National Guidelines for Reproductive Tract Infection Services

Republic of Kenya
MINISTRY OF HEALTH
National Guidelines
for Reproductive Tract Infection Services

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Reproductive tract infections (RTIs) is a broad term that includes sexually transmitted infections (STIs) as well as other infections of the reproductive tract that are not transmitted through sexual intercourse.

RTIs are found worldwide but are more common in resource-poor settings around the world. Transmission and prevalence are influenced by social and economic factors as well as by biology and behaviour. The burden of RTIs thus varies greatly from region to region, and from community to community. Where RTIs are common, so are their complications.

The consequences of RTIs for reproductive health can be severe and life-threatening. They include pelvic inflammatory disease (PID), infertility, ectopic pregnancy, and adverse pregnancy outcomes including miscarriage, stillbirth, preterm birth, and congenital infection. RTIs also increase the risk of HIV transmission and are a major cause of poor pregnancy outcomes.

Infection within the placenta or amniotic sac (chorio-amnionitis) due to endogenous or sexually transmitted organisms is a major cause of late spontaneous abortion and stillbirth. Infection may lead to pre-labour rupture of membranes and preterm delivery. Congenital infection due to syphilis, gonorrhoea, chlamydia, herpes simplex virus, hepatitis B and HIV can cause blindness, disability and/or death of the newborn.

Sexually transmitted infections as a major component of RTIs present a sizeable burden of disease in Kenya’s population, and they have also been shown to have a link with increased vulnerability to HIV infection. Drawing on national, regional and international experience and lessons learned in the area of sexually transmitted infections (STIs), Kenya’s National HIV/AIDS Strategic Plan for the period 2005 to 2010 identifies improved STI treatment as a key strategy for reducing the risk of both new STIs and HIV.

Following recommendations by the World Health Organisation, Kenya adopted the Syndromic Approach as standard practice to the diagnosis and treatment of sexually transmitted infections in 1990. The existing guidelines do not offer the service providers comprehensive information on other aspects of reproductive health such as preventive activities including “the-hard-to-reach” populations and those in difficult circumstances. Other limitations are that the existing materials do not give any guidance to health providers on how to address sexually transmitted infections in other health care settings such as antenatal care, family planning and postpartum care. In addition, the existing materials do not address counselling aspects of service delivery and the management of non-sexually transmitted infections whose prevalence is equally high especially among women in the reproductive age-bracket.

In response to these challenges, the Reproductive Health Research (RHR) Division of the World Health Organisation in collaboration with other stakeholders developed Guidelines for Essential Practice (GEP) for RTIs/STIs. These guidelines were developed with the aim of providing a standardised approach for the prevention, detection and management of reproductive tract infections in health service delivery settings such as family planning, antenatal care, delivery and postpartum care.
The Guidelines for Essential Practice can be used as reference materials by health care providers at “point of first contact” in a variety of settings with different prevalence of reproductive tract infections.

The process of adapting the WHO’s generic guidelines and incorporating them into existing reproductive health guidelines in Kenya was coordinated jointly by the Divisions of Reproductive Health (DRH) and the National AIDS/STDs Control Programme (NASCOP). The adaptation involved building consensus with key stakeholders involved in the prevention and control of sexually transmitted infections in Kenya. This tremendous effort has culminated into the development and production of “National Guidelines for RTI Services”. Kenya has now a one unified guide on the prevention, control and management of reproductive tract infections in our health facilities.

The document will also serve as a useful tool for guiding policy-makers, programme managers and service providers in various aspects of managing reproductive tract infections including service delivery issues to enable the public to receive comprehensive and effective services. A training manual for health workers as well as a student handbook has been developed to accompany the guidelines. It is hoped that the lessons learned from this process will be documented and shared with other sectors that are involved in planning and managing reproductive health programmes in the country.

I wish to take this opportunity to acknowledge the substantial support we received from our development partners namely, USAID, the World Health Organisation, Population Council’s Frontiers in Reproductive Health Programme (FRONTIERS) and UNFPA towards the development and finalisation of the guidelines as well as the accompanying training manual for health workers and a student handbook. I also wish to thank all individuals and institutions that participated at various stages of the development of these materials.

We are optimistic that the widespread dissemination and utilisation of these guidelines will enable many Kenyans have access to an improved service that seeks to reduce the incidence and prevalence of reproductive tract infections including the risk associated with new HIV infection.

Dr. James W. Nyikal, MBS
Director for Medical Services
Ministry of Health
Acknowledgements

This practice guide has been developed for use by primary healthcare providers in reproductive health care settings. The development of this guide has been through a collaborative effort of Ministry of Health, Department of Reproductive Health (DRH) and National AIDS/STI Control Programme (NASCOP), and the Population Council’s Frontiers in Reproductive Health Programme (FRONTIERS). It is based on the work of a large group of experts, who participated in consultative meetings and review workshops. The Ministry of Health would like to thank all the members of the National RTI Working Group, Health Development Associates (HDA) consultants and the respective institutions (listed under Appendix III), for their valuable inputs at various stages of developing the RTI Guidelines.

We wish also to take this opportunity to acknowledge the substantial support that we received from our development partners namely, USAID, the World Health Organisation, the Population Council’s Frontiers in Reproductive Health programme (FRONTIERS), and UNFPA towards the development and finalisation of the guidelines as well as the accompanying training materials.
EXECUTIVE SUMMARY

Reproductive Tract Infections (RTIs) are among the most important causes of maternal and infant morbidity and mortality. Serious complications of RTIs include ectopic pregnancy, pelvic inflammatory disease, preterm labour, pregnancy loss, congenital infection, infertility, genital cancer and AIDS. The huge disease burden caused by RTIs is attributed to both their direct effects on the morbidity and mortality as well as the serious complications these infections impose on infected persons.

Although syndromic approach to diagnosis and treatment of STIs has been used widely in the country since 1990s, integration of these guidelines into existing policies and service delivery guidelines for other reproductive health services has been lacking. Due to this there have been many missed opportunities for STI prevention and care. In addition, the previous guidelines did not offer the service provider comprehensive information on:

- STI prevention, serving special populations (e.g. adolescents, men), and in difficult circumstances (e.g. rape).
- Guidance on addressing STIs in other primary health care settings (ANC/FP/PNC)
- How to provide counselling and management of non-sexually transmitted STIs/RTIs which are very common in all populations.

In response to these challenges and because of the current global shift on focus from STIs to RTIs in the national health programme, National Guidelines for Reproductive Tract Infection Services have been developed. The aim of these guidelines is to provide standardised guidance for the prevention, detection and management of RTIs in reproductive health service settings, such as family planning, antenatal care, delivery and postpartum care. These guidelines will also help to ensure that the prevention and management of STIs/RTIs become a priority in Kenya.

The guide covers seven chapters as follows:

- The burden of Reproductive Track Infections/Sexual Transmitted Infections,
- Integrating RTI Management into RH Services,
- Health Promotion,
- Prevention and Control of RTIs,
- Clinical Approach,
- Management of RTIs/STIs, and
- Special Cases (e.g. Sexual Violence and Rape).

Despite the apparent weaknesses of the syndromic approach to diagnosis and treatment of STIs as mentioned, because of its practical importance it has been included in chapter six of this document, which deals with management of STIs/RTIs.

In addition, the guide also covers laboratory management of STIs/RTIs and provides a list of additional resources and a glossary of terms.
The Guide is intended to be used as a reference manual, and a resource to educate and to remind health care workers of the need to consider STIs/RTIs when providing other reproductive health services. It recommends prevention and care practices for patients who have or may be at risk of acquiring a reproductive tract infection. As such, it could be used for pre-service or in-service health provider education and training, as a source of up-to-date, evidence-based recommendations and as a self-education tool for health care providers on the prevention, treatment and diagnosis of STIs/RTIs. It can be used as a starting-point for improving policies, programmes and training on the prevention and management of STIs/RTIs. The Guide can also serve as a vital source of information for adapting clinical and management approaches with regard to RTIs to local conditions where appropriate.

Throughout the Guide, important steps in decision-making are explained in the text, and most recommendations are presented in flowcharts and tables. Although flowcharts can help to simplify complex problems and permit a standardised approach to management of STIs/RTIs, no flowchart can cover all possible clinical situations. Health care providers need to be able to recognise when to put the flowcharts aside and seek additional help. While this Guide will help health care providers to deal effectively with STI/RTI-related problems, knowing when to look beyond them can only be learned from experience.

This Guide will also serve as a useful tool for guiding policy-makers, programme managers and service providers in various aspects of managing reproductive tract infections including service delivery issues to enable the public to receive comprehensive and effective services. A training manual for health workers as well as a student handbook have been developed to accompany the guidelines.

The Guide has been developed through a consultative process involving the Division of Reproductive Health, NASCOP, and other institutions involved in the prevention and control of reproductive track infections including STIs. The approach used in developing the guidelines was through working groups whose members were drawn from MOH, training institutions, NGOs, donors and the private sector. It is hoped that the lessons learned from this process will be documented and shared with other sectors that are involved in planning and managing reproductive health programmes in the country.
## ABBREVIATIONS AND ACRONYMS USED IN THIS GUIDE

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<th>Description</th>
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<td>Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>ANC</td>
<td>Antenatal Care</td>
</tr>
<tr>
<td>ARV</td>
<td>Antiretroviral drugs</td>
</tr>
<tr>
<td>BV</td>
<td>Bacterial vaginosis</td>
</tr>
<tr>
<td>CA</td>
<td>Candida albicans (Yeast Infection)</td>
</tr>
<tr>
<td>CHW</td>
<td>Community Health Worker</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon Dioxide</td>
</tr>
<tr>
<td>CRP</td>
<td>C-reactive protein</td>
</tr>
<tr>
<td>DHMT</td>
<td>District Health Management Team</td>
</tr>
<tr>
<td>DRH</td>
<td>Division of Reproductive Health</td>
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<tr>
<td>EC</td>
<td>Emergency Contraception</td>
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<tr>
<td>ELISA</td>
<td>Enzyme-Linked Immunosorbent Assay</td>
</tr>
<tr>
<td>Endo</td>
<td>Endogenous</td>
</tr>
<tr>
<td>FP</td>
<td>Family Planning</td>
</tr>
<tr>
<td>FTA-Abs</td>
<td>Fluorescent Treponema Antibody Absorption Test</td>
</tr>
<tr>
<td>GUD</td>
<td>Genital Ulcer Disease</td>
</tr>
<tr>
<td>HBV</td>
<td>Hepatitis B Virus</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>HPV</td>
<td>Human Papilloma Virus</td>
</tr>
<tr>
<td>HSV</td>
<td>Herpes Simplex Virus</td>
</tr>
<tr>
<td>Iatrogenic</td>
<td>Iatrogenic</td>
</tr>
<tr>
<td>IEC</td>
<td>Information, Education and Communication</td>
</tr>
<tr>
<td>IM</td>
<td>Intramuscular</td>
</tr>
<tr>
<td>IU</td>
<td>International Units</td>
</tr>
<tr>
<td>IUCD</td>
<td>Intrauterine Contraceptive Device</td>
</tr>
<tr>
<td>IV</td>
<td>Intravenous</td>
</tr>
<tr>
<td>LGV</td>
<td>Lymphogranuloma Venereum</td>
</tr>
<tr>
<td>MCH</td>
<td>Maternal and Child Health</td>
</tr>
<tr>
<td>MCH/FP</td>
<td>Maternal and Child Health/ Family Planning</td>
</tr>
<tr>
<td>MHA-TP</td>
<td>Microhaemagglutination Assay for Antibodies to Treponema Pallidum</td>
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<tr>
<td>MTCT</td>
<td>Mother-To-Child Transmission of HIV</td>
</tr>
<tr>
<td>MVA</td>
<td>Manual Vacuum Aspiration</td>
</tr>
<tr>
<td>LMP</td>
<td>Last Menstrual Period</td>
</tr>
<tr>
<td>LNMP</td>
<td>Last Normal Menstrual Period</td>
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<td>NASCOP</td>
<td>National AIDS and STI Control Programme</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<tr>
<td>PCR</td>
<td>Polymerase Chain Reaction</td>
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<td>PEP</td>
<td>Post-exposure Prophylaxis</td>
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<td>PHC</td>
<td>Primary Health Care</td>
</tr>
<tr>
<td>PID</td>
<td>Pelvic Inflammatory Disease</td>
</tr>
<tr>
<td>PMTCT</td>
<td>Prevention of Mother-To-Child Transmission of HIV</td>
</tr>
<tr>
<td>ROM</td>
<td>Rupture of Membranes</td>
</tr>
<tr>
<td>RPR</td>
<td>Rapid Plasma Reagin</td>
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<tr>
<td>RTI</td>
<td>Reproductive Tract Infection(s)</td>
</tr>
<tr>
<td>STI</td>
<td>Sexually Transmitted Infection(s)</td>
</tr>
<tr>
<td>TBA</td>
<td>Traditional Birth Attendant</td>
</tr>
<tr>
<td>TPHA</td>
<td>Treponema Pallidum Haemagglutination Test</td>
</tr>
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</table>
TV  Trichomonas Vaginalis
UTI  Urinary Tract Infection
VCT  Voluntary Counselling and Testing
VDRL  Venereal Disease Research Laboratory
WBC  White Blood Cells
WHO  World Health Organisation
ABOUT THE GUIDE

This Guide has been developed for use in reproductive health care settings (family planning and maternal and child health care clinics) and focuses on women, as they are the “traditional” clients in these settings. Unlike men, women rarely go to STI clinics with their problems, and are often asymptomatic if infected. Visits to their reproductive health care provider may be their only contact with the health care system. However, throughout the document men and adolescents are also considered, given the need to reach out and offer prevention services to these groups, in order to achieve favourable public health outcomes through the prevention and treatment of STIs/RTIs.

The Guide is intended to be used as a reference manual, and a resource to educate and to remind health care workers of the need to consider STIs/RTIs when providing other reproductive health services. It recommends prevention and care practices for patients who have or may be at risk of acquiring a reproductive tract infection. As such, it could be used for pre-service or in-service health provider education and training, as a source of up-to-date, evidence-based recommendations, and as a self education tool for health care providers on the prevention, treatment and diagnosis of STIs/RTIs.

It can be used as a starting-point for improving policies, programmes and training on the prevention and management of STIs/RTIs, adapting the information and recommendations as needed to local conditions.
WHY GUIDELINES FOR REPRODUCTIVE TRACT INFECTIONS SERVICES

The syndromic approach to diagnosis and treatment of STIs was adopted in Kenya in the 1990s from WHO recommendations and has been used widely in the country. Although national guidelines for management of STI patients were developed in 1989, these have not been integrated into existing policies and service delivery guidelines for other reproductive health services. The result has been many missed opportunities for STI prevention and care. In addition, these guidelines do not offer the service provider comprehensive information on:

- STI prevention, serving special populations (e.g. adolescents, men), and in difficult circumstances (e.g. rape).
- Guidance on addressing STIs in other primary health care settings (ANC/FP/ post natal care)
- How to provide counselling and management of non-sexually transmitted RTIs which are very common in all populations.

In response to these challenges and because of the current global shift on focus from STIs to RTIs in the national health program, these guidelines have been developed with the aim of providing standardised guidance for the prevention, detection and management of STIs/RTIs in reproductive health service settings such as family planning, antenatal care, delivery and postpartum care, and ensuring that the prevention and management of STIs/RTIs becomes a priority in Kenya.

TERMINOLOGY

Reproductive tract infection is a broad term that includes sexually transmitted infections as well as other infections of the reproductive tract that are not transmitted through sexual intercourse. Not all sexually transmitted infections are reproductive tract infections (HIV, Hepatitis B and C are STIs that are not RTIs); and not all reproductive tract infections are sexually transmitted (iatrogenic and endogenous infections are RTIs not transmitted sexually). However, because STIs have in most cases had more severe health consequences than other RTIs, the term STIs/RTIs has been used throughout this guide to highlight the importance of STIs within reproductive tract infections. Where the discussion topic specifically refers to sexually transmitted infections, the term STI is applied. HIV has not been extensively covered but references to HIV are made where deemed necessary.
How to Use This Guide

This Guide is presented in seven chapters:

Chapter 1 provides background information on the burden of STIs/RTIs and their complications. It covers what they are, describes the types of STIs/RTIs identified and why they are important. It also describes the prevalence patterns as seen in Kenya and outlines some of the serious health problems that result from STIs/RTIs.

Chapter 2 describes how to approach STIs/RTIs as an integral part of reproductive health services. It includes information on reducing risk, detecting infection and preventing complications during routine clinic visits for pregnancy, postpartum care and family planning.

Chapter 3 deals with issues on health promotion, discussing the goals of health promotion and the question of privacy and confidentiality. General skills for STI/RTI education and counselling skills are described as part of the promotion of prevention of STIs/RTIs and the promotion of the use of services. It also looks at some issues of importance for men, adolescents and young people who do not typically use reproductive health services. The role of self-treatment in the control of STIs is considered as is the approach to reaching sex workers, those with multiple sexual partners and other client groups.

Chapter 4 describes how RTIs spread and how they can be managed. It includes aspects of practices and behaviour patterns/change that can help in the prevention of STIs. There is background public health information for the specific prevention and care issues that are covered in more detail in subsequent chapters. This chapter also reviews the basic skills and knowledge that health care providers should have in order to detect and prevent STIs/RTIs.

Chapter 5 addresses the clinical approach to STI/RTI management. It stresses the importance of proper history taking, physical examination and correct specimen collection and handling, using a problem-oriented approach that permits rapid access to information. Specific problems that may be discovered during reproductive health care visits are also considered here.

Chapter 6 introduces the syndromic management and attempts to explain the rationale behind the syndromic approach. Each syndrome is therefore discussed in detail and the syndromic management steps are outlined. The use of flowcharts for management of each syndrome is explained in each subsection.
Chapter 7 deals with management of special cases such as sexual violence/assault covering the medical and other care for survivors of sexual assault, emergency contraception and post exposure prophylaxis for both STIs and HIV.

Throughout the Guide, important steps in decision-making are explained in the text, and most recommendations are presented in flowcharts and tables. Although flowcharts can help to simplify complex problems and permit a standardised approach to management of STIs/RTIs, no flowchart can cover all possible clinical situations. Health care providers need to be able to recognise when to put the flowcharts aside and seek additional help. While this Guide will help health care providers to deal effectively with STI/RTI-related problems, knowing when to look beyond them can only be learned from experience.
CHAPTER 1 THE BURDEN OF STIs/RTIs

1.0 Introduction
Reproductive tract infections are infections of the genital tract. They affect both women and men. Some RTIs (such as syphilis and gonorrhoea) are sexually transmitted, but many are not. In women, overgrowth of endogenous microorganisms normally found in the vagina may cause RTIs (yeast infection, bacterial vaginosis). Medical interventions may provoke iatrogenic infections in several ways - endogenous organisms from the vagina or sexually transmitted organisms in the cervix may be pushed upwards during a transcervical procedure into the upper genital tract and cause serious infection of the uterus, fallopian tubes and other pelvic organs.

Organisms from outside the body can also be introduced into the upper genital tract during medical procedures if infection control is poor. In men, sexually transmitted infections are much more common than endogenous or iatrogenic infections.

These different categories of infections are included together for the following reasons:
- Prevention of STIs/RTIs and their complications require a common approach within reproductive health services.
- The clinical appearance of different STIs/RTIs overlaps, especially in women. Symptoms noticed by patients, and even the clinical signs found by health care providers, are often similar, making the distinction between sexually and non-sexually transmitted RTIs difficult.
- In reproductive health settings such as antenatal and family planning clinics, non-sexually-transmitted RTIs are usually more common than STIs. Different approaches to management are needed to provide appropriate care and minimise stigma. Health care providers should recognise that labelling a condition as sexually transmitted may be inaccurate and may have serious social consequences for the couple.

Table 1.1 gives differences between the three types of RTIs.
Table 1.2 lists some common syndromes caused by infections that primarily affect the reproductive tract. Some are sexually transmitted, others are not. Some can be easily cured using antibiotics or other agents, while others are incurable. An understanding of these differences is essential in order to provide effective care and good advice to patients with reproductive tract complaints. The table does not include STIs such as HIV and hepatitis B, which are not clearly linked to one distinct syndrome.
<table>
<thead>
<tr>
<th>RTI Syndrome</th>
<th>STI/RTI</th>
<th>Organism</th>
<th>Type</th>
<th>Sexually transmitted</th>
<th>Curable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genital ulcer</td>
<td>Syphilis</td>
<td>Treponema pallidum</td>
<td>bacterial</td>
<td>Yes</td>
<td>Yes</td>
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<td>Chancroid</td>
<td>Haemophilus Ducreyi</td>
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<td>Herpes</td>
<td>Herpes simplex virus (HSV-2)</td>
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<td>Granuloma inguinale (chancroid)</td>
<td>Klebsiella granulomatis</td>
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<td>Lymphogranuloma Venereum</td>
<td>Chlamydia trachomatis</td>
<td></td>
<td>bacterial</td>
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<td>Yes</td>
</tr>
<tr>
<td>Discharge</td>
<td>Bacterial vaginosis</td>
<td>multiple</td>
<td>bacterial</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Yeast infection</td>
<td>Candida albicans</td>
<td></td>
<td>fungal</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Gonorrhoea</td>
<td>Neisseria gonorrhoea</td>
<td></td>
<td>bacterial</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Chlamydia</td>
<td>Chlamydia trachomatis</td>
<td></td>
<td>bacterial</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>Trichomonas vaginae</td>
<td></td>
<td>protozoa</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Other</td>
<td>Genital warts</td>
<td>Human papillomavirus (HPV)</td>
<td>virus</td>
<td>Yes</td>
<td>No</td>
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</tbody>
</table>
1.1 Why STIs/RTIs are important

1.1.1 STIs/RTIs are common

STIs/RTIs are found worldwide but are more common in some areas. WHO estimates that over 340 million new cases of four curable STIs (gonorrhoea, chlamydia, syphilis and trichomoniasis) occurred in 1999. If viral STIs such as human papilloma virus (HPV), herpes simplex virus (HSV) and human immunodeficiency virus (HIV) infections are included, the number of new cases may be three times higher. Among women, non-sexually transmitted RTIs are even more common.

Transmission and prevalence (how common they are) are influenced by social and economic factors as well as by biology and behaviour. The burden of STIs/RTIs thus varies greatly from region to region, and from community to community. Where STIs/RTIs are common, so are their complications.

- STIs such as syphilis, gonorrhoea and chancroid spread more rapidly in places where communities are disrupted, irresponsible sexual behaviour, concurrent multiple sexual partnership, where migrant labour is common and commercial sex networks are active.
- Iatrogenic infections are more common where there are many STIs, and where health care providers do not have the training or supplies to perform procedures safely. Postpartum and post-abortion infections are more common where safe services and follow-up care are not available.
- Endogenous infections such as yeast infection and bacterial vaginosis are common worldwide and are influenced by environmental, hygienic, hormonal and other factors.

1.1.2 STIs/RTIs in Kenya

The epidemiology of RTI in Kenya is poorly understood due to an inadequate reporting system in our health institutions. With adoption of the syndromic approach in the country, the prevalence of STIs/RTIs should be reported in syndromes. Data available from NASCOP on genital ulcer disease (GUD), vaginal and urethral discharge reveals that STIs/RTIs are common in the population. The trend from 1990-2000 of the GUD and the vaginal discharge in 32 HIV sentinel surveillance sites among patients seen with complaints of RTIs/STIs is shown in graph 1.3. During this period the prevalence rates of vaginal discharge and genital ulcer diseases was between 11-28% and 20-37% respectively.
Other data available are from population-based and facility or convenience-based studies. This data are variable and cannot be compared as different sampling methods, laboratory procedures and criteria were used for diagnostic purposes. These studies have reported the prevalence of STIs/RTIs using aetiological classification. Additionally, these studies have been mainly conducted in certain geographical regions targeting specific subpopulations such as truck drivers and commercial sex workers living in urban areas especially Nairobi and Mombasa and are therefore not representative of the whole country. However these studies can be used to give an insight on the prevalence of STIs/RTIs in the population studied and in certain target groups.

In one population study done in 1999 amongst non pregnant women aged between 18-50 years working in tea plantations in western Kenya near Kericho, in the Nandi Hills, near Naivasha and in central Kenya near Thika, the prevalence of gonorrhoea (GC), chlamydia (CT), and trichomoniasis (TV) was 2.6%, 3.2%, and 20.4% respectively. The overall RTI/STI prevalence rate in this population was 23.9% (P J Feldblum et al 1999). In another study done involving 906 family planning and 815 antenatal clients in Nakuru, the prevalence rate for gonorrhoea, chlamydia, trichomoniasis, candidiasis, and bacterial vaginosis was 2.6%, 5.7%, 8.0%, 16.7% and 33.4% in FP clients and 3.7%, 7.1%, 14.4%, 33.9% and 29.5% in ANC clients.
Reported prevalence rates of bacterial, protozoal and viral infections among men and women in facility based studies are indicated in Table 1.4. Most of the studies were conducted in urban areas especially in Nairobi and Mombasa and mostly involved either women attending antenatal clinics, female sex workers or men working as long distance drivers. Although these studies involved few study participants the prevalence of STIs in high risk and low risk groups can be deduced from them. From these studies the prevalence rates for gonorrhea is estimated to be 4.9% with a range of 1.8-8%, Chlamydia trachomatis 7.3% with a range of 3.6 – 11%, trichomoniasis 11.2% with a range of 2-20.4%, bacterial vaginosis is 29% with a range of 9-49% and syphilis 5.8% with a range of 2-9.5%.

### Table 1.4 Prevalence rates (%) of STIs/RTIs from Published Studies

<table>
<thead>
<tr>
<th>Population</th>
<th>Study Details</th>
<th>Year</th>
<th>n</th>
<th>GC</th>
<th>CT</th>
<th>TV</th>
<th>RPR</th>
<th>BV</th>
<th>HD</th>
<th>HSV-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Risk Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANC client</td>
<td>Thomas T et al 1993 281</td>
<td>1993</td>
<td>281</td>
<td>2.4%</td>
<td>6.6%</td>
<td>13.3%</td>
<td>-</td>
<td>20.6%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ANC client</td>
<td>Thomas T et al 1998 6131</td>
<td>1998</td>
<td>6131</td>
<td>-</td>
<td>-</td>
<td>5.3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Low risk female</td>
<td>Ton dik et al 1997 621</td>
<td>1997</td>
<td>621</td>
<td>7%</td>
<td>3%</td>
<td>23%</td>
<td>7%</td>
<td>3%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ANC</td>
<td>Githand P et al 1998 12414</td>
<td>1998</td>
<td>12414</td>
<td>-</td>
<td>-</td>
<td>3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Infant of RPR+ Mothers</td>
<td>Githand P et al 1998 12414</td>
<td>1998</td>
<td>12414</td>
<td>-</td>
<td>-</td>
<td>6%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>FDR</td>
<td>Githand G et al 1993 133</td>
<td>1993</td>
<td>133</td>
<td>2.0%</td>
<td>3%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>GUD Clients</td>
<td>Melna O et al 1993 245</td>
<td>1993</td>
<td>245</td>
<td>2.0%</td>
<td>3%</td>
<td>23%</td>
<td>31%</td>
<td>18%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Low risk female</td>
<td>Tiedebliem et al 2000 1982</td>
<td>2000</td>
<td>1982</td>
<td>2.0%</td>
<td>3%</td>
<td>23%</td>
<td>31%</td>
<td>18%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>FSWU</td>
<td>Leaess L et al 2000 630</td>
<td>2000</td>
<td>630</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>44.1%</td>
<td>-</td>
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</tr>
<tr>
<td>FSWU</td>
<td>Mosied S et al 2000 271</td>
<td>2000</td>
<td>271</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>17%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Low risk female</td>
<td>Non dik et al 2002 530</td>
<td>2002</td>
<td>530</td>
<td>3%</td>
<td>6%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>High Risk Group</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>FDR client</td>
<td>Githand G et al 1993 179</td>
<td>1993</td>
<td>179</td>
<td>21%</td>
<td>3%</td>
<td>12%</td>
<td>-</td>
<td>43%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>STI</td>
<td>Mbuiga-Aguda 1993 1287</td>
<td>1993</td>
<td>1287</td>
<td>-</td>
<td>-</td>
<td>24%</td>
<td>43%</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>CTI Females</td>
<td>Ton dik et al 1993 520</td>
<td>1993</td>
<td>520</td>
<td>8%</td>
<td>4%</td>
<td>25%</td>
<td>8%</td>
<td>16%</td>
<td>-</td>
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</tr>
<tr>
<td>FSWU</td>
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<td>2000</td>
<td>319</td>
<td>8%</td>
<td>7%</td>
<td>13%</td>
<td>8%</td>
<td>46%</td>
<td>-</td>
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</tr>
<tr>
<td>FSWU</td>
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<td>2001</td>
<td>562</td>
<td>10%</td>
<td>9%</td>
<td>15%</td>
<td>5%</td>
<td>49%</td>
<td>-</td>
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</tr>
<tr>
<td>FSWU</td>
<td>Njoroge N et al 2002 303</td>
<td>2002</td>
<td>303</td>
<td>8%</td>
<td>4%</td>
<td>2.0%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ANC</td>
<td>Githand P et al 1997 253</td>
<td>1997</td>
<td>253</td>
<td>-</td>
<td>-</td>
<td>9.5%</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>FSWU</td>
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<td>2004</td>
<td>693</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>72.7%</td>
<td>-</td>
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</tr>
<tr>
<td>Trucker</td>
<td>Falor J et al 1983 301</td>
<td>1983</td>
<td>301</td>
<td>41%</td>
<td>-</td>
<td>8%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Trucker</td>
<td>Falor J et al 1987 301</td>
<td>1987</td>
<td>301</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>29.5%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>STI males</td>
<td>Tenkat M et al 1984 200</td>
<td>1984</td>
<td>200</td>
<td>8%</td>
<td>11%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Trucker</td>
<td>Falor J et al 1997 504</td>
<td>1997</td>
<td>504</td>
<td>3%</td>
<td>4%</td>
<td>3.6%</td>
<td>3.0%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Trucker</td>
<td>Bantar JN et al 2002 1061</td>
<td>2002</td>
<td>1061</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>43%</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Key:** GC: genital ulcer, CT: Chlamydia trachomatis, TV: Trichomonas vaginalis, RPR: rapid plasma reagin, BV: bacterial vaginosis, HD: haemophilus ducreyi, HSV-2: Herpes simplex virus
The prevalence rates of STIs/RTIs are high not only among high-risk population groups but also among the low-risk groups. The mean prevalence rates for GC, CT, TV, BV and syphilis in the low risk group are 4.7% (2.4-7%), 6.1% (3.2-9%), 21.5% (19.9-23%), 4.8% (9-20.6%) and 5% (3-7%) respectively compared to 4.9% (1.8-8%), 22.3% (3.6-41%, 15.5% (6-25%), 32.5% (16-49%) and 5.8% (2-9.5%) respectively in the high risk group. These figures are not very different from those arising from population studies but BV seems to be more prevalent in the high risk groups. The mean prevalence rates for GC and CT among high risk male subjects were 4.7% (3.4-6%) and 22.3% (3.6-41%) respectively.

### 1.1.3 STIs/RTIs cause serious health problems

The consequences of STIs/RTIs on reproductive health can be severe and life threatening. They include pelvic inflammatory disease (PID), infertility (in women and men), ectopic pregnancy, and adverse pregnancy outcomes including miscarriage, stillbirth, preterm birth and congenital infection. STIs/RTIs are also known to increase the risk of HIV transmission and acquisition.

Most STIs/RTIs can affect both men and women, although the consequences in women are more common and more severe than in men. In fact, STIs/RTIs and their complications are among the most important causes of illness and death for women in poor regions of the world. Infectious complications of pregnancy (post-abortion and postpartum infections) alone are estimated to cause about one-third of the 414 maternal deaths per 100,000 live births that occur in Kenya each year (KDHS 2003). Most of this preventable burden of disease is concentrated in low-income populations.

STIs/RTIs also cause poor pregnancy outcomes (Table 1.5). Infection within the placenta or amniotic sac (chorio-amnionitis) due to endogenous or sexually transmitted organisms is a major cause of late spontaneous abortion and stillbirth. Infection may lead to prelabour rupture of membranes and preterm delivery. Congenital infection due to syphilis, gonorrhoea, chlamydia, herpes simplex virus, hepatitis B and HIV can cause blindness, disability and death of the newborn.

Some of the most serious consequences of RTIs in women occur when an infection of the lower genital tract (cervix or vagina) or outside organisms reach the upper genital tract (uterus, fallopian tubes, ovaries and surrounding structures). Infection may become generalised and life threatening, and resulting tissue damage and scarring may cause infertility, chronic pelvic pain and increased risk of ectopic pregnancy.
Upper genital tract infection can develop at any time, but women are more vulnerable immediately following childbirth or abortion. Infectious complications of abortion and postpartum infection are major causes of maternal mortality and are largely preventable. Infertility often follows untreated pelvic inflammatory disease in women (Table 1.6), and epididymitis and urethral scarring in men. In fact, complications of RTIs are the most important preventable causes of infertility in regions where childlessness is most common. Repeated spontaneous abortion and stillbirth often due to RTIs such as syphilis are other important reasons why couples are unable to have children.

The tubal scarring and blockage that often follow PID may be total or partial. Fertilisation can still occur with partial tubal blockage but risk of implantation in the fallopian tubes or other site outside the uterus (ectopic pregnancy) is high. Ruptured ectopic pregnancy, along with complications of abortion and postpartum infection, is a common preventable cause of maternal death in places with high prevalence of STIs/RTIs and PID.
Other STIs/RTIs may also have serious or fatal consequences. Some types of human papilloma virus greatly increase the risk of cervical cancer, a leading cause of cancer deaths in women. AIDS is a consequence of HIV infection. HIV is much more easily transmitted and acquired sexually when other STIs/RTIs are present. Many regions with high HIV prevalence also have high rates of curable STIs/RTIs.

Most of the serious health problems caused by STIs/RTIs are preventable. Communities with good access to effective prevention and treatment services have lower rates of STIs/RTIs and complications than communities where services are poor, disrupted or not used by people at risk. Reducing the burden of STIs/RTIs requires more than good clinical management of individual patients, however. STIs/RTIs are transmitted in the community, and limiting interventions to clinic settings misses much of the problem.

<table>
<thead>
<tr>
<th>Common Syndromes</th>
<th>Aetiologic Agent</th>
<th>Type of agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urethritis, cervicitis, proctitis, PID</td>
<td>Nesseria gonorrhoeae</td>
<td>Bacteria</td>
</tr>
<tr>
<td>NGU, cervicitis, proctitis, PID</td>
<td>Chlamydia trachomatis</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Vaginitis, urethritis</td>
<td>Trichomonas vaginalis</td>
<td>Protozoa</td>
</tr>
<tr>
<td>Vaginitis, balanitis</td>
<td>Candida albicans, other Candida sp.</td>
<td>Fungal</td>
</tr>
<tr>
<td>Bacterial vaginosis</td>
<td>Gardnerella vaginalis, anaerobic bacteria</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Genital ulcer</td>
<td>Herpes simplex virus</td>
<td>Virus</td>
</tr>
<tr>
<td>Genital ulcer</td>
<td>Treponema pallidum</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Genital ulcer, bubo chancreoid</td>
<td>Haemophilus ducreyi</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Lymphogranuloma venereum (LGV), genital ulcer, turo</td>
<td>Chlamydia trachomatis (L1-L3, L6 immunotypes)</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Granuloma inguinale, donovanosis, genital ulcer</td>
<td>Calymmatobacterium granulomatis</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Dermatitis, ulcers, dermatitis molluscum contagiosum</td>
<td>Sarcoptes scabiei (Phthirus pubis suis)</td>
<td>Parasite</td>
</tr>
<tr>
<td>Genital warts (condylomata acuminata)</td>
<td>Human papilloma virus (HPV)</td>
<td>Virus</td>
</tr>
<tr>
<td>Enteritis, proctocolitis</td>
<td>Salmonella sp., Shigella sp., Campylobacter sp.</td>
<td>Protozoa</td>
</tr>
<tr>
<td>Enterocolitis</td>
<td>Entamoeba histolytica, Giardia lamblia</td>
<td>Protozoa</td>
</tr>
<tr>
<td>Viral hepatitis</td>
<td>Hepatitis virus: A, B, C</td>
<td>Virus</td>
</tr>
</tbody>
</table>
KEY POINTS

Reproductive tract infections (RTIs) are caused by organisms normally present in the reproductive tract, or introduced from the outside during sexual contact or medical procedures. These different but overlapping categories of RTI are called endogenous, sexually transmitted infections (STIs) and iatrogenic, reflecting how they are acquired and spread.

These infections can be caused by either bacterial, viral, fungal or protozoa (Table 1.6), and are very common; in women non-sexually transmitted are even more common.

STIs/RTIs are among the most important causes of maternal and perinatal morbidity and mortality. Serious complications of STI/RTIs – ectopic pregnancy, pelvic inflammatory disease, preterm labour, miscarriage, stillbirth, congenital infection—may lead to chronic disability (such as infertility and genital cancer) and death. Increased risk of HIV/AIDS is another consequence of STIs/RTIs.

To reduce the burden of RTI, efforts are needed in both health care facilities and in the community.

Effective prevention and case management practised by health workers reduce the STI/RTI burden in several ways. Effective treatment reduces STI transmission in the community and safe and appropriate clinical procedures mean fewer iatrogenic infections.

Community education and outreach are needed to promote prevention of infection and use of health care services and further reduce disease transmission within the community.
CHAPTER 2 INTEGRATING RTI MANAGEMENT INTO RH SERVICES

2.0 Introduction
The prevalence levels of many STIs/RTIs, including HIV, can be high for women seeking FP and antenatal services. Additionally most of these infections are frequently asymptomatic in women. MCH/FP services are provided by medically trained staff with many of the same skills needed for managing STIs/RTIs. Therefore integrating STI/RTI management such as STI screening, treatment and education into routine MCH/FP services can help in reaching many women whose primary connection with the healthcare system is only MCH/FP services.

2.1 Integrating RTI Management into FP services
Recognising that FP clinics are often the primary connection women of reproductive age and youth have with the health care system, and that reproductive tract infections are common, it is important for the FP service providers to counsel their clients on issues concerning STIs/RTIs.

This includes providing training and resource materials to aid providers in talking about sensitive issues and difficult topics and in raising the topic of dual protection, that is being protected from both unwanted pregnancies and STIs/RTIs including HIV and AIDS. The opportunities for addressing STIs/RTIs during the initial (method of choice) family planning visit and routine follow-up visits are different and are therefore treated separately.

Initial Visit
Women attending a FP clinic for the first time are usually interested in a method of contraception - they may already have a particular method in mind - and they may have other concerns as well. These concerns may or may not include STIs/RTIs. There are often many issues that need to be discussed before a woman can choose and be provided with a contraceptive method that meets her needs. STI prevention is one of the issues that should be addressed.

When Should the Subject of STIs/RTIs be introduced in the Initial FP Visit?
If the issues of STIs/RTIs are brought up too early, the woman may feel that her family planning needs are being ignored. If brought up too late, the choice of method may need to be reconsidered.

The following steps outline an approach to dealing with STI/RTI issues in the course of the first FP visit:
Starting with the client’s “reason for visit”, a health care provider follows several steps with the client to reach a decision about a suitable method. These steps include determining the woman’s preferred method, reviewing her medical eligibility for that method, assessing her risk of current or future STIs/RTIs, and providing her chosen method.

**Step 1: Discuss method preference**

Reason for visit: initial FP visit.

- Adapt your approach to STIs/RTIs to meet each woman’s needs.
- Method preference.
  - Ask if the woman already has a method in mind.

The woman’s initial method of preference is an important factor in subsequent successful use of a method. Women who are given their preferred method, use it longer and with greater satisfaction.

- Discuss contraceptive needs.

In discussing prevention of pregnancy, providers can introduce the idea of dual protection by mentioning that some methods provide better protection than others against STIs/RTIs.

- Discuss STI/RTI protection needs.

Invite the client to share her concerns about such infections. Open-ended, personalised questions (“Please tell me what concerns you have about infections that are spread by sex”) are better than closed questions (“Do you want information about STI?”) that can easily be dismissed with a simple “No”.

- Describe options and help woman to make a choice.

**Step 2: Look for STIs/RTIs**

- Assess for STI/RTI syndromes - by asking questions and/or doing examination.

After a woman has chosen one or two contraceptive methods depending on whether she requires single or dual protection, the health care provider should determine whether a more thorough examination or laboratory workup is needed to identify current infection. He/she should ask about vaginal discharge, genital ulcer, and lower abdominal pain, and whether the woman’s partner has symptoms of STIs. The flowcharts in Chapter 6 can be used to manage patients with such complaints.
A pelvic examination is not required for the provision of contraceptive methods other than the IUCD (to rule out pregnancy and infection and determine uterine size, shape and position), diaphragm/cervical cap (to fit the device) and sterilisation (to assess the size, position and mobility of the uterus). A speculum and bimanual examination can, however, be useful for evaluating STI/RTI concerns and detecting some asymptomatic infections.

- Consider STI risk, implications for contraceptive method, and need for dual protection. STI risk and the woman's need for protection should be reviewed at this point. She may change her method preference or add the condom to improve her protection against STIs. It is important to keep in mind that STI risk is difficult to assess accurately, and a negative risk assessment does not mean that the woman does not need to consider STI protection.

- Assess need for STI/RTI screening or treatment. The extent of the STI/RTI diagnostic or screening workup will depend on the resources available. Symptomatic women can be managed without laboratory tests. Where resources permit, screening for common asymptomatic STIs such as cervical infection, syphilis and HIV can be included in the protocol for the initial visit along with other “well-woman” screening methods, such as Pap smear. Following examination and STI/RTI screening, a woman may want to reconsider her previous choice of method to improve her STI protection.

The existence of a current STI/RTI is not in itself a reason to deny most methods (providers should offer treatment or referral and information or counselling on how to prevent future infection). Initiation of some methods, such as an IUCD and sterilisation, should be delayed until the STI is cured or in accordance with national guidance. During the treatment period, the woman should be advised to use condoms and, possibly, another contraceptive method.
**Step 3: Assess medical eligibility**
- Review medical eligibility for preferred method.

The suitability of the preferred method or methods should be evaluated.
- Help the client to revise method of preference as needed

**Step 4: Provide method(s)**
If the client chooses to use condoms, she will require counselling, demonstration of use, and skill building to ensure that she and her partner can use them properly and consistently. An IUCD should not be inserted if the woman has a cervical infection. Methods other than condoms do not protect against STIs and adequate counselling should be given on dual method use to add STI protection.

**RETURN VISITS**
Clients return to family planning clinic for follow-up visits for many reasons such as:
- Evaluation of method-related problems;
- Investigation of STI/RTI symptoms;
- Routine follow-up related to the contraceptive method;
- Routine visits for well-woman care.

Whatever the reason, a follow-up visit is an opportunity to assess how things are going in general, and specifically in relation to her need for contraceptive and STI/RTI protection. For STIs/RTIs, the woman should be asked about current symptoms, and whether her needs for STI/RTI protection have changed. Each follow-up visit is an opportunity to promote STI/RTI prevention through education and counselling.
2.2 Integrating RTI Management in Antenatal Services

STI/RTI prevention and management are as important during pregnancy as at any other time. A woman’s sexual activity may increase or decrease and exposure to infection may change. A number of STIs including syphilis, gonorrhoea, chlamydia, trichomoniasis, genital herpes and HIV can cause complications during pregnancy and contribute to poor pregnancy outcomes. Among endogenous infections, bacterial vaginosis is associated with preterm labour. Yeast infection is more common during pregnancy and, although it is not associated with any adverse pregnancy outcomes, the symptoms may be unpleasant and women should receive appropriate treatment. Upper genital tract infection may be a complication of spontaneous or induced abortion, preterm rupture of membranes, or may occur following delivery and may be life threatening.

Some of the most important STI/RTI-related problems in pregnancy including post abortion and postpartum infections, and congenital syphilis - are not technically difficult or expensive to manage or prevent altogether. Yet maternal and perinatal morbidity and mortality due to these problems remain high. Simple improvements in service delivery using available technology such as same-day, on-site syphilis screening in antenatal clinics can lead to dramatic improvements in pregnancy outcome. Treatment of symptomatic bacterial vaginosis can reduce the risk of preterm labour, and prevention and effective management of postpartum and post-abortion infections can reduce maternal morbidity and mortality. Women of reproductive age should be educated about the importance of early antenatal care and STI/RTI screening. Couples should be counselled during pregnancy on symptoms of preterm labour, safer sex practices and avoidance of other partners during the pregnancy. Antenatal clinic visits provide opportunities for preventing and detecting STIs/RTIs, and women should be encouraged to attend early in pregnancy.

Step 1: Initial assessment visit during pregnancy

- Ask the woman about symptoms of STIs/RTIs and whether her partner has urethral discharge or other symptoms. If the woman or her partner has symptoms, they should be managed using the flowcharts in Chapter 6.

- Serological syphilis testing using RPR or equivalent non-treponemal syphilis antibody test should be carried out as early as possible in pregnancy. Testing should be done on-site where possible, and the woman should receive her results and treatment before leaving the clinic. Treatment of her partner should also be encouraged and active assistance given if requested.
• Pregnant women with a history of spontaneous abortion or preterm delivery should be screened for bacterial vaginosis and trichomoniasis. Those who test positive should be treated (after the first trimester of pregnancy) with metronidazole 500 mg three times a day for seven days to reduce risk of adverse pregnancy outcome.

• Counselling and testing for HIV should be available on-site or through referral. Women who test positive should be referred to appropriate support services and advised on how to reduce the risk of mother-to-child transmission (MTCT).

• Prevention of STIs (including HIV) should be discussed with the woman and her partner in the context of ensuring a healthy pregnancy and protecting future fertility.

• Plans for delivery and the postpartum period should be discussed early in pregnancy. Infection with a viral STI such as HIV or HSV-2 may influence the birth plan. STI/RTI prevention needs should be discussed when considering options for postpartum family planning.

**Step 2: Follow-up antenatal visit**

When women return for follow-up antenatal visits, attention should be paid to STI/RTI prevention and detection since risk of infection may persist. As at the first visit, women should be asked about symptoms in themselves or their partners. Any symptomatic STIs/RTIs should be managed using the flowcharts.

• Syphilis testing should be repeated in late pregnancy, if possible, to identify women infected during pregnancy. All women should be tested at least once during each pregnancy, and all women with reactive serology should receive treatment.

• For women who are HIV positive, management during the antenatal period will depend on the specific PMCT protocol followed. Health care providers should review the birth plan and discuss options for infant feeding and postpartum contraception.
Prevention of STIs/RTIs should be stressed. The woman and her partner should understand that, regardless of previous treatment, an STI acquired in late pregnancy is capable of causing pregnancy complications and congenital infection. Condoms should be offered. Where partner treatment is indicated, it may be more readily accepted if offered as a precaution to ensure a safe delivery and healthy newborn.

2.3 Integrating RTI Management in Maternity Services

STI/RTI concerns during labour and delivery are few but potentially important. The objectives are to identify infection that may not have been detected during the antenatal period, and to intervene where possible to prevent and manage STIs/RTIs in the newborn.

- Look for signs of infection. Most STIs/RTIs are not emergencies and treatment can be delayed until after delivery. Vesicles or ulcers suggestive of a first episode of genital herpes (primary HSV-2 infection) near delivery may be an indication for Caesarean section since vaginal delivery carries a risk for the newborn of disseminated herpes, and a high risk of neonatal death. Where Caesarean section is not possible or would be unsafe, transport to a referral hospital should be considered if delivery is not imminent. Caesarean delivery is not beneficial if more than six hours have passed since rupture of the membranes.

- Genital warts, even when extensive, are not an indication for Caesarean delivery.

- Preterm rupture of membranes and rupture of membranes before the onset of labour require careful management to reduce risk of infection.

Manage HIV-infected women (including administration of antiretroviral treatment) according to national protocols.
Box 2.1 Universal Precautions During Childbirth
The following precautions are advised for every childbirth regardless of the HIV or STI/RTI status of the woman:

- Use gloves, carefully wash hands between procedures, and high-level disinfect or sterilise all instruments/equipment used in the process of delivery.
- Follow standard practice for the delivery, avoiding unnecessary vaginal examinations, minimising trauma, and actively managing the second stage of labour. Episiotomy should only be done for obstetric indications and not as a routine procedure. If assisted delivery is required, this should involve as little trauma as possible.
- Cut the umbilical cord under cover of a lightly wrapped gauze swab to prevent blood spurting. Do not apply suction to the newborn’s airway with a nasogastric tube unless there are signs of meconium. Mouth-operated suction should be avoided.
- Regardless of the HIV status of the mother, wear gloves when handling any newborn baby until maternal blood and secretions have been washed off. Immediately after birth, remove the mother’s blood as well as meconium with soap and water. All babies should be kept warm after delivery.

Postpartum care
It is as important to be aware of signs of infection following delivery as during pregnancy. Postpartum uterine infection is a common and potentially life-threatening condition, and early detection and effective treatment are important measures to prevent complications. All women are vulnerable to infection following delivery, and retained blood and placental tissue increase the risk. Other risk factors for infection include prolonged labour, prolonged rupture of membranes and manipulation during labour and delivery.

Women should be examined within 12 hours following delivery. When they are discharged from the health care facility, women should be advised to return to the clinic if they notice symptoms, such as:

- Fever
- lower abdominal pain
- foul-smelling discharge
- abnormal bleeding.
They should be given information on care of the perineum and breasts, and instructed on the safe disposal of lochia and bloodstained pads or other potentially infectious materials. Health care providers should be alert to signs of infection including fever, lower abdominal pain or tenderness and foul-smelling discharge.

- HIV-positive women may need continued care and support, including access to treatment and support in carrying out a substitute-feeding plan.

- If contraception was not discussed before delivery, it should be brought up early in the postpartum period. Planning for a suitable method should include consideration of need for STI/RTI protection. Dual protection should also be discussed with women who choose a long-term contraceptive method, such as an IUCD, following delivery.

2.4 Integrating Control of STIs in primary health care

The control of STIs can be effected in primary, secondary and tertiary prevention. **Primary prevention** means protecting a person from becoming infected. It has been shown that most STIs are transmitted from a reservoir of infected individuals and their sexual partners. Control targeted to this group will be highly effective. Everybody is susceptible to acquiring STIs although some behaviour exposes some individuals more than others. Young individuals are sexually more active, and therefore more likely to acquire STIs. **Secondary prevention** means the prompt detection, treatment, and contact tracing of asymptomatic cases. **Tertiary prevention** is the treatment of disease and management of complications.

The emphasis on primary prevention results in reducing the prevalence and duration of STIs and is thus the most cost effective in terms of money and manpower. Strategies to effect these three levels of prevention have the following components:

- Health education and promotion
- High degree of disease suspicion
- Clinical service and laboratory evaluation
- Appropriate treatment
- Partner tracing/patient counselling
- Training and research.
Many of these components can be integrated through the implementation of several of the elements of the national primary health care (PHC) programme. These include health education, control of endemic diseases, treatment of common conditions, supply of essential drugs and MCH/FP (especially through syphilis screening, distribution of condoms, assessment of urethral/vaginal discharge). Currently, the PHC programme operates at five levels of intervention: individual/family, community, location/division (dispensary/health centre), district, provincial/national. STI activities can be integrated as follows:

2.4.1 Individual/Family Level
A happy family life will remove the need for other sexual outlets. Children should be taught appropriate behaviour, which is presumably easier to effect than changing an existing behaviour. The parent(s) should therefore be able to:

- Recognise signs and symptoms of common STIs
- Understand the long-term ill effects of STIs
- Identify counselling resource persons
- Identify the nearest source of appropriate STI treatment and use only recognised health institutions
- Upon presentation of signs and symptoms, or after a suspicious contact, seek medical advice
- Advise contacts to seek medical advice
- Protect themselves against STIs through faithfulness to the partner and/or correct and consistent use of condoms
- Educate their children about sex and STIs
- Seek available information on STI treatment and prevention.

2.4.2 Community Level
The community health worker (CHW), traditional birth attendant (TBA) and herbalist should:

- Recognise genital ulcers and genital discharge and refer appropriately
- Participate in contact tracing and patient counselling
- Provide information to high risk groups and the general population concerning prevention of STIs and HIV infection, and their signs and symptoms
- Participate in and promote community based distribution of condoms
Take immediate corrective action then refer if necessary all ophthalmia neonatorum cases

Educate all young people about sex and sexuality.

2.4.3 Dispensary and health centre Level

The health workers should:

- Provide training and supervision of CHWs, TBAs and herbalists on the recognition of genital ulcers and discharge
- Supply condoms to the CHWs, TBAs and herbalists
- Manage STIs according to the national guidelines
- Refer patients appropriately
- Facilitate early disease detection and contact tracing
- Facilitate acceptance of STI patients in the community and remove the stigma attached to STIs. This is the only way to mobilise the STI patient to avail him/herself for prompt treatment.

2.4.4 District Level

The Distric Health Management Team (DHMT) should coordinate and integrate the district STI/RTI/HIV activities, including health education and training of health workers on skills. They should liaise with other agencies involved in the promotion and distribution of condoms.

2.4.5 Provincial/National Level

- The provincial/national team should develop activities along the lines stipulated in the National AIDS and STI Control Programme (NASCOP) and Division of Reproductive Health (DRH)
- The capacity should be established for laboratory quality assurance control from locational to national level
- The referral system described in this manual should be adequately developed
- Training programmes for the different levels should be provided
- Basic and operational research should be promoted.
KEY POINTS

- **Integrating STI/RTI management** such as STI screening, treatment and education, into routine MCH/FP services can help in reaching many women whose primary connection with the healthcare system is only MCH/FP services.

- STI/RTI prevention and concerns should be discussed with all family planning clients at each visit. **Dual protection** – against pregnancy and STI/RTI – should be promoted at every opportunity. **Condoms** can provide highly effective dual protection if correctly and consistently used.

- Women should be **asked about symptoms** of common STIs/RTIs; women with symptoms should be managed using the syndromic approach. Infection in pregnancy, following miscarriage, abortion or in the postpartum period can be life-threatening and must be managed aggressively and without delay.

- Ask about **symptoms in the partner**. Women with symptomatic partners should be treated, and treatment for the partner should be arranged.

- **Screening for STI/RTI** should be done whenever warranted – a blood test and a careful speculum and bimanual examination can identify many STIs/RTIs without symptoms.

- **Risk assessment** may help identify some women who need special attention with regard to STI, but a negative risk assessment does not mean that a woman is not at risk.

- Women should be encouraged to attend **antenatal clinic early** in pregnancy to allow timely detection and prevention of any problems, including STI/RTI.

- Prophylaxis for **ophthalmia neonatorum** should be given routinely to all newborn babies.
CHAPTER 3 HEALTH PROMOTION

3.0 Introduction

Health promotion is the process of enabling individuals and communities to increase control over the determinants of health and thereby improve their own health. Such a process requires the direct involvement of individuals and communities. This can be facilitated through information, education and communication (IEC) as related to the biological and psychosocial aspects of disease.

IEC aims to empower individuals and communities to make informed decisions towards their total well-being. IEC should aim to:

- Increase individual and community awareness and knowledge of STIs.
- Produce positive changes in the attitudes and behaviour towards the prevention of STIs.

Target Groups

STIs are particularly but not exclusively transmitted through indiscriminate sexual behaviour. However, to be effective, IEC efforts should be targeted towards specific segments of the population, such as:

- Groups exhibiting high risk behaviour:
  - Young people in and out of school
  - Commercial sex workers and their clients
  - Bar attendants
  - STI patients
  - Long distance truck drivers
  - Frequent travellers
  - Prisoners
- Groups to be screened for STIs:
  - Antenatal care attendees
  - Blood and tissue donors
  - Some family planning clinic attendees
- Technical persons and decision makers. There are key persons in the acceptance and dissemination of transmission control measures. They include:
  - Health workers
  - TBAs, CHWs, traditional healers
Social workers
Journalists
Teachers
Employers
Religious leaders
Organised group leaders
Administrators and policy makers
Non-governmental organisations (NGOs)
General public.

People may be at risk of STIs because of their behaviour, yet this behaviour may be difficult to change because of factors or circumstances including:

- Gender
- Cultural expectations
- Poverty
- Migration
- Family disruption
- Peer pressure.

These may limit their options and increase their vulnerability. To effectively reduce risk and vulnerability, people may need not only specific information about STI transmission but also support in making changes in their lives. Health care providers can help by providing:

- Health education during clinic visits
- Counselling to support people in changing behaviour
- Community education to raise awareness about STIs/RTIs and help change negative ideas and attitudes that may be barriers to healthy sexuality.

There is a big difference between health education and counselling. Health education is the provision of essential information and skills related to the prevention or treatment of STIs/RTIs. Counselling requires time to establish trust, assess the person’s individual situation, and relate prevention information directly to the person’s life.
3.1 Health Education

All patients need information about STIs/RTIs, how they are transmitted and how they can be prevented. Health care providers should express positive attitudes about sexuality and emphasise the benefits of enjoying a healthy sexual life while preserving health and fertility. A checklist of essential information that should be provided during patient education may be helpful (see box 3.1). In addition:

- If a client has come for family planning, she should be offered information about STIs/RTIs, how to prevent infection and how to recognise signs of infection. Stress that consistent condom use is the only way to avoid both pregnancy and exposure to sexually transmitted infections (dual protection).

- If the patient is pregnant, she needs to understand the importance of preventing STIs/RTIs in pregnancy and of detecting syphilis, HIV and other infections that could be a danger to her or the pregnancy.

- Patients who come to the clinic with STI/RTI symptoms should be urged to follow recommended treatment, discuss prevention and, if the infection is sexually transmitted, refer partners for treatment.
Box 3.1 Checklist: What Patients Should Know

Information about STI/RTI
- How STIs are passed between people (but other RTIs are not)
- Consequences of STI/RTI including infertility and pregnancy loss
- Links between STI, HIV, and behaviours that spread both.

Prevention of STI
- Where to get condoms
- Using condoms consistently and correctly (especially with new partners)
- Limiting number of partners
- Delaying sex (adolescents)
- Using alternatives to penetrative sex
- Negotiating skills.

Healthy sexuality
- Normal biological and emotional changes
- Benefits of a healthy sexual life
- When and how to seek advice about problems.

STI/RTI symptoms
- What to look for and what symptoms mean
- Early use of clinic services.

STI/RTI treatment
- How to take medications
- Abstaining or having protected sex during treatment
- Importance of partner referral
- Signs that call for a return visit to the clinic.

3.2 Privacy and Confidentiality
Privacy and confidentiality are essential for all aspects of patient care - history taking, examination, education and counselling. This is especially true for potentially stigmatizing conditions such as STIs/RTIs.
All patients have a right to privacy and confidential services, but some such as adolescents, sex workers, refugees and others who live or work in illegal or marginalised settings may feel a particular need to know that services are confidential. Adolescents, especially those who are unmarried, often do not use services because they feel providers will be judgemental or disapproving and might reveal information to parents or elders. Patients will avoid a health care facility altogether sometimes travelling to a distant clinic to preserve anonymity if they feel that their privacy and confidentiality are not respected or that service providers are critical and judgemental.

3.3 Making Space for Privacy
Assuring visual and auditory privacy and confidentiality can be difficult in many health care settings, especially those that are busy or crowded, but it is essential. The space where interviews, examinations and counselling take place should be separated from waiting rooms, so that people waiting cannot see or hear what takes place between the provider and the patient. Forms and records should be stored securely and clinic staff should avoid talking about patients both inside and outside the clinic. Patients should be treated with the same respect whether or not an STI is detected or suspected, and regardless of age or marital status. Where health care providers are likely to know patients’ extended families or neighbours, they must take extra care to reassure patients (and their partners who may be asked to come in for treatment) that confidentiality will be respected.

3.4 General Skills for STI/RTI Education and Counselling
Box 3.2 lists some general skills that health care providers should develop in order to educate and counsel patients. Many of them are also useful for history taking and examination. Education and counselling often start early in the consultation, when the health care provider asks questions about risk, symptoms and signs of infection. Remember that adolescents in particular may not admit to being sexually active, and may not recognise, or be comfortable talking about, symptoms of infection or pregnancy. Prevention advice to individuals should be based on their personal needs and concerns, and related to practical steps they can take to reduce their risk of acquiring infection and developing complications.
Box 3.2 Skills for Education and Counselling

- Welcome your patient warmly by name and introduce yourself.
- Assure your patient that privacy and confidentiality will be respected.
- Sit close enough to be able to talk comfortably and privately.
- Make eye contact and look at the patient as she speaks.
- Use language that the patient understands.
- Listen to the patient and take note of body language (posture, facial expression, looking away, etc.).
- Try to understand feelings, experiences and points of view.
- Be encouraging. Nod, or say, “Tell me more about that.”
- Use open-ended questions.
- Provide relevant information.
- Try to identify the patient’s real concerns.
- Suggest various options to the patient.
- Respect the patient’s choices.
- Always verify that the client has understood what has been discussed by having her/him repeat the most important information.
- Do not
  - keep moving in and out of the room
  - encourage other providers to interrupt
  - write notes continuously as the patient is speaking
  - Make judgemental comments or negative facial expressions.

3.5 Promoting Prevention of STIs/RTIs and Use of Services

As noted previously, communities with good access to effective prevention and treatment services have lower rates of STIs/RTIs and their complications than communities where services are poor, disrupted or not used by people at risk of infection. The following information looks at what can be done to reach more people in need of STI/RTI services and convince them to use the clinic. This involves:

- reducing barriers to use of services;
- raising awareness of STIs/RTIs and promoting use of services; and
- reaching out to those who do not normally use reproductive health services.
3.6 Reducing Barriers to Use of Services

The first step to increasing use of services is to remove the barriers that keep people away. Talking with patients and community members can often identify such barriers. People may avoid health care services because of accessibility barriers, such as:

- Laws, policies and regulations: do they place restrictions on young people or women using services, or require a parent’s or husband’s permission?
- Location: can people reach the clinic easily? Mobile or satellite clinics can extend the reach of clinical services.
- Hours: are opening hours of the clinic convenient for working people, students, and others? Special clinic sessions in the evening or at the weekend may make it possible for some people to attend who otherwise could not.
- Cost: can people afford the clinic fees and additional costs for laboratory tests and medicines? Costs deter people, and in the end, the cost to the community will be high if rates of STIs/RTIs and their complications remain high.

In addition, there may be barriers to acceptability of services, including:

- Stigma: people are often afraid to use services because of critical or judgemental attitudes of staff. Non-respectful treatment by providers deters many adolescents from using health care services. Reproductive health services are often designed or perceived to be exclusively for women, which discourages men from using them.
- Lack of privacy: young people particularly worry that information about their health or sexual behaviour will not be treated as confidential. Steps can be taken to ensure privacy during clinic visits and confidentiality of information (see Chapters 4 & 5).
- Poorly managed health care facility: do people have confidence in the clinic and its staff, and feel that the quality of the services they receive is good? Improving services builds such confidence.
- Inadequate supplies and drugs: can people get the tests and treatment they need on-site? If not, they may decide to go directly to a pharmacy for treatment in order to save time and money.

Addressing these barriers will make it easier to promote use of services for STI/RTI prevention and care.
3.7 Raising Awareness and Promoting Services

Even when accessibility and acceptability barriers to clinic attendance have been removed, some people may not use the facilities because they are not aware that anything is wrong. Prevention efforts, as well as promotion of clinic services for STIs/RTIs detection and treatment, must therefore be directed at people in the community.

Health care workers should promote early use of services for people with symptoms or concerns about STIs/RTIs. This includes:

- Raising awareness of STIs/RTIs and their complications,
- Educating people about STI/RTI symptoms and the importance of early use of health care service,
- Promoting screening services such as syphilis testing early in pregnancy, and
- Promoting services and reaching out to young people or other vulnerable groups who may not feel comfortable using clinic services.

Messages should emphasise the benefits of prevention and of early treatment over later treatment. Health care providers can contribute to a public health approach to STI/RTI control and help reduce the burden of disease in the community by reaching all kinds of people and convincing them of the value and importance of early use of STI/RTI services.

Prevention and management of STIs/RTIs require special attention to factors that can influence risk and vulnerability, such as age, sex, culture and occupation. This is as true for control of STIs in the community as it is for management of individual patients. If key sectors of the population, such as men or adolescents, are ignored, community control of STIs will be very difficult to achieve. Other groups, such as sex workers and their clients, and migrant and mobile workers, may be at high risk of STIs yet may not know about health services or feel comfortable using them. Outreach to these groups strengthens STI control.

3.8 Involving Men

Men tend to have more sexual partners than women do and thus more opportunity to acquire and spread STIs. Men are also more likely to have symptoms when they have an STI and may seek treatment at clinics, from private doctors or directly from pharmacies or drug vendors. Access for men to quality services for prevention and treatment is thus an important component of STI control.
Family planning clinics should, as a minimum, offer treatment to the sexual partners of women who use their services. Some family planning services that traditionally served women only are now increasingly reaching out to men with a variety of preventive and curative services including involving male partners in decision-making about dual protection (against both infection and pregnancy). Some family planning clinics provide special times or places for men to attend for advice and care.

In addition to broadening services to include men, reproductive health clinics should support improvement of services where men go for care (private doctors, pharmacies), and create mechanisms for easy referral, partner treatment and other needs.

Creating or supporting special services for men where they work (occupational health clinics) or meet (outreach to bars and entertainment districts) also helps ensure that they get appropriate STI care. Condoms should be made easily available where men socialise. Clinics should work with local pharmacies, drug vendors and traditional care providers to ensure that they are aware of STI guidelines and the importance of partner management.

### 3.8.1 Reaching Men

Men may be more receptive to STI prevention messages if they understand that STIs threaten their health and fertility, and may endanger the lives of their wives, sex partner(s) and children. There are two objectives for reproductive health programmes or workplace interventions for men:

- To encourage men with an STI to bring or refer their partners for treatment. Since STIs are more often symptomatic in men than in women, partner management is an important way to identify asymptomatic women who need treatment.
- To reach men with information about prevention, especially about use of condoms in commercial and casual sex encounters. This reduces the chance that they will acquire and spread STIs to the wife or partner.

### 3.9 Self-treatment

Many people find ways to treat themselves for an STI without going to a doctor or clinic. Self-treatment is especially common among men and young people, who may buy antibiotics directly from a pharmacy without a prescription. Sex workers and their clients also often take antibiotics or other treatments in the belief that these will prevent infection.
Self-treatment should be discouraged for several reasons which include:

- Ineffective drugs are often sold by people with minimal training (such as pharmacy sales assistants).
- Drugs may be sold in insufficient dosages to plausibly make treatment more affordable.

As a result, the infection is not cured (although symptoms may disappear for a while) and the germs become more resistant to common antibiotics.

Health care providers should try to understand why people treat themselves. It may be because local clinics are not acceptable for various reasons, such as cost, waiting time, or perceived lack of privacy. Improving and promoting clinic services can restore confidence and reduce the amount of self-treatment.

### 3.10 Young People

Generally, young people have higher rates of STIs than older adults do. There are many social, behavioural and biological reasons for this. For instance:

- Young people tend to have more partners and shorter relationships, so there is more opportunity for STIs to spread.
- They may find it difficult or embarrassing to obtain or use condoms.
- They may find it difficult to refuse sex in some situations, e.g. in exchange for goods such as school supplies, food or clothes.
- They may not recognise situations and sexual partners where risk of infection is high.
- They may lack knowledge about the symptoms of STIs and when to seek care.
- They may feel uncomfortable using family planning or other reproductive health services for fear of critical and judgmental responses from staff.
- They may not be aware of places to go for private and confidential services.
- They may be unable to afford health services.

In some societies, adolescent girls are expected to marry early and have little or no sexual experience prior to marriage. They may still be at risk of infection, however, because the husband may have had previous partners or may have more than one partner. Young girls with an older sexual partner are at much greater risk of acquiring some infections (especially incurable infections such as HIV, HSV-2 and HPV), and are more likely to be in a relationship where the sexual activity is not wholly consensual.
Biologically, for many adolescent girls especially those near puberty the tissue covering the cervix is more vulnerable to infection than that of older women.

Reproductive health clinics have a role to play in providing quality preventive and curative services for young people, and should attempt to make their services acceptable and accessible to them. “Youth-friendly services” are private, respectful and confidential services based on young people’s needs and concerns, provided by technically competent staff, in physically acceptable and accessible places. These services need to be acceptable to the local communities and young people should be involved in their planning and monitoring.

Box 3.3 includes some things to consider in seeking to improve the access of young people to STI/RTI prevention and treatment, and some important messages that should be passed on to them. Young people need practical information and support in relation to issues that affect their lives (including sexual activity), as well as access to services and supplies. Education that focuses only on abstinence and fidelity leaves women and girls uninformed about other ways to reduce risk of infection and unable to negotiate safer sexual activities that minimise this risk.

Making services acceptable and accessible to adolescents provides prevention and care for a group in which risk-taking is high, and has great potential to avert infections and preserve a pleasurable healthy sexual life. Barriers faced by young people in accessing services such as contraception including condoms are often due to attitudes of parents, providers and the community, including denial and discomfort about youth sexuality. These barriers need to be broken down. Outreach and peer education can help reach young people in different situations who may not have knowledge of, or easy access to, services.

In some countries, the legal age of consent for medical services is different from the age of consent for sex. Health care workers need to clarify the legal status in relation to managing adolescents who are under the age of consent for medical treatment. Ideally, treatment or services should be permitted if the young person’s well-being is threatened. In a small number of countries, providing any care to adolescents or unmarried females is illegal. Community groups should advocate for changing such policies.
Box 3.3  Reaching Young People

Services need to be convenient and ensure privacy and confidentiality. Condoms (with emergency contraception as backup) should be encouraged as contraceptive choices, and interactions should focus on building communication skills to help young people negotiate safer sex.

Safer behaviors that should be encouraged for young people include:

- Delaying onset of sexual activity;
- Learning how to use condoms consistently and correctly;
- Practising dual protection to prevent unplanned pregnancy as well as STI;
- Limiting numbers of partners;
- Avoiding high-risk sexual practices (especially unprotected vaginal or anal sex) with any partner;
- Recognising symptoms of STI and seeking early treatment.

3.11  Sex Workers and Others with Many Sexual Partners

Some people are more likely to acquire an STI because they change sexual partners frequently. The greater the number of sexual partners a person has, the greater the chances of becoming infected with an STI, and the greater the chance of passing it on to someone else. Interventions that successfully reach such people at high STI risk can have the greatest impact on community STI transmission.

Thus, reaching these groups with high-quality preventive and curative services is essential for community control of STI. Effective outreach, peer education and clinical services for sex workers can be developed using mobile clinics or by reserving special times at regular clinics. Such services can contribute in reducing community STI prevalence (see Box 3.4).

3.12  Other Groups

STIs are often more common among certain groups, such as displaced and migrant populations, uniformed services, prisoners, and street children. Efforts to reach these groups with effective preventive and curative services are likely to benefit the community at large.
Box 3.4  Reaching Sex Workers and their Clients

Barriers to control of STIs in commercial sex workers include poor access to effective prevention and care, as well as difficult social conditions that reduce sex workers’ ability to insist on condom use.

Services should be convenient, private and confidential. Outreach should be organised to reach sex workers who do not have easy access to services. Peer education is key to supporting sex workers in demanding safer conditions. Health workers should support legal and social efforts to reduce harassment and facilitate provision of preventive and curative services as a public health benefit.

STI/RTI services for sex workers should include:
- Condom (and lubricant) supply and promotion of consistent and correct use;
- STI screening or presumptive STI treatment;
- STI treatment for those with symptoms or exposure;
- Dual protection for prevention of unplanned pregnancy as well as STIs/RTIs.

Postmenopausal women may or may not use reproductive health services, yet may continue to be sexually active and vulnerable to infection. In addition, women who are not at risk for pregnancy including those who have chosen permanent contraception may be less motivated to use condoms. It may also be more difficult for them to negotiate condom use with their partners. Counseling these women about condom use for STI protection should remain an important part of any health consultation. Screening for some STI/RTI-related conditions (such as cervical cancer) is also important for older women.

Children are also vulnerable to STIs, and infection may be misdiagnosed since STIs often present differently before puberty. It is also becoming clear that sexual abuse of children is more common in many societies than previously realised. Such children should be referred to services that can provide effective and sensitive care.
KEY POINTS

Health education for STI/RTI prevention should address:

- Correct and consistent condom use
- Reducing the number of sex partners or delaying sexual activity
- Recognising symptoms and early use of services

All patients with an STI/RTI should be given information about completing their treatment and preventing reinfection. Providing essential health education is important in the control and prevention of STI/RTI.

Partners of patients who are treated for infections that are clearly sexually transmitted should be provided with treatment. Partner treatment is not needed for non-sexually transmitted RTI, however, care must be taken not to mislabel infections as sexually transmitted when they are not.

Counselling which should be conducted in privacy and confidentiality should always be flexible, be adapted to the needs and circumstances of each patient, and take into account barriers to behaviour change.

Counselling should stress the importance of STI/RTI prevention in:

- Maintaining fertility
- Ensuring safe pregnancy and preventing congenital infection, and
- Reducing risk of HIV infection, while helping people find ways to lead enjoyable sex lives.

Sexuality must be clearly and directly addressed in STI/RTI prevention.
CHAPTER 4 PREVENTION AND CONTROL OF RTIs

4.0 Introduction
The best approach to preventing RTIs is to avoid exposure. RTIs are spread in several ways:

- Sexual transmission: Many RTIs are sexually transmitted; the higher the rate of transmission in the community, the more complications there will be.
- STIs/RTIs related to medical procedures: Infection with and complications of STIs/RTIs may develop following medical procedures or following examination or intervention during pregnancy, childbirth, the postpartum period, family planning interventions (e.g. IUCD) and gynaecological interventions.
- Endogenous infections: Some RTIs result from overgrowth of organisms that are normally present in the vagina. These RTIs may also lead to complications.

All these infections are preventable or treatable causes of infertility, ectopic pregnancy, cervical cancer, foetal wastage, low birth weight, infant blindness, neonatal pneumonia, and mental retardation in addition facilitating transmission of HIV.

4.1 Transmission of STIs
STIs are transmitted from person to person primarily through specific preventable behaviours, which bring an individual into contact with infected semen, vaginal secretions or blood of an infected sexual partner. The main route of transmission is through unprotected sexual intercourse.

However, the STIs are not always transmitted by sexual intercourse, some are transmitted from mother to baby. Sexual behaviour that determines the risk of getting an STI includes:

- Having many sexual partners
- Changing sex partners frequently
- Having sex with casual partners, clients of commercial sex workers or commercial sex workers
- Sexual practices such as anal sex.

Health behaviour, which can increase the risk of getting an STI, includes:

- Not using condoms or incorrect and inconsistent use of condoms
- Delay in getting STI treatment
- Failure to bring in sexual contacts for treatment
- Not taking full treatment for STIs.
4.2 How to Prevent STIs

The best approach to preventing STIs is to avoid exposure. At this first level of prevention, the likelihood of being exposed to STIs can be reduced by:

- Abstinence
- Delaying sexual activity for adolescents and young people
- Decreasing the number of sex partners
- Using condoms correctly and consistently
- Faithfulness to one uninfected partner

STI prevention involves prompt recognition and effective treatment of STIs when they do occur. This not only reduces the probability of complications for the individual but also prevents new infections in the community. The sooner an STI is cured, the less chance it will be transmitted to other people.

4.2.1 Delaying Sexual Activity

Adolescents can avoid STIs and pregnancy at a time when they are particularly vulnerable by delaying sexual activity until they are older. Support for delaying sex is perhaps most important for young girls, who may face severe social and health consequences if they become pregnant or develop an STI. The bodies of adolescent girls are particularly vulnerable to cervical infections that can lead to pelvic inflammatory disease, infertility and ectopic pregnancy. In young boys STIs may cause orchitis which may lead to infertility in adulthood. Adolescents should know that they can get support and confidential information on methods including condom use for preventing pregnancy and STIs (dual protection) when they decide to become sexually active.

4.2.2 Decreasing the Number of Sex Partners

Limiting the number of sex partners can help reduce exposure to STIs. For example, people in mutually monogamous relationships (where both partners have no other sex partners) have no risk of STI if both are free of infection. Many monogamous women with only one lifetime sex partner, however, may develop an STI; their risk of infection comes from their partner’s behaviour and not their own. Sexual abstinence is another way to avoid risk of STIs (although other RTIs are still possible).

Many people need strategies other than monogamy or abstinence at some point in their lives. Monogamous relationships do not provide protection from STIs when they follow one another in rapid succession (“serial monogamy”).
Couples who are separated from each other for periods of time may also require other strategies. Men and women whose jobs involve travel, migrant workers, vendors, truck drivers and soldiers are more likely to have multiple partners and to return home with an STI. Whatever the circumstances, both women and men with multiple partners or whose partners have multiple partners need reliable protection from STIs.

4.2.3 Correct and Consistent Use of Condoms

Condoms are the most reliable method available for situations where people want to protect themselves or their partner from any risk of STIs. Used correctly and consistently, they form a barrier that keeps out even the smallest bacteria and viruses.

**Box 4.1 How to use condoms correctly**

1. Check expiration date.
2. Put the condom on before any genital contact. If uncircumcised, pull back the foreskin.
3. Cover the head of the penis with the condom. Leave some space at the tip for ejaculate, but gently press out any air. This will reduce the risk of breakage. Unroll it, so that the entire erect penis is covered.
4. If needed, you may generously apply a water-based lubricant to the outside of the condom before penetration. Do not use oil-based lubricants.
5. To prevent slippage, hold the condom at the base of the penis when ever withdrawing.
6. If ejaculation occurs, withdraw the penis before it gets soft. Hold onto the condom to prevent slippage. Dispose the condom appropriately.
Male condoms made of latex are widely available, inexpensive and highly effective. Because they are easy to carry, protection can be available at any time.

STIs can still occur despite condom use. Genital ulcers or warts can be transmitted through contact with parts of the body not covered by the condom. More commonly people get an STI because they misuse condoms, or use them inconsistently. When handled or stored incorrectly—in wallets or in a hot place, for example—or if used with oil-based lubricants, condoms may fail. Condom breakage is usually due to incorrect use, not to defects in the device. Most importantly, condoms can only protect against STIs when they are used consistently and correctly. When used correctly during every act of intercourse, condoms can greatly reduce the risks of both pregnancy and STI (dual protection), including HIV infection.

Female condoms are becoming more widely available and have the advantage for women that their use is more in their control than use of male condoms. One type of female condom is currently on the market under various names. It is made of polyurethane plastic, which is sturdier than latex. Only one size is made and fitting by a health care provider is not required. Unlike latex male condoms, which are weakened by oil-based lubricants, the female condom may be used with any type of lubricant without its strength being affected. It is pre-lubricated, but users may add more lubricant.

Female condoms may offer a similar level of protection as male condoms, but they are more expensive. Some studies have shown that the female condom is acceptable to both women and their male partners.

Despite its advantages, the female condom has some problems. The device protrudes from the vagina and thus requires the acceptance of the male partner. In addition, it cannot be used at the same time as the male condom, and cannot therefore provide backup protection if the male condom breaks or slips. Research into other female-controlled methods is under way. Microbicides (chemicals that kill RTI organisms) are being tested for their safety and effectiveness in protecting against STIs and HIV, as are other barrier methods such as the diaphragm. None of these methods has yet been shown to provide protection equal to the male condom.

4.3 Transmission of iatrogenic Infections

Infection can reach the uterus through medical procedures that involve passing instruments through the cervix (transcervical procedures). Manual vacuum aspiration, dilatation and curettage, insertion of an intrauterine device (IUCD) and endometrial biopsy are examples of such procedures.
The risk of infection following a transcervical procedure varies greatly depending on factors such as background STI prevalence, resource and health facility capacity level, and conditions under which procedures are performed. In settings where prevalence of cervical infection is low, the risk of introducing infection to the upper genital tract is minimal. However, women who harbour pathogens such as *N. gonorrhoea* or *C. trachomatis* in their cervix are at increased risk of upper genital tract infection after a transcervical procedure compared with uninfected women.

### 4.4 How to Prevent Iatrogenic Infections

Many STI/RTI complications occur when sexually transmitted, endogenous or other organisms reach the upper genital tract. The most effective way to prevent STI/RTI complications, such as infertility and ectopic pregnancy, is to prevent upper genital tract infections from occurring. This involves:

- STI prevention and management
- Good antenatal care and safe delivery practices
- Safe performance of transcervical procedures
- Good postabortal care and management of complications.

Interventions that reduce the spread of STIs/RTIs or prevent existing infection reaching the uterus are key to preventing complications. During most of the menstrual cycle, cervical mucus forms a thick barrier that is difficult for germs to penetrate. STIs such as gonorrhea or chlamydia in the cervix may, however, spread to the uterus during menstruation or may be pushed in during transcervical procedures. Non-sexually transmitted organisms from the vagina or from outside the body may also cause pelvic inflammatory disease if they are pushed into the uterus.

#### 4.4.1 Reducing Risk of Infection

##### 4.4.1.1 Clinical Practices

Adopt appropriate infection prevention procedures and aseptic techniques that provide protection against transmission of infections. These include:

- Washing hands.
- Wearing gloves, both for the procedure and when handling contaminated waste materials or used instruments.
- Decontaminating, cleaning and sterilisation all instruments (e.g. specula, tenacula, forceps, and uterine sound) before use. High-level disinfection can be done by boiling instruments for 20 minutes in a container with a lid.
Cleaning the cervix and vagina with antiseptic solution.

Using “no touch” technique. This means avoiding contamination of the uterine sound or other instruments by inadvertently touching the vaginal wall or speculum blades.

Carrying procedures in a clean environment

4.4.1.2 Treatment of Cervical Infections

While infection prevention procedures can reduce the chance of introducing infection from the outside, they do not prevent existing gonorrhoea or chlamydial infection from being carried into the uterus during transcervical procedures. When cervical infection is present, even sterile instruments passed through the endocervix can become contaminated and carry bacteria into the upper genital tract.

The **safest approach** to avoid the spread of infection to the upper genital tract is to rule out or treat any cervical infection that may be present, prior to performing a transcervical procedure. It is important to bear in mind that cervical infection can be asymptomatic in some women. In resource-poor settings where cervical infection is less common, it may be acceptable for health care workers to rely on clinical judgement to rule out the presence of infection. However, in resource-poor settings where the prevalence of cervical infection is high and the provider is unable to rule out infection, a full curative dose (presumptive treatment) of antibiotics effective against gonorrhoea and chlamydia may be considered.

After a transcervical procedure, all women should be counselled to contact a health provider immediately if, in the next few weeks, they develop symptoms suggestive of infection, such as fever, low abdominal pain, or abnormal vaginal discharge. A prophylactic dose of antibiotics (100 mg of doxycycline orally 1 hour before the procedure and 200 mg after the procedure) reduces infection rates associated with induced abortion and should be given to all women undergoing this procedure irrespective of STI prevalence. For IUCD insertion¹ though, antibiotic prophylaxis provides minimal benefit and hence is not recommended.

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¹ *Note:* Laboratory tests to screen for STIs contribute substantially to safe and effective use of IUCDs, but implementation should be considered within the public health and service context. Service providers should use clinical judgment to decide whether laboratory test(s) is necessary before insertion of IUCD. Prophylactic antibiotics are generally not recommended for IUCD insertion. However, where the risk for cervical gonococcal and chlamydial infection is high and facilities for screening are inadequate, such prophylaxis may be considered. In any case such clients should be counseled to watch for syndromes of PID, especially during the first month of insertion.
4.5 Transmission of Endogenous Infections

Yeast infection and bacterial vaginosis are common endogenous infections that can be easily treated but often recur. Health care providers should be aware that:

- Pregnant women and women using oral contraceptives may get frequent yeast infections because of changes in vaginal acidity (pH)

- Certain medical conditions—e.g. diabetes—may increase the risk of yeast infections as may long-term use of steroids.

Less commonly, recurrent yeast infections may be a sign of a more serious illness that reduces immunity (such as long-term chronic illness or HIV infection). These should be considered only if there are other symptoms; yeast infection alone is common and usually easily prevented or treated.

4.5.1 Prevention of Endogenous Infections

Health care providers can offer advice about some simple ways to prevent endogenous infection.

- Cleaning the external genital area with soap and water is sufficient for hygiene. Douching can disrupt the normal flora of the vagina and cause overgrowth of other microorganisms (bacterial vaginosis). Use of detergents, disinfectants, and vaginal cleaning or drying agents should be avoided.

- Antibiotics can also disrupt the normal vaginal flora and permit overgrowth of yeast. Women taking antibiotics—especially long courses of broad-spectrum antibiotics—may also need treatment for yeast infection.
4.6 Public Health Approach to Control of RTIs

Most of the serious health problems caused by STIs/RTIs are preventable. Communities with good access to effective prevention and treatment services have lower rates of STIs/RTIs and STI/RTI complications than communities where services are poor, disrupted or not used by people at risk. Reducing the burden of STIs/RTIs requires more than good clinical management of individual patients. STIs/RTIs are transmitted in the community, and limiting interventions to clinic settings misses much of the problem.

Many of these challenges can be addressed by making the most of opportunities to promote prevention, improve health-seeking behaviour, and detect and manage existing infections. Health care providers should:

- **Raise awareness** in the community about STIs/RTIs and how they can be prevented especially among populations who may be at high risk.
- **Promote early use of clinic services** to cure STIs/RTIs and prevent complications. Teach people how to recognise symptoms and when to seek care.
- **Promote safer sexual practices** including consistent condom use, fewer partners, and delaying sexual onset when counselling clients.
- **Detect infections** that are not obvious. Ask about symptoms of STIs/RTIs when patients attend for family planning or other reasons. Look for signs of STIs/RTIs when doing examinations. Screen for asymptomatic infection when possible.

### Table 4.1 Preventing Upper Genital Tract Infection, Infertility and Ectopic Pregnancy

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Methods to prevent infections and complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>STI prevention</td>
<td>Counsel on:</td>
</tr>
<tr>
<td></td>
<td>➢ delaying sexual activity</td>
</tr>
<tr>
<td></td>
<td>➢ reducing numbers of partners</td>
</tr>
<tr>
<td></td>
<td>➢ using condoms correctly and consistently</td>
</tr>
<tr>
<td>STI management</td>
<td>Early detection and treatment of STIs</td>
</tr>
<tr>
<td>Safe delivery practices</td>
<td>Use aseptic technique</td>
</tr>
<tr>
<td></td>
<td>Manage postpartum infection effectively</td>
</tr>
<tr>
<td>Safe transcervical procedures</td>
<td>Use aseptic technique</td>
</tr>
<tr>
<td></td>
<td>Rule out infection prior to procedure</td>
</tr>
<tr>
<td>Post-abortion care</td>
<td>Use aseptic technique</td>
</tr>
<tr>
<td></td>
<td>Manage post-abortion infection effectively</td>
</tr>
</tbody>
</table>
◆ Prevent iatrogenic infection by following universal precautions, using aseptic technique, and ruling out or treating cervical infection before performing transcervical procedures.
◆ Manage symptomatic STIs/RTIs effectively. Follow syndromic management guidelines for STI/RTI case management.
◆ Counsel patients on staying uninfected after treatment. Encourage them to comply with treatment, assist with partner notification and treatment, and reinforce prevention.

A combined strategy of effective community interventions and improved clinical services can have a large impact on STIs/RTIs and their complications. Optimal clinical services increase the number of people who are cured. More effective prevention in the community, especially when it reaches those at highest risk, can reduce the overall STI/RTI problem. The combination of strategies benefits everyone.

KEY POINTS
◆ A comprehensive approach to STIs/RTIs using public health approach to include prevention and control of STI/RTI through reducing barriers to services, raising awareness in the community, promoting services and reaching out to people who do not typically use reproductive health services should be adopted to control STI/RTI.
◆ Services should be accessible, acceptable and confidential so that people do not hesitate to use them if they have concerns about STI/RTI.
◆ The community should be made aware of STIs/RTIs and their complications, and encouraged to use preventive and care services.
◆ Men and young people should be encouraged to participate in STI/RTI prevention. Special services or referrals may need to be developed to address STI/RTI in men.
◆ STI prevention means reducing exposure – by using condoms and reducing numbers of sex partners. Condoms must be used correctly and consistently to prevent STI.
◆ Adolescents should receive support for decisions to delay sexual activity. However, they should be given information on condom use for dual protection should they decide to be sexually active.
◆ The risk of iatrogenic infection can be reduced by good infection control procedures. Where STIs are common, the risk of iatrogenic complications following a transcervical procedure can be reduced by giving a full course of antibiotic treatment for cervical infection, if such an infection cannot be reliably ruled out.
CHAPTER 5 CLINICAL APPROACH

5.0 Introduction
In the management of STIs/RTIs, good history taking is important. To this effect, the patient’s full confidence is needed. Interviewing should therefore be done in privacy, with patience, and in a sympathetic manner. Similarly, examination should be carried out in privacy and with gentleness. Where necessary, only the parts of the body that are relevant to reach the necessary clinical diagnosis should be exposed. However, in some cases the whole body may need to be inspected. Certain basic items are needed for the physical examination, such as an examination couch, linen for covering the patient, sterile specula and sterile gloves. A good light source should be made available. Finally, the essential points of the history and physical examination should be registered carefully. All clients presenting with RTIs are at high risk of HIV.

5.1.1 Maintaining Privacy and Confidentiality
STIs/RTIs are potentially stigmatising conditions and therefore privacy and confidentiality are essential for all aspects of patient care history taking, examination, education and counselling. Assuring visual and auditory privacy and confidentiality can be difficult in many health care settings, especially those that are busy or crowded but it is essential. The space where interviews, examinations and counselling take place should be separated from waiting rooms, so that people waiting cannot see or hear what takes place between the provider and the patient. Patients records should be stored securely and clinic staff must avoid talking about patients’ problems both inside and outside the clinic. Patients should be treated with the same respect whether or not an STI is detected or suspected, and regardless of age or marital status. Where health care providers are likely to know patients’ extended families or neighbours, they must take extra care to reassure patients.

All patients have a right to privacy and confidential services, however, some such as adolescents, sex workers, refugees and others who live or work in illegal or marginalised settings may feel a particular need to know that services are confidential. Adolescents, especially those who are unmarried, often do not use services because they feel providers will be judgemental or disapproving and might reveal information to parents or elders. Patients will avoid a health care facility altogether, sometimes travelling to a distant clinic to preserve anonymity if they feel that their privacy and confidentiality are not respected or that service providers are critical and judgemental.
5.1.2 History Taking
The following information should be obtained:

- Socio-demographic data
  - Name
  - Age
  - Sex
  - Marital status
  - Religious affiliation
  - Occupation.

- Obstetrical and gynaecological history should be obtained in female clients
  - Parity (including outcome of previous pregnancies)
  - The last normal menstrual period (LNMP)
  - History of contraceptive use, type(s) and duration.

- Past medical history
  - Previous illnesses and their duration
  - Allergies, especially to drugs
  - History of STIs (genital discharges, genital ulcers and others), HIV testing and knowledge of STIs.

- Present illness
  - The symptoms and their duration
  - Previous sexual exposure, marital and extramarital, heterosexual, homosexual, lesbian, oral
  - Presumed source and time of infection
  - Medication, self administered or prescribed.

5.1.3 Physical Examination of the Adult
Examine the patient in an appropriate position: in males either standing or lying on a couch and in females lying on a couch. Expose the relevant parts of the body and look for:

Skin:

- Rashes: type and location
- Ulcers: type and location
- Swellings: type and location
- Pubic lice and other ectoparasites.
Lymph nodes:
- Enlargement
- Localised or generalised
- Tenderness
- Consistency
- Matted together or not.

Genital conditions in males:
- Ulcers: type, location, number, tenderness and induration
- Urethral discharge: colour, smell and amount. In chronic urethral discharge, prostatic message may be required
- Genital warts: size and location
- Pubic lice.

In case oral/anal intercourse is suspected, an oral/rectal examination should be done.

Genital conditions in females: A vulvovaginal examination with speculum should be done. However consent or guidance should be sought before any pelvic examination is done in female clients.
- Ulcers: type, location, number and associated tenderness
- Discharges: colour, amount and smell, cervical or vaginal origin
- Genital warts: size and location
- Pubic lice
- Cervix: take a Pap smear where possible.

Other systems:
In both males and females, other systems may be examined if necessary. In females, an abdominal examination and bimanual examination should be done to look for hepatosplenomegaly, swellings in the hypogastric region, tenderness and its location, associated guarding and rebound tenderness. Before undertaking any physical examination, seek client or guardian consent.
5.1.4 **Physical Examination of the Newborn**

A newborn baby may contract an STI/RTI in utero or at the time of delivery. A history of STI/RTI should be taken from the mother and father where possible. The examination will depend on the presenting symptoms and should include:

**General examination:**
- Jaundice
- Fever
- Obvious abnormalities, e.g. skin rashes, snuffles.

**Eyes:**
- Discharge, colour and amount
- Redness of the conjunctivae and sclerae
- Swelling of the eyelids.

**Lymphatic system:**
- Swollen lymph nodes with their location, presence or absence of tenderness, and consistency.

Also examine the skeletal system for any obvious abnormalities; the abdomen for enlarged liver or spleen; the central nervous system for neurological deficits; and the cardiovascular system for cardiac murmurs. The clinician may examine the other systems if found necessary.

5.1.5 **Specimen Collection and Handling**

In all cases where possible, appropriate specimens should be taken for laboratory analysis (Table 5.1). Sterile cotton wool swabs should be used for collecting urethral discharge specimens. If these are not available, a bacteriological wire loop sterilised by flaming should be used. Early morning urine may be examined if there is no obvious discharge. This should be centrifuged and the deposit examined for pus cells and bacteria by wet preparation and Gram stain. When oral sex is practised, throat swabs should be obtained. Blood should be taken for appropriate tests such as RPR, ELISA, etc.
<table>
<thead>
<tr>
<th>Genital condition</th>
<th>Diagnostic Test</th>
<th>Site(s) &amp; sampling device/specimen needed</th>
<th>Specimen Transport/ Laboratory Requirement</th>
</tr>
</thead>
</table>
| Bacterial vaginosis | Clinical Diagnosis: 3 of criteria 1-4  
1. Homogeneous non-inflammatory discharge  
2. pH of vaginal fluid > 4.5  
3. "Fishy" odour of vaginal discharge before or after addition of 10% KOH (*whiff test*)  
4. "Clue" cells present on microscopy of vaginal fluid (Gram stain or wet prep). | Lateral vaginal wall. | Simple microscopy only required. |
<p>| Candidiasis: vulvovaginal | Clinical Diagnosis: Signs or symptoms of inflammation with demonstration of yeasts or hyphae on microscopy of vaginal fluid or Culture of vaginal or vulval swab. | Vulvar or high vaginal swab. | Stewart’s transport medium or direct plating onto Sabouraud’s culture medium. |
| Chlamydia | PCR or LCR (Nucleic acid amplification tests). Culture | Endocervical swab or first catch urine. Not yet validated for use in endocervical or pharyngeal specimens. Urethral, endocervical, rectal, pharyngeal swabs. | Urine specimens should be kept at &lt;4°C or frozen &gt; 24 hrs at room temperature reduces the sensitivity of LCR. Specific transport media is stored frozen at -2°C (or refrigerated for up to 2 weeks) prior to collection of sample, transported to the laboratory at -4°C. Needs experienced operator, labour intensive, unsuitable for large numbers. |
| Epididymo-orchitis | Clinical diagnostic test for chlamydia, gonorrhoea and UTI. | | |</p>
<table>
<thead>
<tr>
<th>STI / Genital condition</th>
<th>Diagnostic Test</th>
<th>Site &amp; sampling device &amp; specimen needed</th>
<th>Specimen Transport / Laboratory Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gonorrhea</td>
<td>Culture</td>
<td>Endocervical, rectal, urethral, pharyngeal swab.</td>
<td>Stewart's transport media, but use charcoal transport media if delay in reaching laboratory &gt; 24 hours; or direct plate onto selective culture media, and transport in CO₂ rich atmosphere. Do not refrigerate.</td>
</tr>
<tr>
<td></td>
<td>PCR</td>
<td>negative intracellular dispersed within PMNL on microscopy.</td>
<td></td>
</tr>
<tr>
<td>Herpes</td>
<td>Herpes simplex virus isolation by cell culture</td>
<td>Vesicle fluid or swab from ulcer base; Swab of area of skin where symptoms possibly due to HSV are experienced.</td>
<td>Specific transport medium required. Maintain specimen at -4°C after collection and during transport.</td>
</tr>
<tr>
<td></td>
<td>HSV PCR</td>
<td>Lessor.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type-specific antibody assays.</td>
<td>Blood.</td>
<td></td>
</tr>
<tr>
<td>HIV</td>
<td>ELISA for HIV Antibody and HIV Antigen, 2nd alternative ELISA for those positive on 1st ELISA</td>
<td>Blood.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Viral load.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mucopurulent Cervicitis</td>
<td>Clinical diagnosis</td>
<td>Test for chlamydia and gonorrhea.</td>
<td></td>
</tr>
<tr>
<td>Non-gonococcal urethritis</td>
<td>Gram stained urethral smear demonstrates &gt;5 PMNL per high-power (x1000) microscopic field, averaged over 5 fields with greatest concentration of PMNLs. Exclude chlamydia.</td>
<td>Urethral swab. Can only make diagnosis in males.</td>
<td></td>
</tr>
<tr>
<td>Sexually Transmitted Infection</td>
<td>Diagnostic Test (Patient Provider)</td>
<td>Specimen Transport/Laboratory Requirement</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------</td>
<td>------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Pubic Inflammatory Disease</td>
<td>Clinical diagnosis Test for Chlamydia and gonorrhoeae.</td>
<td>Endocervical swab.</td>
<td></td>
</tr>
<tr>
<td>Pubic Lice</td>
<td>Clinical diagnosis Confirmation by observing lice directly or using microscopy.</td>
<td>Lice from skin or loose egg adherent to hair shaft.</td>
<td></td>
</tr>
<tr>
<td>Scabies</td>
<td>Clinical diagnosis Demonstrate mites by microscopy.</td>
<td>Skin scrapings from lunum.</td>
<td></td>
</tr>
<tr>
<td>Early Syphilis</td>
<td>Serology positive non-treponemal test (e.g. RPR or VDRL) and treponemal test (e.g. FTA-ABS, TPPA).</td>
<td>Blood.</td>
<td></td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>Wet smear demonstrates motile flagellated protozoa.</td>
<td>High vaginal swab. Urethral swab in male</td>
<td>Microscopy is most useful. Specimens for wet smear may be transported to laboratory in Stewart's transport media, however, organisms are only detectable while motile, therefore any delay in reaching laboratory will greatly affect sensitivity of test. Requires special culture medium.</td>
</tr>
</tbody>
</table>
**KEY POINTS**

- Health care providers should know how to identify people with signs, symptoms or risk of STI/RTI.

- **Screening for syphilis** is an effective strategy for preventing congenital syphilis and is part of the essential package of antenatal care.

- Women with previous spontaneous abortion, stillbirth or preterm delivery should be screened for **bacterial vaginosis and trichomoniasis** in addition to syphilis.

- Every opportunity should be taken to detect cervical infections by careful speculum examination and laboratory tests.

- Pap smear for **early detection** of cervical cancer should be done at least once for women around 40 years old.

<table>
<thead>
<tr>
<th>STI / Genital condition</th>
<th>Diagnostic Test</th>
<th>Site &amp; sampling device/specimen needed</th>
<th>Specimen Transport Laboratory Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viral Hepatitis: Hepatitis B</td>
<td>Serology: anti-HBs: total positive, anti-HBc lgM positive, anti-HBe positive, HBeAg positive, HBsAg positive. HBsAg positive for &gt; 6 months, HBeAg positive, anti-HBeAg positive, HBV DNA.</td>
<td>Blood.</td>
<td>Specimens for PCR must be transported to laboratory and processed within 4 hours.</td>
</tr>
<tr>
<td>Viral Hepatitis: Hepatitis C</td>
<td>Serology: anti-HCV positive. Biochemistry: LFTs. HCV PCR (qualitative), HCV PCR (quantitative) indicates degree of viremia in active infection.</td>
<td>Blood.</td>
<td></td>
</tr>
<tr>
<td>Warts</td>
<td>Clinical diagnosis. Unusual or persistent lesions should be biopsied.</td>
<td>Genital lesion.</td>
<td></td>
</tr>
</tbody>
</table>
6.0 Introduction to Syndromic Management

Several approaches can be used in the management of STIs. These include aetiological, clinical and the syndromic-based approaches. The aetiological approach requires that the clinician sees the patient, takes specimen and waits for the laboratory results before giving treatment to the patient. This approach requires a good laboratory setting and well-trained personnel for the different laboratory procedures that are needed.

However, this approach has failed in various parts of the developing world due to lack of sufficient equipment and personnel. There is also an added disadvantage in that many patients may fail to return for their results and will therefore not get treatment.

Clinical based approach is another widely used method that requires the presence of skilled clinician to make a diagnosis based on his knowledge and experience before initiating presumptive treatment. This method works well with the aetiological based approach and has the added advantage of offering effective treatment to a bigger number of clients than etiological based alone. However, in a resource poor setting where skilled manpower is scarce, its feasibility has been put to question.

The syndromic approach uses clinical algorithms or flow charts developed for each of the commonly presenting syndromes in STIs. The flow charts represent a combination of practical and scientific information necessary for decision making. This approach has been widely used especially in developing countries due to its non requirement of equipment, easiness of use and immediate provision of services to all clients. Many STIs/RTIs can be identified and treated based on characteristic symptoms and signs (Table 6.1).

Symptoms and signs can be grouped together into syndromes: upper respiratory infection, gastroenteritis and vaginal discharge are examples of common syndromes. It is often difficult to know exactly what organism is causing the syndrome, and treatment may need to cover several possible infections. In some cases, females are asymptomatic. Flow charts for each of the STI syndromes: vaginal discharge, urethral discharge, lower abdominal pain, genital ulcer disease and ophthalmia neonatorum flow charts have been developed.
<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Possible Aetiological Agent</th>
<th>Clinical presentation</th>
<th>Associated features</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal discharge</td>
<td><em>Neisseria gonorrhoea</em></td>
<td>Greenish yellow discharge may be massaged from the urethra or seen oozing from the endocervix.</td>
<td>Painful and frequent micturition, swollen and tender Bartholin’s glands. Lower abdominal pain.</td>
<td>Pelvic infection, tubal blockage with infertility or ectopic pregnancy, Bartholin’s abscess, disseminated infection, ophthalmia neonatorum.</td>
</tr>
<tr>
<td>Chlamydia trachomatis</td>
<td>Scanty mucopurulent or purulent discharge</td>
<td>Minimal or no symptoms. There may be painful micturition and vulvo-vaginal itching.</td>
<td></td>
<td>Ophthalmia neonatorum, pelvic infection with tubal blockage and infertility or ectopic pregnancy.</td>
</tr>
<tr>
<td>Trichomonas vaginalis</td>
<td>Frothy, profuse, greenish yellow, foul smelling discharge</td>
<td>Vulvo-vaginal itching, painful swollen Bartholin’s glands. The cervix may have punctate hemorrhagic spots. Erosion which may lead to bleeding.</td>
<td>None special</td>
<td></td>
</tr>
<tr>
<td>Candida albicans, other Candida sp.</td>
<td>White, curd-like discharge involving the vaginal wall and cervix.</td>
<td>Iching of the vulva or vagina. Inflamed and swollen vulva leaves a raw area in swelling off.</td>
<td></td>
<td>Oral thrush in newborn babies</td>
</tr>
<tr>
<td>Gardnerella vaginalis (anaerobic bacteria)</td>
<td>Profuse foul smelling and homogeneous greyish white discharge. Adherent to vaginal wall</td>
<td>No itching, no vulvar erythema</td>
<td></td>
<td>None special</td>
</tr>
<tr>
<td>Normal menstruation cycle</td>
<td>White watery discharge</td>
<td>None, or there may be a history of amenorrhoea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcinoma of the cervix</td>
<td>Blood stained discharge</td>
<td>Foul smelling discharge, Pelvic pain or discomfort. Intermenstrual bleeding and after sexual contact</td>
<td></td>
<td>Anaemia, ulceria, death.</td>
</tr>
<tr>
<td>Syndrome</td>
<td>Possible Aetiological Agent</td>
<td>Clinical presentation</td>
<td>Associated features</td>
<td>Complications</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Urethral discharge</td>
<td><em>Neisseria gonorrhoea</em></td>
<td>Abundant purulent discharge dropping from the urethra, incubation period 3-10 days</td>
<td>Painful and frequent miction with or without testicular pain</td>
<td>Urethral stricture, epididymo-orchitis, prostatitis, watering can perineum infection, disseminated infection</td>
</tr>
<tr>
<td>Chlamydia trachomatis</td>
<td></td>
<td>Mucoid or serous discharge scanty, usually seen in the morning, incubation period 10-14 days, urethral irritation</td>
<td>Painful and frequent miction</td>
<td>Epididymo-orchitis infertility</td>
</tr>
<tr>
<td>Genital ulcer diseases</td>
<td><em>Herpes simplex virus</em></td>
<td>Multiple shallow and tender ulcers, may start as vesicles grouped together, itchy, incubation period 1 week</td>
<td>Tender lymphadenopathy may be recurrent rarely suppurative</td>
<td>Infection of the newborn at birth</td>
</tr>
<tr>
<td></td>
<td><em>Treponema pallidum</em></td>
<td>Single, painless, relatively clean ulcers without pus, incubation period up to 3 weeks</td>
<td>Painless lymphadenopathy</td>
<td>Secondary, tertiary, congenital and latent syphilis</td>
</tr>
<tr>
<td></td>
<td><em>Hemophilus ducreyi</em></td>
<td>Multiple, soft, deep, tender ulcers with profuse pus, incubation period 1 week</td>
<td>Very painful lymphadenopathy which may be fluctuant disfiguration of the genitalia secondary infection</td>
<td>Disfiguration of the genitalia and perineum, lymphatic obstruction leading to elephantiasis of the genitalia, necrosis</td>
</tr>
<tr>
<td></td>
<td><em>Lymphogranuloma venereum (LGV)</em></td>
<td>Single, small and transient ulcers, incubation period 1-2 weeks</td>
<td>Lymphadenopathy, Several glands may be matted together, Fistula and stricture formation.</td>
<td>Fistula formation, destruction of tissues, elephantiasis of genitalia and lower limbs</td>
</tr>
<tr>
<td>Granuloma inguinale</td>
<td><em>Calymmatobacterium Granulomatis (Donovan bodies)</em></td>
<td>Large and beefy ulcers, variable incubation period.</td>
<td>None or rarely lymphadenopathy</td>
<td>Pseudo-ulcers</td>
</tr>
<tr>
<td>Syndrome</td>
<td>Possible Aetiological Agent</td>
<td>Clinical presentation</td>
<td>Associated features</td>
<td>Complications</td>
</tr>
<tr>
<td>---------------------------</td>
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<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Inguinal bubo</td>
<td>Hemophilus ducreyi</td>
<td>Several nodes matted together</td>
<td>There may be history of a healed ulcer</td>
<td>See under LGV in table</td>
</tr>
<tr>
<td></td>
<td>Chlamydia trachomatis (L1-L3 immunotypes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lymphogranuloma venereum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Condyloma acuminatum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Human papilloma virus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genital venereal warts</td>
<td>Molluscum contagiosum</td>
<td>Vulvarulcer like warts, may be single or multiple on the vulva, vagina, perineal areas, penis, urethra and sub-inguinal</td>
<td>Vaginal discharge, pain and bleeding on cervix or touch</td>
<td>Secondary infection, bleeding which may lead to anaemia, cancer of the penis, cervix, or vulva</td>
</tr>
<tr>
<td></td>
<td>Pox virus group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower abdominal pain</td>
<td>Neisseria gonorrhoea</td>
<td>Cervical-vaginal discharge, which is purulent Painful with frequent micturition fever, malaize, lower backache. May follow menstrual periods</td>
<td>Pelvic inflammatory disease (PID)</td>
<td>Pelvic abscess, tubal blockage with infertility, septic pregnancy, septicaemia, bacteremia</td>
</tr>
<tr>
<td></td>
<td>Chlamydia trachomatis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ophthalmia neonatrum</td>
<td>N. gonorrhoea</td>
<td>Macroid or purulent discharge within the first month in life</td>
<td>Infamed and swollen eyelids and conjunctivae. The mother may have had vaginal discharge</td>
<td>Blindness if untreated, keratitis, cornea ulcers.</td>
</tr>
<tr>
<td></td>
<td>C. trachomatis and others</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.1 Urethral Discharge

Male patients complaining of urethral discharge or pain on urinating (dysuria) should be examined for evidence of discharge (Figure 6.1). If none is seen, the urethra should be gently massaged from the base of the penis towards the urethral opening (“milking”). It is sometimes difficult to confirm the presence of discharge, especially if the man has recently urinated, and treatment should be considered if symptoms suggest infection. The major pathogens causing urethral discharge are *Neisseria gonorrhea* and *Chlamydia trachomatis*.

In syndromic management, treatment of a patient with urethral discharge should cover these two organisms. Where reliable laboratory facilities are available, a distinction may be made between the two organisms and specific treatment instituted. Patients should be advised to return if symptoms persist 7 days after the start of therapy.

Any sexual partners in the preceding two months should also be treated. This is an opportunity to treat asymptomatic women who may have gonorrhoea or chlamydial infection. Female partners should be treated as for cervical infection. Epididymitis is an occasional complication of untreated urethral infection. Symptoms are abrupt onset of one-sided testicular pain and swelling\(^2\).

Scrotal swelling in men under 35 is commonly a complication of RTIs and can be treated in the same way as urethral discharge. It is important to recognise that scrotal swelling can be due to other causes and can be an emergency. If the patient reports a history of trauma or if the testicle appears elevated or rotated, refer immediately for surgical evaluation.

\(^2\)Differential diagnosis includes testicular torsion which must be ruled out and which is an emergency. If the patient reports a history of trauma or if the testicle appears elevated or rotated, refer immediately for surgical evaluation.
Figure 6.1 Urethral Discharge

History of urethral discharge or symptoms

Take history and examine
Milk urethra if necessary

Discharge's symptoms confirmed?

No

Any other genital disease?

No

4 Cs

YES

Use appropriate flowchart

4 Cs

URETHRITIS TREATMENT
Norfloxacin 800 mg stat and Doxycycline 100 mg BD x 7 days

Persistent symptoms?

No

No further action

YES

ALTERNATIVE TREATMENT
4 Cs

ALTERNATIVE TREATMENT
IM Spectinomycin 2 gm stat and Doxycycline 100 mg BD x 7 days

4 Cs

1. Counseling: Bully with your patient (put yourself in your patient's place), disagree with your patient, discuss the other 3 Cs
2. Compliance: Your patient to use the medication, take the full course of medication and not share or keep it. Follow your other instructions
3. Condom. Proper condom use is the core of any alternative management. Give condom to your patient, explain and demonstrate the proper use of condom.
4. Contact tracing: Your patient should tell all his sexual partners to seek medication.
6.2 Vaginal Discharge

A spontaneous complaint of abnormal vaginal discharge (abnormal in terms of quantity, colour or odour) most commonly indicates:

- Vaginal infection
- Cervicitis.

Vaginal discharge (Figure 6.2) may be due to:

- Sexually transmitted infections such as in:
  - Trichomoniasis (*Trichomonas vaginalis*)
  - Mucopurulent cervicitis due to gonorrhoea (*Neisseria gonorrhoea*) or Chlamydia (*Chlamydia trachomatis*).
- Non-sexually transmitted infections
  - Bacterial vaginosis (multiple organisms)
  - Yeast infection (*Candida albicans*).

However, clinical differentiation between vaginal infection and cervicitis is difficult. An assessment of the woman’s risk status may help in making a diagnosis of cervicitis. If risk assessment is negative, treat for vaginitis. Where it is not possible to differentiate and/or the risk assessment is positive, treat patients for both cervicitis and vaginitis.

All women presenting with abnormal vaginal discharge should receive treatment for bacterial vaginosis and trichomoniasis. Additional treatment for yeast infection is indicated when clinically apparent (white, curd-like discharge, redness of the vulva and vagina, and itching). Yeast infection is a common cause of vaginitis during pregnancy.
**FIGURE 6.2: VAGINAL DISCHARGE or PRURITUS**

History of vaginal discharge
Enquire about lower abdominal pain

Examine for discharge of lower abdominal tenderness

**YES**
Use flowchart for lower abdominal pain

**PREGNANT**
Refer for gynaecological assessment

**NO**

VAGINITIS TREATMENT
Clothinazole 1 pessary intravaginally daily for 6 days and metronidazole 400mg TDS x 5 days

**IF PREGNANT**
Clothinazole 1 pessary intravaginally daily for 6 days

CERVICITIS TREATMENT
Norflaxacin 800mg stat and Doxycycline 100mg BD x 7 days

**IF PREGNANT**
IM Spectromycin 2g stat and Erythromycin 500mg QID x 7 days

PREGNANT
No improvement after 7 days

VAGINITIS TREATMENT and 4Cs

CERVICITIS TREATMENT and 4Cs

Symptoms persist after 7 days

Refer for investigations

---

4Cs
1. Counseling: Empathise with your patient (put yourself in your patient's place), dialogue with your patient; discuss the other 3Cs.
2. Compliance: Your patient should avoid self medication, take the full course of medication and not share or keep it. Follow your other instructions.
3. Condoms: Proper condom use is the only other alternative. Give condoms to your patient. Explain and demonstrate the proper use of condoms.
4. Contact tracing: Your patient should tell all his/her sexual partners to seek medical evaluation.
6.3 Lower Abdominal Pain

All sexually active women presenting with lower abdominal pain should be carefully evaluated for signs of pelvic inflammatory disease (Figure 6.3). In addition, women with other genital tract symptoms should have routine abdominal and bimanual examinations when possible, since some women with PID will not complain of lower abdominal pain. Symptoms suggestive of PID include lower abdominal pain, pain on intercourse (dysparaenunia), bleeding after sex or between periods, and pain associated with periods (if this is a new symptom). Vaginal discharge, pain on urination (dysuria), fever, nausea and vomiting may also be present.

Clinical signs of PID are varied and may be minimal. PID is highly probable when a woman has lower abdominal, uterine or adnexal tenderness, evidence of lower genital tract infection, and cervical motion tenderness. Enlargement or indurations of one or both fallopian tubes, a tender pelvic mass, and direct or rebound abdominal tenderness may also be present. The patient’s temperature may be elevated but is often normal.

Because of the serious consequences of PID, health care providers should have a high index of suspicion and treat all suspected cases. Treatment should be started as soon as the presumptive diagnosis has been made, because prevention of long-term complications is more successful if appropriate antibiotics are administered immediately.

Aetiological agents found in PID include *N. gonorrhea*, *C. trachomatis*, anaerobic bacteria, Gram-negative facultative bacteria, and streptococci. As it is impossible to differentiate between these clinically and a precise microbiological diagnosis is difficult, the treatment regimens must be effective against this broad range of pathogens. Several recommended regimens are given in Treatment tables 7.1 and 7.2.

Partners of patients with PID should be treated for gonorrhoea and chlamydia.

---

3 Other causes of lower abdominal pain which should be considered include: acute appendicitis, urinary tract infection, and ectopic pregnancy. History taking and physical examination should rule out other causes.
Figure 6.3  Lower Abdominal Pain in Women

Patient complains of low abdominal pain

Do abdominal and bimanual examination

Pregnant
Abdominal mass, abdominal tenderness due to surgical or gynaecological causes

Abdominal tenderness or tenderness on moving the cervix

If no tenderness on abdominal examination

SYNPTOMATIC TREATMENT or vaginal treatment if there is vaginal discharge

PELVIC INFLAMMATORY DISEASE TREATMENT
Norflorac 800mg stat and doxycycline 100mg BD × 7 days and Metronidazole 400mg BD × 10 days IF PREGNANT
Refer for obstetric evaluation if PID is suspected

ALTERNATIVE TREATMENT
Azithromycin 1gm PO single dose or Cefixime 400mg PO single dose

Refer for surgical or gynaecological assessment

YES

PID TREATMENT
And 4Cs

If no improvement after 3-7 days

If no improvement after 7 days

Refer for investigations

Start flowchart again after repeating abdominal examination

*Surgical or gynaecological causes are determined by rebound tenderness and/or guarding; last menstrual period overdue; recent abortion or delivery; menorrhagia or metrorrhagia

Notes:
1. Compassion: Empathise with your patient (put yourself in your patient’s place), disagree with your patient, discuss the other 3Cs
2. Compliance: Your patient should avoid self-medication. Give full course of medication and instructions or keep it. Follow your other instructions
3. Condom: Proper condom use is the only other alternative to avoidance. Give condom to your patient. Explain and demonstrate the proper use of condom
4. Contact tracing: Your patient needs to inform their sexual partner to treat medication
6.4 Genital Ulcer

Genital ulcer disease (GUD) patterns vary in different parts of the world. In Kenya genital herpes is currently the most prevalent cause of GUD accounting for over 80% of all genital ulcer diseases. Syphilis followed by chancroid are the second and third commonest genital ulcer diseases seen in the country. Differential diagnosis of genital ulcers using clinical features is inaccurate, particularly where several types of GUD are common. Clinical manifestations and patterns of genital ulcer disease may be different in people with HIV infection.

If examination confirms the presence of genital ulcers, treatment for both syphilis and chancroid should be provided to the patient at the time of their initial presentation, to ensure adequate therapy in case they do not come back. Due to the high prevalence of HIV infection in the country, an increasing proportion of cases of genital ulcer disease are due to herpes simplex virus.

Herpetic ulcers (and ulcerative STIs in general) in HIV-infected patients may be atypical and persist for a long time. Although there is no cure for HSV-2, treatment with antivirals such as acyclovir, can shorten the duration of active disease and may help reduce transmission. Although acyclovir is currently quite expensive and largely unavailable in the country, patients with severe HSV-2 or herpes zoster infection, both of which are often associated with HIV infection, should be treated using available alternative drugs.

Laboratory-assisted differential diagnosis of GUD is rarely helpful at the initial visit and may even be misleading. In some circumstances a person may have a reactive serological test from a previous infection, even when chancroid or herpes is the cause of the present ulcer.
Figure 6.4  Genital Ulcer Disease (GUD)

Patient complains of a genital sore or ulcer

Take history and examine for ulcers

Ulcer present? No

Offer or refer for HIV counselling and testing and 4Cs

Yes

Treat for HSV2, syphilis and chancroid and 4Cs. Review in 7 days

Ulcer healing? No

Refer for investigations

Yes

Continue HSV2 treatment for further 7 days and alternative GUD treatment. Review in 7 days.

Ulcer healing? No

Refer for investigations

Yes

Offer or refer for HIV counselling and testing and 4Cs

GENITAL ULCER DISEASE (GUD) TREATMENT
Erythromycin 500mg TID x 7 days and Benzathine Penicillin 2.4mg IM stat. If Penicillin allergy, use Erythromycin 500mg QID x 14 days

ALTERNATIVE GUD TREATMENT
Ciprofloxacin 500mg single dose
*Include HSV2 treatment if prevalence is 30% or higher
Acamivir 400 mg TID x 7 days

**GUD heals slowly. Improvement is defined as signs of healing and reduction of pain. People with HIV infection will be slower in responding to GUD treatment.

**
1. Counselling: Empathise with your patient put yourself in your patient's place; dialogue with your patient, discuss the other 3Cs
2. Communication: Your patient must understand medication, know the full course of medication and not change or stop. Follow your other instructions
3. Counselling: Proper counselling and education to your patient. Give your patient the proper use of medication
4. Counselling: Your patient must trust and support your partner to use medication
6.5 Inguinal Bubo

Inguinal and femoral buboes are localised enlargements of the lymph nodes in the groin area, which are painful and may be fluctuant (soft with a feeling of liquid inside). When buboes rupture, they may appear as ulcers in the inguinal area. Buboes are frequently associated with *lymphogranuloma venereum* and chancroid. In most cases of chancroid, a genital ulcer is also visible, but internal vaginal ulcers in women may be missed. Where *granuloma inguinale* (donovanosis) is common, it should also be considered as a cause of inguinal bubo.

The genital ulcer flowchart and treatment table should always be used when buboes are seen with a genital ulcer (Figure 6.4). Non-sexually transmitted local and systemic infections (e.g. infections of the lower limb) can also cause swelling of inguinal lymph nodes. Note: Some cases may require longer treatment than the 14 days recommended: *Erythromycin tablet 500 mg qid for 14 days or Doxycyline capsules 100 mg bd for 14 days*

Fluctuant lymph nodes should be aspirated through healthy skin. Incision and drainage or excision of nodes may delay healing and should not be attempted.

6.6 Ophthalmia Neonatorum

All newborn babies, regardless of maternal signs or symptoms of infection, should receive prophylaxis against *ophthalmia neonatorum* due to gonorrhoea or chlamydial infection (Figure 6.5). The eye ointments and drops that may be used are listed below.

**Prevention of ophthalmia neonatorum**

Instil one drop of the following in each eye within one hour of birth:

- Tetracycline ophthalmic ointment (1%) in a single application
- OR
- Povidone iodine drops 2.5% in a single application
- OR
- Silver nitrate (1%) freshly prepared aqueous solution in a single application.
Figure 6.5  Ophthalmia Neonatorum

Neonate with eye discharge

Take history and examine

DISCHARGE PRESENT?

NO

NO FURTHER ACTION

YES

OPHTHALMIA NEONATORUM TREATMENT and 4Cs

Follow up in 24 hrs

Not better

ALTERNATIVE TREATMENT and 4Cs

Better

Continue with 1% tetracycline eye ointment TDS x 10 days and 4Cs

OPHTHALMIA NEONATORUM TREATMENT
1% tetracycline eye ointment TDS x 10 days
Treat mother for cervicitis and partner for urethritis

ALTERNATIVE TREATMENT
Cefixime 62.5 mg IM stat and 1% tetracycline eye ointment TDS x 10 days and 4Cs

4Cs
1. Counseling: Empathize with your patient (put yourself in your patient’s place), listen well, and reassure them.
2. Compliance: Your patient needs to take the medication, follow the full course of medication and return and keep it. Follow your other instructions.
3. Condom: Properly use the condom or other alternative to abstinence. Give a condom to your patient. Explain and demonstrate the proper use of a condom.
4. Contact tracing: Your patient needs to be tested for syphilis and treated with antimicrobial therapy.
6.7 Congenital Syphilis

Syphilis test results should be reviewed at this time, and the newborn evaluated for signs of congenital syphilis which includes:

- Irritability
- Watery discharge form the nose
- Small blister (vesicles) on the palms and soles.
- Copper coloured, flat or bumpy (maculopapular) rash on the face, palms and soles
- Rash at the junction of the skin and mucous membranes of the mouth
- Saddle nose (no bridge to nose).

Older children may have bone pain, refusal to move a painful extremity, saber shins (bone abnormality of the lower leg), joint swelling, abnormal teeth (notched and peg shaped-Hutchinson teeth, rhagades (scarring of the skin around earlier lesions on the mouth, genitalia and anus, visual loss, clouding of the cornea, decreased hearing or deafness, and gray mucous like patches on the anus and outer vagina (condyloma lata).

Women who have not previously been tested for syphilis should be tested. Results should be obtained as soon as possible so that early treatment can be given to newborns of mothers who test positive. Newborn babies should be treated regardless of whether the mother received treatment for syphilis during pregnancy. The mother and her partner should also be treated if this has not been done already.
KEY POINTS

Many STIs/RTIs can be identified and treated based on characteristic symptoms and signs which can be grouped together into syndromes such vaginal discharge, urethral discharge and genital ulcer diseases.

Women with **vaginal discharge** should be treated for common vaginal infections (bacterial vaginosis, trichomoniasis). Treatment for yeast infection should be added if associated clinical signs are present.

Women with **lower abdominal pain** should be treated for gonorrhoea, chlamydia and anaerobic infections. Hospitalisation or referral should be considered if infection is severe or if there are other serious signs.

Women and men with **genital ulcers** should be treated for syphilis and chancroid. Management of genital herpes, including antiviral treatment where available, should be added in regions where HSV-2 is common.

Men with **urethral discharge** should be treated for gonorrhoea and Chlamydia. Women whose partners have urethral discharge should receive the same treatment.

All asymptomatic patients should receive **counselling** on treatment compliance, risk reduction and condom use.

Treatment should be given to **partners of patients** with genital ulcer or urethral discharge. Partners of women treated for PID or cervicitis should be counselled and offered treatment.

**Routine follow-up visits** are not necessary for most syndromes, provided the patient completes treatment and has had improvement of symptoms. Women treated for PID should be re-examined 2 – 3 days after starting treatment or sooner if they have fever.
7.0 Introduction

Sexual violence is common. Both males and females are vulnerable in childhood, but women are much more at risk in adolescence and adulthood. Studies from different parts of the world have found that 7 - 36% of girls and 3 - 29% of boys suffer from sexual abuse in childhood, with a majority of studies reporting 1.5 - 3 times more sexual violence against girls than boys.

The percentage of adolescents who have been coerced into sex can range from approximately 7% to 46% of females and 3% to 20% of males, depending on the country. Population-based studies report that between 6% and 46% of women have experienced attempted or completed forced sex by an intimate partner or ex-partner at some time in their life.

Rape and domestic violence account for an estimated 5–16% of healthy years of life lost in women of reproductive age. STIs have been found in up to 43% of people, who have been raped, with most studies reporting rates between 5% and 15% depending on the disease and type of test used.

It is important that health care providers have a high index of suspicion and awareness about sexual violence. Many individuals are reluctant to talk directly about abuse by their intimate partner. They may be ashamed to discuss it, or they may be afraid of future violence if the situation is exposed. Often, because they feel uncomfortable talking about sexual violence, individuals may come to the clinic with other nonspecific complaints or requesting a checkup assuming that the health care provider will notice anything abnormal that needs treatment.

7.1 Medical and Other Care for Survivors of Sexual Assault

All reproductive health facilities should have up-to-date policies and procedures for managing persons who have survived or experienced sexual violence that are in line with Kenyan law. Whether comprehensive services are provided on-site or through referral, providers need to be clear about the protocol to be followed and how to manage crises. They should have the necessary supplies, materials and referral contact information in order to deal confidentially, sensitively and effectively with people who have experienced sexual violence.
1. Be prepared
2. Initial evaluation and consent
3. Documentation and evidence
4. Medical management
5. Referral to special services.

Step 1: Be prepared
Be prepared to identify survivors of sexual violence and offer them appropriate clinical and psychological care. The following services should be available, on-site or through referral, for patients who have experienced sexual violence:

- Essential medical care for any injuries and health problems
- Collection of forensic evidence
- Evaluation for STIs and preventive care
- Evaluation of pregnancy risk and prevention, if necessary
- Psychosocial support (both at time of crisis and long-term)
- Follow-up services for all of the above.

Step 2: Initial evaluation and consent
Survivors of sexual assault have experienced a traumatic event and should be rapidly evaluated to determine whether they need emergency medical, psychological or social intervention. It is important to remember that the trauma of the event may make parts of the examination difficult. Explain carefully the steps that will be taken and obtain written informed consent from the patient before proceeding with examination, treatment, notification or referral.

Step 3: Documentation and evidence
A qualified provider who has been trained in the required procedures should perform the examination and documentation of evidence. The examination should be deferred until a qualified professional is available, but not for longer than 72 hours after the incident. It is the patient’s right to decide whether to be examined. Treatment can be started without examination if that is the patient’s choice. For minors under the age of consent usually parental consent is required. If possible, do not deny adolescents immediate access to medical services.
Where facilities or referral for a more complete examination is not available, the following minimal information should be collected:

- Date and time of assault;
- Date and time of examination;
- Patient’s statement;
- Results of clinical observations and any examinations conducted.

Such information should be collected or released to the authorities only with the survivor’s consent. Be aware of legal obligations that will follow if the assault is reported and goes to legal proceedings. Ideally, a trained health care provider of the same sex should accompany the survivor during the history taking and examination. A careful written record should be made of all findings during the medical examination. Pictures to illustrate findings may help later in recalling details of the examination.

**Step 4: Medical management**

For many women, the trauma of the event may be aggravated and prolonged by fear of pregnancy or infection, and knowing that the risks can be reduced may give immense relief. The medical management of the survivor includes treatment of any injuries sustained in the assault, and initial counselling. Other aspects of medical management of rape and sexual violence victims are emergency contraception, post-exposure prophylaxis for STIs, post-exposure prophylaxis for HIV, prophylactic immunisation against hepatitis B, and administration of tetanus toxoid. These are discussed below:

**7.1.1 Emergency Contraception**

Emergency contraceptive pills can be used up to 5 days after unprotected intercourse. However, the sooner they are taken, the more effective they are preferably within 72 hours. Options for emergency contraception include:

- **Postinor 2®**
  - Two tablets in a single dose
- **Eugynon® or Neogynon®**
  - Two tablets stat then repeat after 12 hours
- **Microgyn® or Nordette®**
  - Four tablets stat then repeat after 12 hours
A second option for emergency contraception is insertion of a copper-bearing IUCD within 5 days of the rape. This will prevent more than 99% of pregnancies. The IUCD may be removed during the woman’s next menstrual period or left in place for continued contraception. If an IUCD is inserted, make sure to give full STI treatment as recommended in the treatment options given in Table 7.1 and Table 7.2.

If more than 5 days have passed, counsel the woman on availability of abortion services (in most countries, post-rape abortion is legal). A woman who has been raped should first be offered a pregnancy test to rule out the possibility of pre-existing pregnancy.

### 7.1.2 Post Exposure Prophylaxis of STIs

Another concrete benefit of early medical intervention following rape is the possibility of treating the person for a number of STIs. STI prophylaxis can be started on the same day as emergency contraception, although the doses should be spread out (and taken with food) to reduce side effects such as nausea.

The incubation periods of different STIs vary from a few days for gonorrhoea and chancroid to weeks or months for syphilis and HIV. Treatment may thus relieve a source of stress, but the decision about whether to provide prophylactic treatment or wait for results of STI tests should be made by the woman.

Treatment tables 7.1 and 7.2 lists options that are effective whether taken soon after exposure or after the appearance of symptoms. Treatment for possible STIs in children is similar to that for adults.
<table>
<thead>
<tr>
<th>Coverage</th>
<th>Option 1</th>
<th>Option 2</th>
<th>If patient is</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syphilis</td>
<td>benzathine penicillin 2.4 million units by single intramuscular injection</td>
<td>doxycycline 100 mg orally twice a day for 14 days (if case of penicillin allergy, only)</td>
<td>pregnant, breastfeeding or under 16 years old, Choose one from each box (3 or 4 drugs)*</td>
</tr>
<tr>
<td>Gonorrhea/Chancroid</td>
<td>ceftriaxone 400 mg orally as a single dose, or cefixime 125 mg by intramuscular injection</td>
<td>ciprofloxacin 500 mg orally as a single dose, or spectinomycin 2 g by intramuscular injection</td>
<td>cefixime 400 mg orally as a single dose, or ceftriaxone 125 mg by intramuscular injection</td>
</tr>
<tr>
<td>Chlamydia/lymphogranuloma venereum</td>
<td>azithromycin 1 g orally as a single dose</td>
<td>doxycycline 100 mg orally twice a day for 7 days, or tetracycline 500 mg orally 4 times a day for 7 days</td>
<td>azithromycin 1 g orally as a single dose, or erythromycin 500 mg orally 4 times a day for 7 days</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>metronidazole* 2 g orally as a single dose</td>
<td>tinidazole 2 g orally as a single dose</td>
<td>metronidazole 2 g orally as a single dose, or 400-500 mg 3 times a day for 7 days</td>
</tr>
</tbody>
</table>

*a-Benzathine penicillin can be omitted if treatment includes either azithromycin 1 g or 14 days of doxycycline, tetracycline or erythromycin, all of which are effective against incubating syphilis.
*b-Metronidazole should be avoided in the first trimester of pregnancy. Patients taking metronidazole should be cautioned to avoid alcohol. *These drugs are contraindicated for pregnant or breastfeeding women.
7.1.3 Post exposure prophylaxis of HIV

The possibility of HIV infection should be thoroughly discussed as it is one of the most feared consequences of rape. At present, there is no conclusive evidence on the effectiveness of post exposure prophylaxis (PEP) in preventing infection following sexual exposure to HIV, and PEP is not widely available. If PEP services are available, rape survivors who wish to be counselled on the risks and benefits should be referred within 72 hours. The provider should assess the person’s knowledge and understanding of HIV transmission and adapt the counselling appropriately. Counselling should take into account the prevalence of HIV and other factors (trauma, other STI exposure) that could influence transmission. If the person decides to take PEP, the national guidelines recommend the use of duo – therapy (AZT + 3TC BD for 28 days or D4T + 3TC BD for 28 days – with syrup based regimens for children).

### Table 7.2  STI Presumptive Treatment Options for Children

<table>
<thead>
<tr>
<th>Coverage</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All single-dose antibiotics are highly effective. Choose one from each box (3 or 4 drugs)*</td>
<td>Older children and adolescents</td>
<td></td>
</tr>
<tr>
<td>Syphilis</td>
<td>Benzathine penicillin 50 000 units/kg of body weight by single intramuscular injection, or erythromycin 12.5 mg/kg of body weight orally 4 times a day for 14 days</td>
<td>&gt;45 kg, use adult protocol</td>
<td></td>
</tr>
<tr>
<td>Gonorrhoea/</td>
<td>Cefixime 8 mg/kg of body weight as a single dose, or ceftriaxone 125 mg by intramuscular injection, or spectinomycin 40 mg/kg of body weight (maximum 2 g) by intramuscular injection</td>
<td>&gt;45 kg, use adult protocol</td>
<td></td>
</tr>
<tr>
<td>Chlamydia</td>
<td>Erythromycin 12.5 mg/kg of body weight orally 4 times a day for 7 days</td>
<td>12 years or older, use adult protocol</td>
<td></td>
</tr>
<tr>
<td>Lymphogranuloma</td>
<td>Metronidazole 5 mg/kg of body weight orally 3 times a day for 7 days</td>
<td>12 years or older, use adult protocol</td>
<td></td>
</tr>
<tr>
<td>Venereum</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Patients taking metronidazole should be cautioned to avoid alcohol. Additional antibiotic treatments for gonorrhoea are given in Annex 3.
### 7.1.4 Prophylactic Immunisation Against Hepatitis B

Hepatitis B virus (HBV) is easily transmitted through both sexual and blood contact. Several effective vaccines exist although they are expensive and require refrigeration. If HBV vaccine is available, it should be offered to survivors of rape within 14 days if possible. Three intramuscular injections are usually given, at 0, 1 and 6 months (see instructions on vaccine package as schedules vary by vaccine type). HBV vaccine can be given to pregnant women and to people with chronic or previous HBV infection. Where infant immunisation programmes exist, it is not necessary to give additional doses of HBV vaccine to children who have records of previous vaccination. Hepatitis immune globulin is not needed if vaccine is given.

### 7.1.5 Tetanus Toxoid

Prevention of tetanus includes careful cleaning of all wounds. Survivors should be vaccinated against tetanus if they have any tears, cuts or abrasions. If previously vaccinated, only a booster is needed. If the person has never been vaccinated, arrangements should be made for a second vaccination one month later and a third 6 months to one year later. If wounds are dirty or over 6 hours old, and the survivor has never been vaccinated, tetanus immune globulin should also be given.

### Step 5: Referral to special services

Following the initial provision of care, referrals may be needed for additional services such as psychosocial support. An evaluation of the person’s personal safety should be made by a protective services agency or shelter, if available, and arrangements made for protection if needed. Referral for forensic examination should be made if this is desired but could not be adequately performed at the clinic visit.

It is essential to arrange follow-up appointments and services during the first visit. The woman should be clearly told whom to contact if she has other questions or subsequent physical or emotional problems related to the incident. Adolescents in particular may need crisis support as they may not be able or willing to disclose the assault to parents or carers.

The minimum standards for providing comprehensive post rape care in health facilities are outlined in Table 7.3 and Figure 7.1 illustrates the emergency management of rape survivors.
<table>
<thead>
<tr>
<th>All health facilities without a laboratory (public &amp; private)</th>
<th>Minimum standards for Medical management of survivors</th>
<th>Reporting/record requirements for health facilities</th>
<th>Minimum capacity requirements at health facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage injuries as possible</td>
<td>Fill in PRC1 form in duplicate</td>
<td>A trained nurse</td>
<td></td>
</tr>
<tr>
<td>Detailed history, examination and documentation (refer for HVS, PEP/ECSTI)</td>
<td>Maintain PRC register</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All health facilities with a functioning Laboratory (public &amp; private)</th>
<th>Minimum standards for Medical management of survivors</th>
<th>Reporting/record requirements for health facilities</th>
<th>Minimum capacity requirements at health facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage injuries as possible</td>
<td>Fill in PRC1 form in duplicate</td>
<td>A trained nurse and/or a clinical officer</td>
<td></td>
</tr>
<tr>
<td>Detailed history, examination and documentation (including HVS)</td>
<td>Maintain a PRC register</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medically, 1st doses of PEP/EC should be provided</td>
<td>Maintain a PRC laboratory register</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(even where follow-up management is not possible)</td>
<td>Referral to comprehensive post rape care facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Where VCT services are available, provide initial counselling</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All health facilities where HIV, ARV or a Comprehensive care clinic (CCC) where ARV can be monitored and comprehensive post rape care facilities can be provided</th>
<th>Minimum standards for Medical management of survivors</th>
<th>Reporting/record requirements for health facilities</th>
<th>Minimum capacity requirements at health facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage injuries as much as possible</td>
<td>Fill in PRC1 form in duplicate</td>
<td>1 medical or clinical officer trained in ARV/PEP management</td>
<td></td>
</tr>
<tr>
<td>Detailed history, examination and documentation</td>
<td>Maintain PRC register</td>
<td>1 trained counsellor for trauma, HIV testing and PEP adherence counselling</td>
<td></td>
</tr>
<tr>
<td>Provide emergency and on-going management of FEP</td>
<td>Maintain laboratory PRC register</td>
<td>Laboratory for HIV &amp; Haemoglobin tests</td>
<td></td>
</tr>
<tr>
<td>Provide EC</td>
<td>Fill in PRC2 form to follow-up management of survivors</td>
<td>Preservation of sperms from a HVS specimen can be done in the same way as a pap smear</td>
<td></td>
</tr>
</tbody>
</table>
Figure 7.1  Flow Chart for the Emergency Management of Rape Survivors

Any life threatening injuries should take priority over other aspects of post-rape care

If present within 72 hours of rape offer first dose of PEP as soon as possible:

- Children 10-20kg: 1 x 100mg Capsules of Zidovudine - TID + 1/2 of 150mg Tablet (75mg) of Lamivudine - BD
- Children (20-40kg): 2 x 100mg Capsules Zidovudine - ED + 1 x 150 mg Tablets of Lamivudine - BD
- Adults and children ≥ 40 kg: One tablet of AZT/3TC* BD for 28 days *(zidovudine 300 mg + lamivudine 150 mg)

Provide a drink of water so PEP and EC can be taken straight away
(Tables can be crushed and capsules opened and mixed with food or milk for children)

History and Physical Examination
1. Take detailed history, examination and documentation of all bruises, cut, marks, abrasions on the head, chest, Hair, Mouth, Neck, breasts, Perineum, Anus, Vagina (Use the PRC form)
2. Take samples (sewbs of vagina, anus and mouth where necessary; clothing worn during assault)
3. Label samples and record and send to the laboratory
Refer for on-going management (It is important to stress the need for the client to come for follow up at the mentioned date/time at the OPD/CCC or HIV care clinic

Provide sufficient dose of PEP for the patient to take until they can attend the OPD/CCC

Warn the patient they should expect some side effects from the PEP such as headache, nausea, tiredness etc.

Legend
- 3TC - Lamivudine
- 4T - Stavudine
- AZT - Zidovudine
- IDV - Indinavir
- NVP - Nevirapine
- EFV - Efavirenz

NOTES
- 4T/3TC can be used if AZT/3TC is not available
- For children, AZT and 3TC syrup should be used
- Some centres offer a third drug e.g.: IDV though this is not a general recommendation. EFV (teratogenic) should not be used post rape and NVP is hepatotoxic if started BD
7.2 Sexual Assault and HIV Therapy in Pregnancy

7.2.1 Sexual Assault in Pregnancy
This is an important public health problem which health providers and other personnel who offer services such as counseling and care and support need to be aware of. Once pregnancy has been established through history taking and physical examination, the management steps outlined in Section 7.1 need to be followed.

7.2.2 HIV Therapy in Pregnancy
According to the National PMTCT Guidelines in Kenya (MOH 2005), the use of antiretroviral drugs in pregnant women and women of child-bearing potential is based on three clinical situations. These are:

- HIV infected women with indications for initiating ARV treatment who may become pregnant.
- HIV infected pregnant women without indications for ARV treatment.
- Pregnant women of unknown HIV status at the time of labour or women in labour known to be HIV infected who have not received ARV drugs before labour.

Table 7.4 provides a summary of the clinical situation and the recommended ARV treatment for pregnant women and women of child-bearing potential in Kenya (source: National PMTCT Guidelines, 2005).
Clinical Situation Recommendation

HIV-infected women with indications for initiating ARV treatment who may become pregnant.

**First line regimen**: d4T + 3TC + NVP
EFavirenz (EFV) should be avoided in women of childbearing age, unless effective contraception can be assured. Exclude pregnancy before starting treatment with EFV.

HIV-infected pregnant women without indications for ARV treatment.

**First choice regimen**: AZT and NVP

*Women*
AZT 300mg twice a day starting at 28 weeks or as soon as possible thereafter (up to 36 weeks). Continue AZT 300mg at onset of labour and every three hours until delivery. In addition, women should receive single-dose NVP 200mg at the onset of labour or upon arrival at the facility.

*Alternative intrapartum dosing regimen*: Single-dose AZT 600mg plus single-dose NVP 200mg at the onset of labour or upon arrival at the facility.

*Infants*
NVP 2mg/kg oral suspension immediately after birth or within 72 hours and AZT 4mg/kg twice daily for 7 days OR NVP 2mg/kg oral suspension immediately after birth or within 72 hours.

**Alternative regimen**: NVP only

*Women*
NVP 200mg at the onset of labour or upon arrival at the facility.

*Infants*
NVP 2mg/kg oral suspension immediately after birth or within 72 hours.

**Alternative regimen**: AZT only

*Women*
Starting at 28 weeks or as soon as possible thereafter (up to 36 weeks), AZT 300mg twice a day. Continue AZT 300mg at the onset of labour and every three hours until delivery OR starting at 28 weeks or as soon as possible thereafter (up to 36 weeks), AZT 300mg twice a day. AZT 600mg at the onset of labour.

*Infants*
AZT 4mg/kg oral suspension twice daily for 7 days OR AZT 2mg/kg oral suspension 4 times a day (every 6 hours) for 7 days.

Pregnant women of unknown HIV status at the time of labour or women in labour known to be HIV infected who have not received ARV drugs before labour.

If there is time, offer HIV testing and counseling to women of unknown HIV status and if possible, initiate intrapartum ARV prophylaxis.

*Women*
Give NVP 200mg. If in advanced labour, do not give the dose but follow the infant recommendation below.

*Infants*
NVP 2mg/kg oral suspension immediately after birth or within 72 hours and AZT 4mg/kg twice daily for 7 days.

If there is insufficient time for HIV testing and counseling during labour, then offer testing and counseling as soon as possible postpartum.
KEY POINTS

- Sexual violence is common but is frequently not talked about by the person concerned. Health care providers should maintain a high index of suspicion, and should ask about experience of sexual violence or abuse.

- Clinic policies and practice guidelines should be developed in accordance with national legal requirements.

- Women or children who have been sexually abused may need shelter and legal protection. Counselling and supportive services should be available on site or by referral to all patients who have undergone sexual violence or abuse.

- Medical management including prevention of pregnancy and infection, in addition to care of injuries should be provided to all sexual violence or abuse clients. STI prophylaxis and emergency contraception should be available.

- If the person chooses to take legal action forensic examination should be provided and all specimen collected should treated with care for use as evidence. Staff should be trained on how to take forensic specimens, or referral links should be made. If forensic examination service is not available on site referral should be provided to all the clients.
References


APPENDIX I  LABORATORY MANAGEMENT OF STIs/RTIs

A.1 Introduction

STIs/RTIs may present in a variety of ways, the commonest being genital discharge, genital ulcers, genital warts, enlarged lymph nodes, lower abdominal pain and eye discharge in the newborn. HIV infection may present with many systemic manifestations. In all cases, where possible, appropriate specimen should be taken for analysis in the laboratory. The investigations necessary for the major clinical presentations are summarized in Table A1.1 and Table A1.2.

Table A1.1:  Summary of Diagnostic Tests Available for STIs/RTIs

- Directly visualising the organism under the microscope. Examples: Gram staining for gonorrhoea, wet mount for yeast, and dark field microscopy for syphilis.
- Culturing the organism (i.e., growing it in the laboratory). Examples: culturing chlamydia and gonorrhoea.
- Methods for detecting antigen (the organism itself) or using antibody tests that measure the body’s response to the organism. Examples: testing for syphilis or HIV antibodies. Example: enzyme immunoassay (EIA) for Chlamydia or HIV.
- Non-amplified techniques for detecting DNA from the organism. Example: nucleic acid hybridisation.
- Amplified techniques for detecting DNA from the organism. Examples: polymerase chain reaction (PCR), ligase chain reaction (LCR) and transcription mediated amplification (TMA).

A.2 Laboratory Techniques

A.2.1 Microscopy

A.2.1.1 Gram Stain

The Gram stain is a rapid test that is useful in the diagnosis of gonorrhoea, candida vulvovaginitis, and bacterial vaginosis, and in the assessment of urethritis, cervicitis, proctitis, and other infections characterised by genital mucosal discharge. Both the numbers of polymorphonuclear leukocytes (PMNs) and microbial flora present can be assessed. Look for the presence or absence of pus cells, intracellular Gram-negative diplococci and yeast cells and other organisms. Cells and mucus should stain pink. Yeast stains purple. Bacteria are characterised as Gram-positive.
(purple) or Gram-negative (pink), and as cocci (round), bacilli (rod-shaped), or coccobacilli (small in size with morphology in between rods and cocci).

A.2.1.2 Saline And 10% KOH Wet Preparation, Vaginal pH
The saline wet preparation is easily prepared and is used for the rapid detection of Trichomonas vaginalis, “clue” cells associated with bacterial vaginosis, PMNs, and yeast. The Potassium Hydroxide (KOH) prep is used to detect yeast. In addition, a characteristic amine odour may be observed in patients with bacterial vaginosis and T. vaginalis when vaginal secretions are combined with 10% KOH. Vaginal pH >4.5 suggests the presence of bacterial vaginosis and/or trichomoniasis.

A.2.1.3 Urine Microscopy
The microscopic examination of urine is used to assess whether or not pyuria and bacteriuria are present. Also, it can be used as an alternative to a urethral Gram stain to detect the presence of urethritis in men. Finding a variety of bacteria in each field (Gram-negative rods, Gram-positive cocci, Gram-positive rods) or vaginal epithelial cells indicates probable contamination during collection—the smear must be interpreted with caution. As an alternative to urine microscopy, reagent strips containing a leukocyte esterase (LE) test patch are used to detect pyuria (pus in urine specimen from midstream urine) and urethritis (using first-void urine). A nitrite test on the reagent strips is used to detect bacteriuria (bacteria in urine). The nitrite test is based on the ability of bacteria in the urine to reduce nitrate (from the diet) to nitrite.

A.2.1.4 Microscopy for Ectoparasites
Pubic Lice
Microscopic examination of a hair shaft will reveal nits of Phthirus pubis (pubic lice). The adult lice can also be captured and examined microscopically.

Scabies
A clinical diagnosis of scabies can be confirmed by demonstrating microscopically the mite, Sarcoptes scabiei, its eggs, and faecal pellets from a skin scraped sample.
A.2.2 Culture
Cotton, dacron, and calcium-alginate swabs can be used to collect secretions from the area under examination. The secretions can be inoculated on to selective culture media for the isolation and identification of the pathogens. Gonococci are susceptible to drying and temperature extremes and most isolates require an environment rich in carbon dioxide (CO$_2$) for initial growth. Thus, close attention must be paid to these requirements to optimise recovery of the organism. Specimens may be held in transport media for a few hours or they may be directly inoculated onto culture media and incubated in the clinic in a CO$_2$-rich environment. If direct inoculation of culture media is not feasible, specimen swabs are placed in non-nutritive transport medium, such as Cary Blair or Stuart's. The transport media is held at room temperature and sent to the laboratory where the culture media is inoculated and incubated as described above.

A.2.3 Serological Methods
If required blood should be taken to detect antigen (the organism itself) or antibodies which arise as a result of the body’s response to the organism. This can be done by testing for presence of antibodies or antigens e.g. example enzyme immunoassay (EIA) for Chlamydia or HIV.

A.2.4 DNA Probes
Non-amplified techniques such as nucleic acid hybridisation and amplified techniques PCR, LCR and TMA can be used for detecting DNA from the organisms that cause certain infections. The minimum number of organisms needed in a sample for a test to be positive varies from one type of test to another. The lower the number of organisms that can be detected the greater the sensitivity of the test. The new amplified DNA techniques (e.g., PCR, LCR) are extremely sensitive and can detect between 1 and 50 organisms in the sample tested.
B.0 Genital Discharges

B.1 Introduction

The most common pathogens associated with female genital discharges are *N. gonorrhoea*, *T. vaginalis*, *C. trachomatis*, *C. albicans* and *Bacteroids*. In females, gonorrhoea is very often asymptomatic and even when symptoms are present the Gram stain will most often not show diplococci; in addition, false positive Gram stains are common. A Gram-stained smear is therefore of limited value for the diagnosis of gonorrhoea in women and culture is more frequently indicated than in males.

In males *N. gonorrhoea* and *C. trachomatis* are the commonest organisms isolated from male genital discharges. Laboratory diagnosis in a male with urethral discharge should not be made routinely as the clinical diagnosis is most often sufficient and the laboratory services may otherwise be overburdened. Gonorrhoea can be diagnosed by direct microscopy of Gram-stained smears of urethral discharge with a specificity and sensitivity above 95%, so that most often this is the only test required. If the patient has no symptoms, or a test-of-cure is required, culture should be performed.

B.2 Specimen Collection and Handling

Cotton wool swabs should be used for collecting urethral discharge specimens. If these are not available, a bacteriological wire loop sterilised by flaming should be used. Early morning urine may be examined if there is no obvious discharge. This should be centrifuged and the deposit examined for pus cells and bacteria by wet preparation and Gram stain. When oral sex is practised, throat swabs should also be obtained. In females, when the diagnosis is not clear or there is no response to treatment, an endocervical and in some rare instances a rectal or urethral swab should be obtained using the swabs as described under urethral discharge. The endocervical specimens should be obtained under the guidance of the speculum.

B.2.1 Neisseria gonorrhoea

B.2.1.1 Microscopy

The Gram stain is a rapid test that is useful in the diagnosis of gonorrhea. Both the numbers of polymorphonuclear leukocytes (PMNs) and microbial flora present can be assessed. For positive results PMN should be $\geq 1$ with intracellular Gram-negative diplococci of typical morphology. Extracellular Gram-negative diplococci may also be present, and numerous PMNs are usually
present. Care should be taken to distinguish between Gram-negative diplococci and Gram-negative rods. For negative results, no intracellular Gram-negative diplococci are present. Extracellular Gram-negative diplococci or Gram-negative diplococci of atypical morphology may be present, but do not meet the criteria for a presumptive diagnosis of GC (wait for culture or nucleic acid amplification Test (NAAT) results for final diagnosis). Mononuclear cells and PMNs may or may not be present.

B.2.1.2 Culture

Using a swab, collect secretions from the area under examination. Cotton, dacron, and calcium-al-ginate swabs can be used. Patients for urethral swabs should preferably should not have urinated for at least 2 hours before collection. The swab should be inserted 1 to 2 cm into the urethra and gently rotated. For cervical swab, a large cotton swab should be used to remove external vaginal secretions from the cervix before collection of endocervical secretions. A second clean swab should be used to collect endocervical secretions. Rotate the swab and allow several seconds for absorption. Rectal swabs need to be inserted at least 2 cm, the swab should be rotated to sample areas of pus but not feces. An anoscope can be used for rectal specimen collection. For oropharynx swabs, specimen from the posterior pharynx and tonsillar crypts should be collected.

The specimen can be directly inoculated on to culture media such as modified Thayer-Martin medium. Specimens may be held in transport media for a few hours or they may be directly inoculated onto culture media and incubated in the clinic in a CO₂-rich environment. If direct inoculation of culture media is not feasible, specimen swabs are placed in non-nutritive transport medium, such as Cary Blair or Stuarts. The transport media is held at room temperature and sent to the laboratory where the culture media is inoculated and incubated as described above. Gonococci remain viable in the transport medium for up to six hours.

Colonies of *N. gonorrhoea* appear after 24 to 48 hours of incubation. In the laboratory, identification is made by colony morphology, microscopic morphology, and positive oxidase reaction. The identification may be confirmed by carbohydrate utilisation, fluorescent antibody, or agglutination tests. Confirmation of results is needed particularly for specimens taken from the pharynx, or from children or if medicolegal issues are involved (for example, evaluation of sexual assault).
B.2.1.3 DNA PROBE for detection of N. gonorrhoea

This test, manufactured by Gen-Probe as PACEÆ, is based on nucleic acid hybridisation. A chemiluminescently labelled DNA probe targeted to a portion of the 16S ribosomal RNA of N. gonorrhoea is mixed with the patients specimen. Ribosomal RNA released from N. gonorrhoea in the patients specimen hybridises with probe DNA. Non-hybridised probe is removed and the intensity of the luminescence of the DNA:RNA hybrids are measured. Chlamydia can be detected on the same swab using a probe specific for C. trachomatis. Urethral and endocervical swab specimens are acceptable. Always use the swab and the transport medium in the kit provided by the manufacturer. Keep specimens in transport media at 4°C or at room temperature for up to 7 days.

B.2.1.4 Nucleic Acid Amplification Tests (NAAT)

Several types of NAAT are available for the detection of N. gonorrhoea. These include PCR, LCR, strand displacement assay (SDA), hybrid capture assay, and transcription mediated assay (TMA). Key general points regarding these tests are as follows:

- All exhibit equal or slightly greater sensitivities for detection of N. gonorrhoea than that of culture, and all have excellent specificity as well (>99.6%).
- All can be performed on traditional swab specimens collected from the urethra and cervix.
- Most importantly, all can be performed on urine. It is important that first catch urine (FCU) be collected; this consists of the first 10-15 cc of voided urine. Ideally, patients should not have voided for at least one, and preferably two, hours prior to FCU collection. Midstream urine should not be used.
- Specifications for storage, transport, and stability at room temperature vary by specific assay. Users should be familiar with the instructions for the specific tests being used.
- Some tests have been approved for performance on self-collected vaginal swabs, and others are being evaluated for this purpose. Check the manufacturer’s specifications for up-to-date information in this area.
- None of the NAAT are approved for use on rectal or pharyngeal detection of N. gonorrhoea.
B.2.2 Chlamydia trachomatis
B.2.2.1 Specimen Collection
Viable chlamydial organisms are found within urethral, cervical, and rectal epithelial cells, but not in exudates or pus. Thus, a specimen containing purulent discharge is not adequate. The type of swab used for specimen collection is critical to the success of chlamydia cultures, so use only a swab provided or recommended by the laboratory. Do not use wooden shafted swabs. Cytobrushes, used for collection of cervical specimens, appear to result in specimens with a greater number of epithelial cells and, in some studies, more frequent recovery of Chlamydia trachomatis.

B.2.2.2 Specimen Transport
Chlamydia are fragile organisms and do not survive at room temperature or after prolonged (>72 hrs) refrigeration. After placing the swab in the chlamydia transport medium, either refrigerate and deliver to the lab on wet ice within 72 hours, or immediately freeze on dry ice and maintain frozen at -70°C until delivery to the laboratory. A normal freezer temperature of -20°C will not preserve the organisms.

B.2.2.3 Culture Method
In the laboratory, tubes or plates containing living cells (cell culture) are inoculated with the specimen. After 2 to 3 days of incubation, the cells are stained with fluorescein-conjugated monoclonal antibodies, iodine, or Giemsa, and examined microscopically. A positive culture shows cells containing characteristic intracytoplasmic inclusions.

B.2.2.4 Direct Immunofluorescence
Several kits are available for the rapid detection of chlamydial elementary bodies in urethral, cervical, conjunctival, and rectal smears directly stained with specific fluorescein-labelled antibody (FA). Specimen collection techniques are the same as those described in the culture section, except that the specimen swab is smeared onto the glass slide provided by the manufacturer, allowed to dry, fixed in methanol, and sent to the laboratory. The fixed slides are stable and are suitable for mailing. Trained microscopists apply the specific FA reagent and read the slides using a fluorescence microscope. Low sensitivity of the test has been reported in low risk populations when the number of elementary bodies may be very small, but the test is relatively sensitive and quite specific in high-risk populations.
B.2.2.5 Enzyme Immunoassay (EIA)
Advantages of this method include ease of transport and rapid results. Endocervical, urethral, or conjunctival specimens are collected on swabs provided by the manufacturer and are held in the refrigerator (4-8°C) until sent to the laboratory. Collection techniques are the same as those described in the culture section. If urine is to be tested, instruct the patient to collect only 10 to 15 ml from the initial urine stream. Send this sample to the lab. These tests have a relatively good sensitivity and specificity in high-risk populations, but less satisfactory results have been found in low-risk populations.

B.2.2.6 Nucleic Acid Hybridisation Assay
A DNA probe targeted to a portion of the 16S rRNA of C. trachomatis forms the basis of the Gen-Probe PACE® chlamydia diagnostic test. Specimens are collected using a dacron swab and transport tube and medium provided by the manufacturer. The specimen is stable for up to one week at room temperature. For chlamydia, the test has been successfully used for cervical, urethral, and conjunctival specimens. An assay for gonorrhea can be performed on the same specimen.

B.2.2.7 Nucleic Acid Amplification Tests (NAAT)
Several types of NAAT are available for the detection of C. trachomatis. These include PCR, LCR, strand displacement assay (SDA), hybrid capture assay, and TMA. Key general points regarding these tests are as follows:

- All exhibit considerably greater sensitivities for detection of C. trachomatis than that of non-amplified DNA probe (PACE2), EIA, or DFA-based tests, and to a lesser extent, greater sensitivity than that of culture. All have excellent specificity as well (≥99.6%).
- All can be performed on “traditional” swab specimens collected from the urethra and cervix.
- Most importantly, all can be performed on urine. It is important that first catch urine (FCU) be collected; this consists of the first 10-15 cc of voided urine. Ideally, patients should not have voided for at least one and preferably two hours prior to FCU collection. Midstream urine should not be used.
- Specifications for storage, transport, and stability at room temperature vary by specific assay. Users should be familiar with the instructions for the specific tests being used.
Some tests have been approved for performance on self-collected vaginal swabs, and others are being evaluated for this purpose. Check the manufacturers specifications for up-to-date information in this area.

None of the NAAT are approved for use on rectal or pharyngeal detection of C. trachomatis.

### B.2.3 Trichomonas vaginalis

As described in the section on saline microscopy of vaginal fluid, trichomoniasis is usually diagnosed by visualisation of motile trichomonads on saline microscopy of vaginal fluid. This method has an estimated sensitivity of 60% relative to an expanded diagnostic standard that includes culture and PCR. With regard to these specific tests:

- Saline microscopy should be performed immediately on fresh specimens of vaginal fluid to enhance the likelihood of detection. Even with appropriate performance, sensitivity of this test generally does not exceed 60% to 65%.

- Culture for *T. vaginalis* can be performed using various media, the most widely available being the InPouch system which is inoculated with the swab used to collect the specimen. This system can be used to culture the urethra in men and women as well as vaginal fluid.

- PCR is available for *T. vaginalis*, and can be applied to vaginal, urethral, or urine specimens. Antigen detection assays for *T. vaginalis* are under evaluation.

### B.2.4 Candida albicans

Diagnosis can be made with microscopy where a positive result is made by finding budding yeast and/or pseudohyphae; PMNs may or may not be present.

### B.2.5 Bacterial vaginosis

Diagnosis of bacterial vaginosis is made under microscopy and a positive diagnosis is made when in HPF: 0-2+ lactobacillus morphotype; 3-4+ mixed morphotypes (small Gram-negative, positive, and variable rods; Gram-positive cocci; and/or curved Gram-negative rods). The presence on HPF of small amount of lactobacillus morphotype is the key finding. Under wet preparation individual squamous cells rather than clusters of squamous cells should be examined.
C.0 Genital ulcers
Herpes genitalis is the most common genital ulcer disease in Kenya accounting for approximately 80% of all genital ulcers. The next most common is chancroid caused by Haemophilus ducreyi. Chancre caused by Treponema pallidum (syphilis) is the third most common. The other causes of genital ulcers are less common. Candida vaginitis and balanitis, though common, result in mild disease except in patients with concurrent HIV infection.

C.1 Herpes simplex type II

C.1.1 Specimen Collection
The stage of the lesion and the quality of the specimen collected significantly affect the sensitivity of culture results. Sensitivity decreases with increasing lesion age. Thus, herpes simplex virus (HSV) is recovered most frequently from vesicular lesions and infrequently from crusted lesions. Primary lesions are also more likely to yield virus than are recurrent lesions. 

Note: When collecting the specimen, emphasis is on collection of cells from the base of the lesion. Vesicular or pustular lesions should be unroofed with an 18-gauge needle, then the by use of a moistened swab, the base of the lesion should be abraded in order to obtain a good sample of cells. The swab should be immediately placed the in viral transport media. If there are clusters of lesions, the crust should be removed and the base of the lesions the scraped with a moistened swab. Avoid making the lesion bleed. The swab should be immediately placed in viral transport media.

C.1.2 Specimen Transport
Depending on the type of transport medium used, the specimen should either be refrigerated or held at room temperature until transported to the laboratory. If refrigerated, deliver to the lab on wet ice or a coldpack within 72 hours. When delivery to the lab is delayed >72 hours, maintain the specimen on dry ice or at -70°C. (Normal freezer temperature of -20°C will not preserve the virus.)

C.1.2.1 Culture Method
In the laboratory, tubes containing living cells (cell culture) are inoculated with the specimen and incubated. Positive HSV cultures are usually detected between 1 and 7 days. By day 5, about 90% of positive cultures will be detected. The cell cultures are examined microscopically for cytopathic effects characteristic of HSV. Type specific monoclonal antibodies are then used to confirm the identification and to type the isolate as HSV-1 or HSV-2.
C.1.2.2 Direct Immunofluorescence
This method is used to demonstrate viral antigen in a direct smear made from an external genital lesion. Collect cells from the base of the lesion as described in the culture section above, roll the swab on the slide provided by the manufacturer, add fixative, and send to the laboratory. Fluorescein-labelled antibodies (FA) to HSV-1 and HSV-2 are added to the slide, and trained microscopists read the slides using a fluorescence microscope. Mixed infections of both HSV-1 and HSV-2 can be detected by this method. Sensitivity of the test varies with the age of the lesion and the number of cells collected. This test should not be used for detecting viral shedding from the cervix.

C.1.2.3 Serological Tests: Enzyme Immunoassay (EIA)
Glycoprotein G1 and glycoprotein G2-specific EIAs differentiate seronegative and seropositive HSV-1/HSV-2 samples.
Commonly available commercial test due to ease of test performance and relatively low cost . Examples include: Focus Technologies HerpeSelect™–2ELISA which detects type-specific antibodies for HSV-1 and HSV-2 infection and is easy to use, fast and automated; and POCKit which detects antibodies to HSV-2 only and can detect early seroconversion.

C.1.2.4 Western blot
Distinguishes antibody response to HSV-1 and HSV-2 infection and can detect early seroconversion but is not widely available. It has remained largely a research tool.

C.2 Syphilis
C.2.1 Culture
No cultural methods are available.

C.2.2 Darkfield Microscopy
Darkfield microscopy is used to demonstrate Treponema pallidum in material from lesions or lymph nodes. The presence of T. pallidum constitutes a definitive diagnosis of syphilis. Since T. pallidum is identified by characteristic morphology and motility, the preparation must be fresh and the organisms actively motile. Considerable expertise is required not only for the correct identification of the spirochetes but also for proper use of a darkfield microscope. For these reasons, the test should only be performed in a setting where it is routinely done.
C.2.3 Direct Fluorescent Antibody (DFA-TP)
As an alternative to darkfield microscopy, fixed smears from lesions, serous fluid, or lymph node aspirates may be sent to reference laboratories for staining with fluorescein-conjugated antibody to T. pallidum. The results, however, are usually not available for days to weeks and thus, may not be helpful in guiding patient management.

C.2.4 Serological Tests
C.2.4.1 Nontreponemal or Reagin Tests
This group of common nontreponemal tests measure antibody to a nonspecific cardiolipin lecithin antigen. The tests are moderately specific for syphilis (false-positives occur), but highly sensitive. Because they are easily performed, the nontreponemal tests are useful screening tools. The tests can be quantitated to obtain a titer and, thus, are useful in monitoring patient response to therapy.

VDRL: “Venereal Disease Research Laboratory,” the standard test against which other nontreponemal tests are compared.
- RPR card test: “Rapid Plasma Reagin,” a rapid field test performed in STD clinics.
- USR: “Unheated Serum Reagin”, a modification of the VDRL test.

C.2.4.2 Treponemal Tests
These two common treponemal tests measure antibody specific for T. pallidum. They are both highly specific and highly sensitive. Treponemal tests are not currently used for general screening because they are expensive and time consuming to perform. Their use is limited to confirmation of positive reagin tests (to identify false-positive diagnoses) and in the diagnosis of late syphilis when reagin tests may be nonreactive.

- FTA-ABS: “Fluorescent Treponemal Antibody-Absorption”
- MHA-TP: “Micro-hemagglutination–Treponema pallidum”
- TP-PA: “T. pallidum particle agglutination”
C.3 Chancroid

C.3.1 Introduction
Isolation of Haemophilus ducreyi from a genital lesion or lymph node provides a definite diagnosis of chancroid. However, it is difficult to isolate the organism and culture of *H. ducreyi* may not be offered by all laboratories.

Request media from laboratory in advance, so that the specimen can be plated immediately after collection. Gonococcal agar base supplemented with bovine haemoglobin, foetal calf serum and vancomycin is recommended.

C.3.2 Specimen Collection
The lesions should be cleaned thoroughly with sterile nonbacteriostatic saline, then moistened by a cotton-tipped swab with saline and before swabbing the lesion. The swab should be pressed and rolled on the agar plate and immediately delivered to the laboratory.

C.3.2.1 Culture Method
In the laboratory, the plates are incubated in a candle jar lined with damp gauze. Colonies of *H. ducreyi* appear from 2 to 9 days after inoculation.

C.3.2.2 Direct Gram Stain
Gram stain of a lymph node aspirate may be helpful in making the diagnosis of chancroid when tiny, chaining Gram-negative rods are seen. Gram stain of a lesion is generally not recommended because of the frequent polymicrobial nature of these lesions.

C.4 Genital Venereal Warts
In most cases, genital warts are usually due to Human Papilloma Virus infection and can be diagnosed based on visual appearance of the lesions and ruling out other potential causes of such lesions, including syphilis (condyloma lata) or cancerous conditions. Diagnostic tests are not commonly done. Diagnostic tests that may be available include:

- Histological exam of biopsies or excised warts may sometimes be helpful.
- Nucleic acid hybridisation detects viral DNA. Multiple techniques are available, but sensitivity and specificity can be quite variable.
- Amplified DNA Tests (PCR) – good specificity, but detection of HPV in absence of visible disease is of uncertain significance
C.5 Lymphogranuloma Venereum (LGV)

C.5.1 Serological Tests
Serological testing, by microimmunofluorescence (MIF) or the more widely available LGV complement fixation test, is used to establish the diagnosis of LGV. A fourfold rise in titre by complement fixation indicates active infection, while a single titre of 1:64 or greater supported by clinical finding suggests infection. Specific antibody to the LGV immunotypes of Chlamydia trachomatis can be demonstrated by MIF.

C.5.2 Culture
Lymph node aspirate may be sent for chlamydia culture. Isolation of the LGV immunotypes (L1, L2, or L3) is diagnostic.

C.6 Granuloma Inguinale (GI) (Donovanosis)

C.6.1 Smear
A touch prep of a lesion biopsy or tissue smear stained with Giemsa or Wrights stain is used to demonstrate infection with Calymmatobacterium granulomatis. Large mononuclear cells with characteristic intracytoplasmic Donovan bodies are diagnostic.

C.6.2 Swollen Inguinal Glands
Buboes are a complication of the genital ulcer disease. Their aspirates are normally negative for bacterial cultures. Serology for syphilis should always be performed.

D.0 Other Conditions

D.1 Lower Abdominal Pain in Women
Endocervical swabs are taken as for vaginal discharge. *N. gonorrhoea* and *C. trachomatis* should be looked for. These are not the only pathogens involved and negative cultures do not rule out infection higher up.
D.2 Skin Rashes and Pubic Pruritus
In case of suspicious skin rashes, venous blood should be taken for VDRL/RPR test to exclude secondary syphilis.
With pubic pruritus, look for nits on hair shafts, or adult mites burrowed into the skin.

D.3 Eye Discharge in the Newborn
In neonatal eye discharge, the differential diagnosis should be made between gonococcal, Chlamydia and non-gonococcal, nonchlamydial ophthalmia neonatorum.

A specimen of the eye discharge should be collected using a cotton wool or calcium alginate swab. This should then be Gram stained for pus cells and Gram-negative diplococci. Demonstration of Gram-negative intracellular diplococci is diagnostic of gonococcal ophthalmia neonatorum. The presence of pus cells and absence of Gram-negative diplococci is suggestive of non-gonococcal ophthalmia neonatorum and the neonate should be treated for Chlamydia ophthalmia neonatorum.

Where facilities exist, inoculate immediately on to modified Thayer-Martin medium for \textit{N. gonorrhoea} or on to transport medium. Where appropriate, inoculate on Chlamydia culture medium or on to transport medium for immediate transport.
However, treatment should be provided immediately even while awaiting laboratory results.

D.4 AIDS and HIV Infection
The laboratory diagnosis of HIV/AIDS is done through the examination of a blood sample. Venous blood is collected into a plain bottle. Screening is done by rapid HIV tests or by Enzyme Linked ImmunoSorbent Assay according to the national guidelines.
Testing should follow the guidelines established by the National AIDS Control Council (NACC) and results treated as such. Amongst others, testing should only be done if there is a strong clinical indication for HIV infection, and it must be accompanied with pre- and post-test counselling.