDS

Buboes are enlarged lymph nodes in the groin. They may be associated with an ulcer in the genital area or on the lower limbs. Refer to genital ulcer disease.

Clinical Features

- **Lymphogranuloma venerium:** Several nodes matted together on one or both sides, usually without suppuration.
- **Chancroid tender fluctuant bubo** that suppurates, leaving an undermined inguinal ulcer should be aspirated before suppuration.

Investigations

Serology for syphilis should always be performed.

GENITAL WARTS

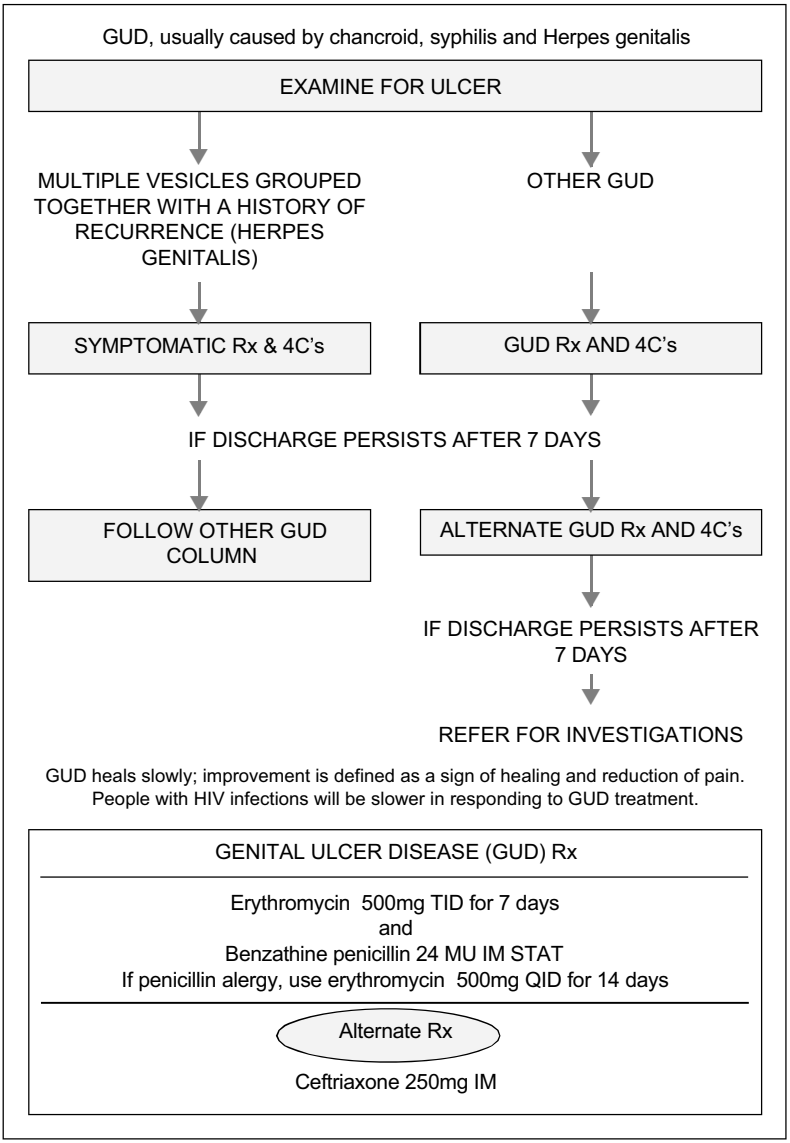
Clinical Features

- Condyloma acuminatum (Human papilloma virus): Cauliflower-like warts. May be single or multiple on the vulva, vagina, perineal area, penis, urethra, and sub-prepucial. Vaginal discharge, pain, bleeding on coitus or touch may occur.

Table 2.5: Clinical features and probable causes of genital ulcers

Clinical features	Probable diagnosis & cause
Single, painless, relatively clean ulcers without pus Incubation period up to 3 weeks Painless lymphadenopathy	Primary syphilis chancre T. pallidum
Multiple, soft, deep, tender ulcers with profuse pus Incubation period 1 week Very painful lymphadenopathy, which can be fluctuant Disfiguration of the genitalia Secondary infection	Chancroid H. ducreyi
Multiple shallow and tender ulcers May start as vesicles grouped together. Itchy Incubation period 1 week Tender lymphadenopathy, may be recurrent, rarely suppurative	Herpes genitalis H. simplex
Single, small and transient ulcers Incubation period 1–2 weeks Lymphadenopathy; several glands may be matted together Fistula and stricture formation	Lymphogranuloma venerium (LGV) C. trachomatis
Large, beefy ulcers Variable incubation period None or rarely lymphadenopathy	Granuloma inguinale Calymmatobacterium granulomatis (Donovan bacilli)

Figure 2.4: Flow chart for genital ulcer disease (GUD)



- Molluscum contagiosum (Pox group virus): Umbilicated multiple papules with whitish, cheesy material expressed when squeezed. Secondary infection and spread to other sites may occur.

☛ **Secondary syphilis should be ruled out when evaluating genital venereal warts**

Management

- Carefully apply podophyllin 25% in tincture of benzoin to each wart, protecting the normal surrounding skin with petroleum jelly.
- Wash off the podophyllin thoroughly 1–4 hours later. Repeat 1–2 times weekly.
- If there is no regression after 4 applications, refer to higher level.

Table 2.6: Treatment of selected STIs, including GUD

Diagnosis	First line treatment	Second line treatment
Chancroid Adults	Trimethoprim 160mg/sulphamethoxazole 800mg 4 tablets once a day x 2 days ***OR*** cotrimoxazole (comprising 80mg trimethoprim/400mg of sulphamethoxazole) 8 tablets daily x 2 days. Buboes, if present, should be aspirated and not incised and drained	Erythromycin 500mg orally QDS x 7 days ***OR*** ceftriaxone 250mg IM STAT ***OR*** ciprofloxacin 500mg BD x 3 days
Pregnancy/allergy	Erythromycin 500mg orally QDS x 7 days ***OR*** Ceftriaxone 250mg IM STAT ***OR*** Ciprofloxacin 500mg BD x 3 days	
Early syphilis	Early syphilis (less than 1 year duration) Benzathine penicillin 2.4 MU weekly x 2 weeks. *OR* Procaine penicillin (PP) 600,000 units IM OD x 10 days	
	In penicillin allergy use: Tetracycline capsules 500mg QDS x 15 days *OR* Erythromycin 500mg QDS x 15 days. *OR* Doxycycline 100mg OD x 15 days	
Late syphilis (more than 1 year)	Procaine penicillin (PAM) 600,000 units IM OD x 14 days ***OR*** Benzathine penicillin 2.4 MU weekly x 4 to 5 doses	
In pregnancy	Use either one of the penicillin preparations or erythromycin (see above). If erythromycin is used, the neonate should be treated soon after birth.	
Congenital syphilis	Aqueous crystalline penicillin G 25,000 units/kg IM, twice a day for a minimum of 10 days *OR* Aqueous procaine penicillin G 50,000 units/kg/day IM OD for a minimum of 10 days	
Herpes genitalis	Lesions should be kept clean by washing the affected sites with soap and water and careful drying. Acyclovir 200mg orally 5 times daily for 7–10 days only reduces the symptoms and their duration and does not prevent recurrences. It is expensive.	
Lymphogranuloma venereum	Tetracycline 500mg QDS x 14 days ***OR*** Erythromycin 500mg QDS x 14 days ***OR*** Doxycycline capsules 100mg BD x 14 days ***OR*** Sulphamethoxazole 1g orally BD x 14 days	
Granuloma inguinale	Tetracycline capsules 500mg QDS x 10 days ***OR*** Erythromycin 500mg QDS x 10 days ***OR*** Cotrimoxazole 2 tablets twice daily x 10 days ***OR*** Streptomycin 750mg daily x 10 days	

3. Cardiovascular Diseases

3.1 Introduction

These are the diseases and disorders of the heart and blood vessels. They include rheumatic heart disease, coronary heart diseases, hypertension, and deep venous thrombosis (DVT), among others.

Heart failure occurs when the heart is unable to supply sufficient output for the metabolic needs of the tissues, in face of adequate venous return. Common causes of heart failure are hypertension, valvular heart disease, ischaemic heart disease, anaemia, and pulmonary thromboembolism.

Clinical Features
Tachycardia, gallop rhythm, raised JVP, dependent oedema, tender hepatomegaly, orthopnoea, fatigue, exercise intolerance, and basal crepitations.

Common precipitating factors of heart failure in cardiac patients must be considered in treatment of acutely ill patients: poor compliance with drug therapy; increased metabolic demands, e.g., pregnancy, anaemia; progression of underlying disease, e.g., recurrent myocardial infarction, uncontrolled hypertension; cardiac arrhythmias; pulmonary embolism; infective endocarditis; infection, e.g., pneumonia.

Investigations
Refer for investigations.

Management – General
- Restrict physical activities.
- Order bed rest in cardiac position.
- Administer oxygen by mask for cyanosed patients.
- Restrict salt intake, control fluid intake, and measure urine output.
- Measurement weight daily.
- Refer to higher level.

3.2 Acute Myocardial Infarction (AMI)

AMI is caused by the complete or partial occlusion of a coronary artery and requires prompt hospitalization and extensive care management.

Clinical Features
Chest pain: Severe, retrosternal/epigastric crushing or burning or discomfort. Discomfort radiates to neck and down the inner part of the left arm lasting at least 20 minutes to 7 hours. Occurs at rest and is associated with pallor, sweating, arrhythmias, pulmonary oedema, and hypotension. May also occur with physical activity.

Management
- Support and maintain vital functions.
- Carry out cardio-pulmonary resuscitation (CPR).
- Administer 100% oxygen.
- Refer immediately to higher level.

3.3 Acute Rheumatic Fever

This is an acute, systemic connective tissue disease related to an immune reaction to untreated group A beta haemolytic streptococcus infection of the upper respiratory tract. The initial attack of acute rheumatic fever occurs in most cases in children aged 3–15 years. The major complication of this disease is the cardiac involvement, which can eventually lead to severe heart valve damage. This is the commonest cause of heart disease in Kenyan children.

Clinical Features
- Major criteria: Migrating polyarthritis, carditis (signs of cardiac failure, persistent tachycardia, pericardial rub, or heart murmurs), Sydenham's chorea, erythema marginatum, and subcutaneous nodules.
- Minor criteria: Past history of rheumatic fever, raised ESR, fever, arthralgia.
- Diagnosis: 2 major and 1 minor or 1 major and 2 minor manifestations.

Investigations
- Refer to higher level for further investigation.

Management
- Refer to higher level for management.

Prevention
- Early treatment of streptococcal sore throat with Benzathine penicillin 1.2 mega units STAT dose ***OR*** phenoxymethylpenicillin 125–250mg TDS for 10 days.

Prophylaxis
- Previous acute rheumatic fever without carditis: Give benzathine penicillin 1.2 mega units monthly for 5 years or up to the age of 18 years whichever is longer ***OR*** erythromycin 125–250mg BD for 5 years for those sensitive to penicillin.
- Previous acute rheumatic fever with carditis: Benzathine penicillin 1.2 mega units ***OR*** erythromycin 125–250mg BD for those sensitive to penicillin for life.
- Patient education: Emphasize need for follow up for prophylaxis.

3.4 Rheumatic Valvular Heart Disease

This is a complication of rheumatic fever. The main site of pathology is on the valves. There may be mitral stenosis, mixed mitral valve disease (both stenosis and incompetence), mitral incompetence, and/or aortic stenosis and

incompetence. Dyspnoea, palpitations, or heart murmurs may occur depending on the valvular lesion. Patients may be asymptomatic and may be discovered to have the lesion during routine examination or during periods of increased demand such as pregnancy or anaemia. Patients may present also with congestive cardiac failure.

Investigations
Refer to higher level.

Management
Refer.

Prophylaxis
- ***Rheumatic fever:*** All patients with a history of rheumatic fever should be given prophylaxis for recurrences, for life, with: Benzathine penicillin 1.2 mega units IM monthly ***OR*** amoxicillin 125–250mg PO BD ***OR*** erythromycin 125–250mg PO BD.

- ***Infective endocarditis prophylaxis:*** In addition to rheumatic fever prophylaxis the following are required:
  - Dental procedures: Amoxicillin 3.0g PO 2 hours before procedure and 1.5g PO 6 hours after the initial dose.
  - If penicillin allergy: Erythromycin 1g PO 2 hrs before procedure then half the dose 6 hours after the initial dose.
  - Lower gastrointestinal and genitourinary procedures: Amoxicillin 2g IM 30 minutes before procedure and 6 hrs after the initial dose + gentamicin 1.5mg/kg IM 30 minutes before procedure and 8 hrs after the initial dose.

Patient Education
- Emphasize need for follow up.
- Advise female patients on contraception.

Complications
- Congestive cardiac failure
- Pulmonary oedema
- Bacterial endocarditis

3.5 Hypertension

Hypertension is diagnosed when blood pressure (BP) reading is greater than 140/90mmHg on 3 separate readings.

Clinical Features
Majority of patients are asymptomatic. Occasionally patients may present with early morning occipital headaches, dizziness or complication of hypertension, e.g., renal failure, stroke, and heart failure. Majority of patients have essential hypertension. Table 3.1 summarizes the degrees of hypertension.

Table 3.1: Classification of hypertension

	Systolic (mmHg)		Diastolic (mmHg)
Optimal	<120	and	<80
Normal	<130	and	<85
High-normal	130–139	or	85–89
Stage 1 hypertension (mild)	140–159		90–99
Stage 2 hypertension (moderate)	160–179		100–109
Stage 3 hypertension (severe)	≥ 180		≥ 110

Note: Hypertension classification is based on the average of > 2 readings taken at each of two or more visits after initial screenings.

Investigations
Refer to higher level.

Management – General
Aim to reduce diastolic BP to 90mmHg; individualize treatment depending on age. Not all patients with hypertension need drug treatment. Non-pharmacological management includes:
- Weight reduction in obese patients
- Low salt diet
- Advising patients to give up smoking
- Regular dynamic exercises
- Low fat diet

Management – Pharmacological
Summary of plan for care in hypertension:
The choice of combination is no longer important. Presently, one combines multiple drugs from different classes starting at very low doses and where indicated, considering lipid lowering treatment in combination with antihypertensives to achieve a blood pressure of below 140/90mmHg. Refer to Table 3.2 for choices and dosages of drugs.

Table 3.2: Drug regimens for hypertension

Drugs	Daily dosages
Diuretics	
Thiazide diuretics	
– Hydrochlorothiazide (HCTZ)	6.25–25mg
– Chlorthalidone	6.25–25mg
Idapamide	1.25–5mg
Metalazone	2.5–5mg
Loop diuretics	
Frusemide	20–160mg
Bumetamide	0.5–2mg
Ethacrynic acid	25–100mg
Torsemide	2.5–20mg

Continued

Table 3.2, *continued*

Drugs	Daily dosages
Potassium sparing diuretic	
Amiloride	5–20mg
Triamtrene	25–100
Spironolactone	125–200mg
β-*blockers*	
Acebutolol	200–800mg
Atenolol	25–100mg
Metoprolol	50–200mg
Nadolol	20–320mg
Pindolol	10–60mg
Propranolol	40–160mg
Timolol	20–60mg
β/α-*blockers*	
Labetolol	200–1200mg
Carvedilol	6.25–50mg
Calcium channel blockers	
Amlodipine	2.5–10mg
Nifedipine XL	30–120mg
Felodipine	2.5–20mg
Nicardipine SR	30–120mg
Diltiazem CD	120–540mg
Verapamil HS	120–480mg
ACEIs	
Captopril	25–150mg
Enalapril	2.5–40mg
Lisinopril	10–80mg
Ramipril	2.5–20mg
Angiotensin receptor blockers	
Candersatan	8–32mg
Losartan	25–100mg
Valsartan	80–320mg
α-*blockers*	
Prazosin	1–40mg (2–3 divided doses)
Phenoxybenzamine	20–120mg (2 doses)
Sympatholytic agents	
Clonidine	0.2–1.2mg
Methyldopa	250–1000mg
Reserpine	0.05–0.25mg
Direct vasodilators	
Hydralazine	25–200mg
Minoxidil	2.5–100mg

3.6 Hypertensive Crisis

Sudden or sustained diastolic BP of more than 120mmHg with papilloedema, progressive decrease in renal function, and evidence of neurological dysfunction. Aim of treatment is to achieve diastolic BP of 100–110mmHg. BP should be

controlled within 1 hour in order to prevent permanent damage. However, rapid decrease of BP should be avoided to reduce risk of cerebral hypoperfusion.

Management
Refer to higher level.

Patient Education
Untreated hypertension has a high mortality rate due to: renal failure, stroke, coronary artery disease, and heart failure.

3.7 Pulmonary Oedema

This is an acute medical emergency caused by an increase in pulmonary capillary venous pressure leading to fluid in the alveoli, usually due to acute left ventricular failure.

Clinical Features
Breathlessness, sweating, cyanosis, frothy blood tinged sputum, respiratory distress, rhonchi, and crepitations.

Investigations
Refer to higher level.

Management – Pharmacological
This must be immediate:
- Prop up patient in bed.
- Administer 100% oxygen 3.5–5/L/min.
- Give IV frusemide 40mg initial, repeat with higher dose every 20–30 minutes to 200mg maximum total dose (see Section 38.2 for paediatric doses)
- If not already on digoxin, digitalize except if due to myocardial infarction (see Section 3.2).
- Give IV aminophylline 250–500mg slowly.
- Refer to higher level.

3.8 Deep Vein Thrombosis

Commonest site for DVT is the calf of the lower limbs followed by the pelvis. (See also Section 53.3.7, on DVT in pregnancy.)

Clinical Features
Pain usually of sudden onset; warmth on palpation, local swelling, tenderness. An extremity diameter of 2cm or greater than the opposite limb from some fixed point is abnormal. In DVT related to pregnancy and its complications as risk factors, the left lower limb is involved in over 80% of the cases. Diagnosis is mainly clinical.

Investigations
Refer.