

Integrating STI/RTI Care for Reproductive Health

Sexually Transmitted and Other Reproductive Tract Infections

A guide to essential practice



World Health Organization



Reproductive Health and Research

WHO Library Cataloguing-in-Publication Data

Sexually transmitted and other reproductive tract infections.

1. Sexually transmitted diseases 2. HIV infections 3. Genital diseases, Female
4. Genital diseases, Male 5. Infection 6. Pregnancy complications, Infectious
7. Rape 8. Practice guidelines 9. Developing countries I. World Health
Organization.

ISBN 92 4 159265 6

(NLM classification: WC 140)

© World Health Organization 2005

All rights reserved. Publications of the World Health Organization can be obtained from Marketing and Dissemination, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel: +41 22 791 2476; fax: +41 22 791 4857; email: bookorders@who.int). Requests for permission to reproduce or translate WHO publications – whether for sale or for noncommercial distribution – should be addressed to Marketing and Dissemination, at the above address (fax: +41 22 791 4806; email: permissions@who.int).

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Printed in

ACKNOWLEDGEMENTS

This practice guide is a collaborative effort of WHO's Department of Reproductive Health and Research, Family Health International (FHI) and The Population Council's FRONTIERS in Reproductive Health Program. It is based on the work of a large group of experts, who participated in consultations or reviews. WHO would like to thank the members of the technical review panel: Dinesh Agarwal, Kamal Alami, Adele Benzaken, Lalit Kumar Bhutani, Ward Cates, Anupong Chitwarakorn, Patricia Claeys, Gina Dallabetta, Patricia J. Garcia, David Grimes, Sarah Hawkes, Marie Laga, Gunta Lazdane, Philippe Mayaud, Andre Meheus, Linda Morison, Charles Morrison, Telma Queiroz, Laima Rudze, Moshira El-Shafei, Guida Silva, Jim Shelton, Marleen Temmerman, Johannes van Dam, Eddy van Dyck, Teodora Elvira Wi, and Guang Zeng.

Richard Steen (external consultant), Nathalie Broutet (WHO), and Irina Yacobson (FHI) constituted the core writing team and were leaders of the technical panel.

Ian Askew (Frontiers/Population Council), Nathalie Broutet (WHO), Florence Carayon (FHI), Saiqa Mullick (Frontiers/Population Council), and Robert Rice (FHI) coordinated the writing of the Guide.



WHO gratefully acknowledges the contributions of the many reviewers who assisted in field-testing the guide in Brazil, China, Jamaica, Kenya, and Latvia.

This publication was funded through Contraceptive Technology Research Agreement 96-05 CCP-A-00-95-00022-02 to Family Health International (FHI) and the FRONTIERS in Reproductive Health Cooperative Agreement HRN-A-0098-00012-00 to the Population Council from the US Agency for International Development (USAID). The contents do not necessarily reflect FHI, the Population Council or USAID views and policy.

CONTENTS

Abbreviations And Acronyms Used In This Guide	1
Preface	3
About the Guide.....	4
Terminology.....	5
Structure of the Guide.....	5
20 Steps to fewer STIs/RTIs.....	6
SECTION 1. STI/RTI BASICS	9
Chapter 1. Infections of the Male and Female Reproductive Tract and their Consequences.....	11
What are RTIs?	12
Why STIs/RTIs are important	14
What can be done about RTIs?.....	18
The role of clinical services in reducing the burden of STI/RTI.....	20
Chapter 2. Preventing STIs/RTIs and their Complications	23
How to prevent STI	24
How to prevent iatrogenic infections	29
How to prevent endogenous infections.....	32
Chapter 3. Detecting STI/RTI.....	33
Syphilis	37
Vaginal infections	39
Cervical infections.....	40
Pelvic inflammatory disease.....	42
Cervical cancer screening.....	42
HIV counselling and testing.....	43
Chapter 4. STI/RTI Education and Counselling	45
Privacy and confidentiality.....	47
General skills for STI/RTI education and counselling.....	47
Health education	48
Counselling.....	51

SECTION 2. IMPROVING SERVICES FOR PREVENTION AND TREATMENT OF STI/RTI.....	57
Chapter 5. Promoting Prevention of STI/RTI and Use of Services.....	59
Reducing barriers to use of services.....	60
Raising awareness and promoting services.....	61
Reaching groups that do not typically use reproductive health services....	62
Chapter 6. STI/RTI Assessment during Routine Family Planning Visits	67
Integrating STI/RTI assessment into routine FP visits	68
Family planning methods and STIs/RTIs	76
Chapter 7. STI/RTI Assessment in Pregnancy, Childbirth and the Postpartum Period.....	81
SECTION 3. MANAGEMENT OF STIs/RTIs	95
Chapter 8. Management of Symptomatic STIs/RTIs.....	97
Syndromic management of STI/RTI.....	98
Management of common syndromes	99
STI case management and prevention of new infections	120
Chapter 9. STI/RTI Complications related to Pregnancy, Miscarriage, Induced Abortion, and the Postpartum Period	127
Infection in early pregnancy.....	128
Infection in late pregnancy	131
Infection following childbirth	133
Vaginal discharge in pregnancy and the postpartum period.....	136
Chapter 10. Sexual violence	139
Medical and other care for survivors of sexual assault.....	141

Annex 1. Clinical Skills Needed for STI/RTI Management	153
History-taking	153
Common STI/RTI symptoms	154
Examining patients	155
Annex 2. Disinfection and Universal Precautions	161
Preventing infection in clinical settings	161
High-level disinfection: three steps	162
Universal precautions	163
Annex 3. Laboratory Tests for RTI	165
Interpreting syphilis test results	166
Clinical criteria for bacterial vaginosis (BV)	167
Wet mount microscopy	168
Gram stain microscopy of vaginal smears	168
Use of Gram stain for diagnosis of cervical infection	169
Annex 4. Medications	171
Medications in pregnancy	171
Antibiotic treatment for gonorrhoea	174
Annex 5. STI/RTI Reference Table	175
Annex 6. Additional Resources and Suggested Reading	179
Glossary	181

ABBREVIATIONS AND ACRONYMS USED IN THIS GUIDE

AIDS	acquired immunodeficiency syndrome
BV	bacterial vaginosis
CA	candidiasis, yeast infection
CO ₂	carbon dioxide
CRP	C-reactive protein
EC	emergency contraception
ELISA	enzyme-linked immunosorbent assay
Endo	endogenous
FP	family planning
FTA-Abs	fluorescent <i>Treponema</i> antibody absorption test
GUD	genital ulcer disease
HBV	hepatitis B virus
HIV	human immunodeficiency virus
HPV	human papilloma virus
HSV	herpes simplex virus
Iatro	iatrogenic
IM	intramuscular
IU	international units
IUD	intrauterine device
IV	intravenous
LGV	lymphogranuloma venereum
MCH	maternal and child health
MHA-TP	microhaemagglutination assay for antibodies to <i>Treponema pallidum</i>
MTCT	mother-to-child transmission
MVA	manual vacuum aspiration
PCR	polymerase chain reaction
PEP	postexposure prophylaxis
PID	pelvic inflammatory disease
ROM	rupture of membranes
RPR	rapid plasma reagin
RTI	reproductive tract infection(s)
STI	sexually transmitted infection(s)

TPHA	<i>Treponema pallidum</i> haemagglutination test
TV	<i>Trichomonas vaginalis</i>
UTI	urinary tract infection
VCT	voluntary counselling and testing
VDRL	venereal disease research laboratory
WBC	white blood cells
WHO	World Health Organization

PREFACE

This publication is intended to assist health care managers and practitioners in resource-limited reproductive health care settings around the world to meet the needs of individuals who may be at risk of reproductive tract infections (RTIs).

It is assumed that readers are familiar with certain clinical knowledge, such as drugs and their dosages, although they may not have experience with management of sexually transmitted infections (STIs) and RTIs.

The publication reflects the involvement of a large number of international experts who reviewed and debated aspects of the document to ensure that recommendations are based on the best available evidence as well as on what are considered favourable public health outcomes. Additionally, in order to validate the usefulness of the recommendations for reproductive health care settings around the world, the manual was thoroughly reviewed by practitioners and programme managers in a number of countries, prior to publication. Finally, this Guide has been pre-field tested in five countries: Brazil, China, Kenya, Jamaica and Latvia.

A companion publication to this Guide is available, entitled: *Guidelines for the management of sexually transmitted infections*. This publication presents the revised recommendations, both for a syndromic approach to the management of patients with STI symptoms and for the treatment of specific STIs, based on evidence and epidemiological surveillance data from around the world. It also provides information on the notification and management of sexual partners and on STIs in children and adolescents.

Another companion publication, *Sexually transmitted and other reproductive tract infections: a pocket guide for essential practice* is under development. This publication will contain a summary of essential information for ease of reference to management flowcharts, treatment tables, counselling points, and other information in a convenient-to-carry format. The pocket guide is intended to serve as a working tool for use by providers in their everyday interactions with their clients.

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.

Human immunodeficiency virus (HIV) infection is not covered extensively in this document, but references to HIV are made where necessary. This is because, while HIV is technically an STI, it is not a reproductive tract infection. Hepatitis B and C are other examples of STIs that are not RTIs, and are not covered in this Guide. For further information on HIV infection, see Annex 5 (Additional resources and suggested reading) and visit the WHO HIV/AIDS web site at <http://www.who.int/HIV>.

This Guide is intended to be 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 preservice 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 RTIs.

Programme managers can use it as a starting-point for improving policies, programmes and training on the prevention and management of STI/RTI, adapting the information and recommendations as needed to local conditions¹.

The information is grouped according to “reasons for visit”. Providers are encouraged to consider the possibility of STI/RTI, educate and counsel clients about prevention, and offer necessary treatment. Providers can use the Guide as a whole, or focus on the sections that are relevant to their daily practice.

¹ An adaptation guide for programme managers is currently under preparation by WHO.

TERMINOLOGY

Not all sexually transmitted infections are reproductive tract infections; and not all reproductive tract infections are sexually transmitted; STI refers to the way of transmission whereas RTI refers to the site where the infections develop.

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. Conversely, because STIs in most cases have much more severe health consequences than other RTIs, the term STI/RTI is used throughout the Guide to highlight the importance of STIs within reproductive tract infections. When information provided in the document is relevant to sexually transmitted infections only, the term STI is used alone.

STRUCTURE OF THE GUIDE

The Guide is divided into three sections:

- **Section 1** provides background information on the burden of STIs/RTIs and their complications, how they spread and how they can be managed. It includes background public health information for the specific prevention and care issues that are covered in Sections 2 and 3, and reviews the basic skills and knowledge that health care providers should have in order to detect and prevent STI/RTI.
- **Section 2** describes how to approach STI/RTI 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. It also looks at some issues of importance for men and adolescents who do not typically use reproductive health services.
- **Section 3** deals with management of STI/RTI—how to diagnose and treat STI/RTI-related problems—using a problem-oriented approach that permits rapid access to information. Specific problems that may be discovered during reproductive health care visits are considered here.

Each chapter begins with a summary of the information and recommendations it contains. Throughout the Guide, important **steps in decision-making** are explained in the text, and most recommendations are also presented in **flowcharts** and **tables**. Flowcharts can help to simplify complex problems and permit a standardized approach to management of STIs/RTIs. However, **no flowchart can cover all possible clinical situations**. Health care providers need to be able to recognize 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.

20 STEPS TO FEWER STIs/RTIs

Step 1	Raise awareness about STIs/RTIs and their consequences—infertility, pregnancy loss, maternal death and HIV/AIDS.
Step 2	Prepare your clinic so that people feel comfortable coming to the clinic with STI/RTI concerns.
Step 3	Promote services. Find ways to involve men in STI prevention and make sure that young people know about services and are comfortable using them. Reach vulnerable populations as one of the best ways to control STI transmission in the community.
Step 4	Provide condoms, promote use of condoms and counsel about reducing number of partners or delaying sexual activity to reduce STI risk.
Step 5	Perform transcervical procedures safely to prevent iatrogenic infection.
Step 6	Tell women about simple things they can do to prevent endogenous infections.
Step 7	Consider patient’s individual risk for STI/RTI in order to offer prevention advice or treatment.
Step 8	Counsel about STI/RTI prevention and ask about STI/RTI symptoms at each visit for family planning or antenatal care. Look for signs of STI/RTI each time you do an examination for other reasons.
Step 9	Screen for syphilis, and look at opportunities to screen for other STIs/RTIs.
Step 10	Take care not to label people as having an STI when the diagnosis is not certain.
Step 11	Educate all patients about STI/RTI prevention.
Step 12	Educate patients with STI/RTI about completing their full course of treatment and referring partners for treatment.
Step 13	Learn to counsel to support patients in changing behaviour.
Step 14	Promote dual protection to prevent both STI/RTI and pregnancy.
Step 15	Encourage early attendance at antenatal clinic. Counsel about STI/RTI prevention for a safer pregnancy.
Step 16	Screen all pregnant women for syphilis at least once during each pregnancy and make sure women with reactive tests (and their partners) are treated.

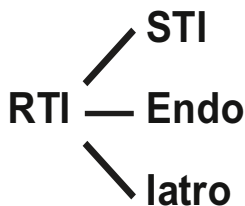
Step 17	To women who have been raped, offer emergency contraception, presumptive STI treatment, and, if available, HIV postexposure prophylaxis.
Step 18	Manage symptomatic STIs/RTIs effectively using syndromic flowcharts, or where available, laboratory-based diagnosis.
Step 19	Treat partners when an RTI is likely to be sexually transmitted but counsel the patient and partner carefully when you are not sure.
Step 20	Treat upper genital tract infections—especially infections following abortion or childbirth—aggressively to protect the woman’s life and fertility.

SECTION 1 STI/RTI BASICS

Section 1 presents basic information on STIs/RTIs and their complications, how they spread and what can be done about them. It also reviews the knowledge and skills that health care providers should have in order to detect and prevent STI/RTI.

Section 2 provides advice on addressing STI/RTI through the reproductive health clinic. It also looks at ways of reaching men, adolescents and others who do not typically use reproductive health services.

Section 3 deals with STI/RTI management—how to diagnose and treat STI/RTI-related problems—and includes flowcharts and treatment tables. This section is organized using a problem-oriented approach to permit rapid access to information.



CHAPTER 1. INFECTIONS OF THE MALE AND FEMALE REPRODUCTIVE TRACT AND THEIR CONSEQUENCES

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.
- Over 340 million curable, and many more incurable, STIs occur each year. Among women, non-sexually-transmitted RTIs are usually even more common.
- STIs/RTIs are among the most important **causes of maternal and perinatal morbidity and mortality**. Serious complications of STIs/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 thus further reduce disease transmission within the community.

WHAT ARE RTIs?

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 RTI (yeast infection, bacterial vaginosis). Medical interventions may provoke *iatrogenic* infection in several ways—endogenous organisms from the vagina or sexually transmitted organisms in the cervix may be pushed 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.

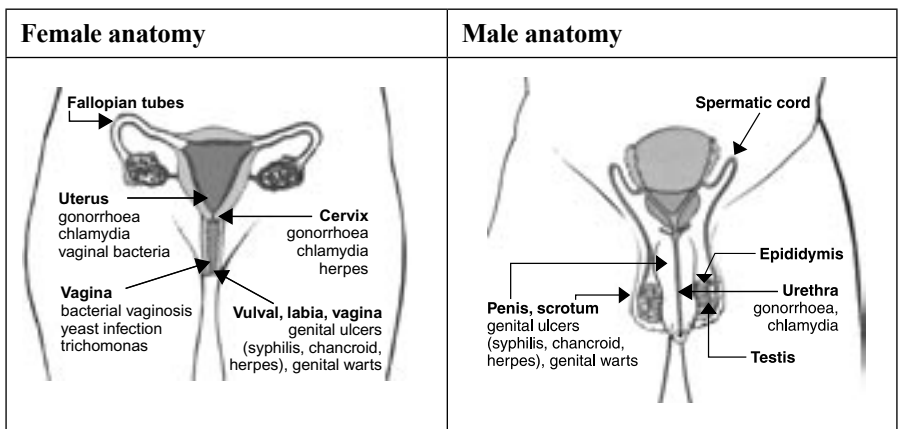
These different categories of infections are included together in this Guide for several reasons:

- Prevention of STIs/RTIs and their complications requires 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 minimize stigma. Health care providers should recognize that labelling a condition as sexually transmitted may be inaccurate and have serious social consequences for the couple.

Table 1.1. Types of STI/RTI

	Where they come from	How they spread	Common examples
Endogenous infections	Organisms normally found in vagina	Usually not spread from person to person, but overgrowth can lead to symptoms	Yeast infection, bacterial vaginosis
Sexually transmitted infections	Sexual partners with STI	Sexual contact with infected partner	Gonorrhoea, chlamydia, syphilis, chancroid, trichomoniasis, genital herpes, genital warts, HIV
Iatrogenic infections	Inside or outside the body: <ul style="list-style-type: none"> ▪ Endogenous (vagina) ▪ STI (cervix or vagina) ▪ Contamination from outside 	By medical procedures or following examination or intervention during pregnancy, childbirth, the postpartum period or in family planning (e.g., IUD insertion) and gynaecology settings. Infection may be pushed through the cervix into the upper genital tract and cause serious infection of the uterus, fallopian tubes and other pelvic organs. Contaminated needles or other instruments, e.g. uterine sounds, may transmit infection if infection control is poor.	Pelvic inflammatory disease (PID) following abortion or other transcervical procedure. Also, many infectious complications of pregnancy and postpartum period.

Figure 1.1. Sites of infection



WHY STIs/RTIs ARE IMPORTANT

STIS/RTIS ARE COMMON

STIs/RTIs cause a large proportion of the global burden of ill-health. 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.

Box 1.1. Where STIs/RTIs occur

STIs/RTIs are found worldwide but are more common in some areas. 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, 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 postabortion 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.

DIFFERENCES BETWEEN STIs/RTIs ARE IMPORTANT

Table 1.2 lists some common syndromes caused by infections that primarily affect the reproductive tract. Some are sexually transmitted, others 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 1.2. Common STI/RTI syndromes

Syndrome	STI/RTI	Organism	Type	Sexually transmitted	Curable
Genital ulcer	Syphilis	<i>Treponema pallidum</i>	bacterial	yes	yes
	Chancroid	<i>Haemophilus ducreyi</i>	bacterial	yes	yes
	Herpes	Herpes simplex virus (HSV-2)	viral	yes	no
	Granuloma inguinale (donovanosis)	<i>Klebsiella granulomatis</i>	bacterial	yes	yes
	Lymphogranuloma venereum	<i>Chlamydia trachomatis</i>	bacterial	yes	yes
Discharge	Bacterial vaginosis	multiple	bacterial	no	yes
	Yeast infection	<i>Candida albicans</i>	fungus	no	yes
	Gonorrhoea	<i>Neisseria gonorrhoeae</i>	bacterial	yes	yes
	Chlamydia	<i>Chlamydia trachomatis</i>	bacterial	yes	yes
	Trichomoniasis	<i>Trichomonas vaginalis</i>	protozoal	yes	yes
Other	Genital warts	Human papilloma virus (HPV)	virus	yes	no

STIs/RTIs CAUSE SERIOUS HEALTH PROBLEMS

The consequences of STIs/RTIs for 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 also increase the risk of HIV transmission (see Annex 5 for a more complete list of RTI complications).

Most STIs/RTIs can affect both men and women, although the consequences for women are more common and more severe than for men (Box 1.2). 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

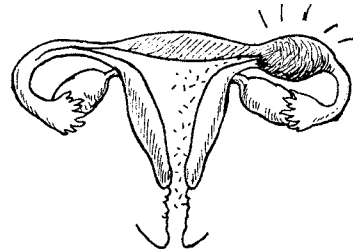
(postabortion and postpartum infections) alone are estimated to cause about one-third of the 500 000 maternal deaths that occur each year. Most of this preventable burden of disease is concentrated in low-income populations (Table 1.3).

STIs/RTIs also cause poor pregnancy outcomes. Infection within the placenta or amniotic sac (chorioamnionitis) 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.

Box 1.2. Complications of upper genital tract infection in women

1. **Pelvic inflammatory disease.** 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 generalized and life-threatening, and resulting tissue damage and scarring may cause infertility, chronic pelvic pain and increased risk of ectopic pregnancy.

2. 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.



3. **Infertility** often follows untreated pelvic inflammatory disease in women, and epididymitis and urethral scarring in men. In fact, complications of RTI are the most important preventable causes of **infertility** in regions where childlessness is most common. Repeated spontaneous abortion and stillbirth—often due to RTI such as syphilis—are other important reasons why couples are unable to have children.

4. The tubal scarring and blockage that often follow PID may be total or partial. Fertilization 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.

Table 1.3. Risks and burden of upper genital tract infection and complications

Disease or complication	Risk	Situation in low-resource communities
Cervical infection	Gonorrhoea or chlamydia in the cervix can ascend to the upper genital tract. Transcervical procedures increase risk of ascending infection.	Gonorrhoea and chlamydial infection may be 10 to 100 times more common in low-income communities than high-income communities.
PID	Estimated 8–10% of chlamydia and 8–20% of gonorrhoea infections progress to PID.	Estimated gynaecology admissions related to pelvic infection: 17–40% in Africa; 15–37% in South-East Asia.
Postabortion infection	Estimated 10–23% of women with chlamydia and 15% with gonorrhoea develop upper genital tract infection after unsafe abortion.	Accounts for 7–29% of maternal deaths in developing regions when abortion is performed unsafely.
Postpartum infection	Rare with normal delivery if nothing introduced into vagina during labour.	Infection following vaginal delivery up to 10 times more common in developing countries; accounts for up to 30% of maternal deaths.
Infertility	Risk of infertility 15–25% after one episode of PID, 50–60% after third episode. Rates higher where antibiotic treatment is not available.	Most infertility related to infection.
Ectopic pregnancy	6–10 times greater risk in women who have had PID.	Up to 32 ectopic pregnancies per 1000 live births in Africa.

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 death in women. **AIDS** is a consequence of **HIV infection**. HIV is much more easily transmitted and acquired sexually when other STIs/RTIs are present (Box 1.3). Many regions with high HIV prevalence also have high rates of curable STI/RTI.

Box 1.3. STIs/RTIs and sexually transmitted HIV

HIV is transmitted in the same way as other STIs; prevention of STIs also prevents sexual transmission of HIV infection

Effective treatment of STIs decreases the amount of HIV in genital secretions and makes HIV transmission less likely

Many STIs/RTIs increase the risk of acquiring HIV infection as well as the chances of transmitting it to others—by as much as 50–300 times per contact when a genital ulcer is present, for example. HIV transmission is more likely when STIs/RTIs are present for several reasons:

- HIV can easily pass through breaks in the skin or mucous membranes caused by genital ulcers.
- HIV can attach to the many white blood cells that are present in genital discharges.
- Large amounts of HIV are found in ulcers and genital fluid (semen, cervical secretions) of people with certain STIs.

WHAT CAN BE DONE ABOUT 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 STI/RTI and STI/RTI complications than communities where services are poor, disrupted or not used by people at risk. Reducing the burden of STI/RTI 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. Box 1.4 lists some important barriers to controlling STIs/RTIs at the community level, and what can be done about them.

Box 1.4. Some barriers to STI/RTI control at the community level

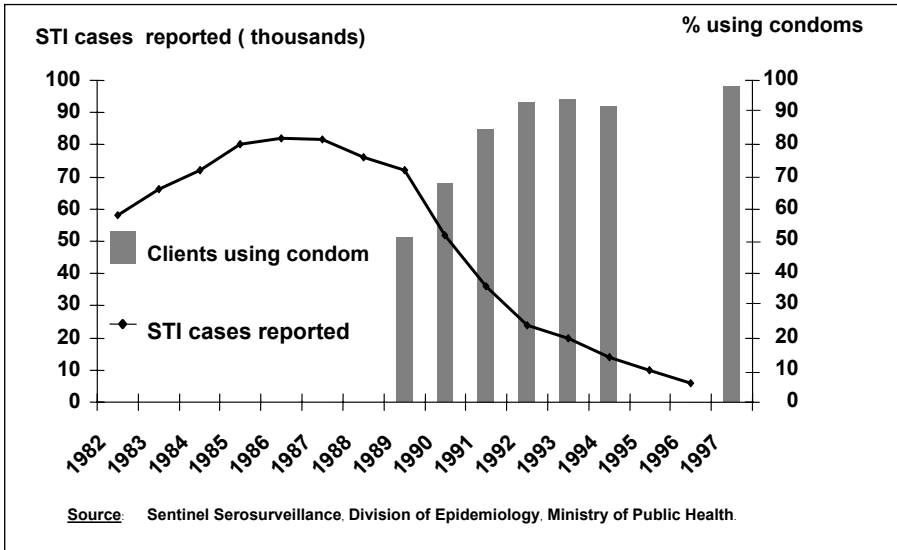
What is the problem?	What can be done?
Poverty and labour migration separate families and lead to risky sexual behaviour.	Economic and social policies that reduce family separation may reduce risk and vulnerability.
Low status of women limits economic options and leads to risky sexual behaviour. Women may exchange sex for money or other forms of support. Low status also means little control over decisions and less ability to negotiate with partners.	Educational and employment opportunities for girls reduce the economic pull of sex work, empower women and reduce STI risk.
Poor health care services have little to offer for prevention and care of STI/RTI.	Improved health care services mean better prevention and care.
People do not have easy access to health care facilities.	Reducing barriers such as cost, distance, limited clinic hours and long waiting times means better access to care.
People do not use health care facilities (poor health-care-seeking behaviour).	Better awareness of STI/RTI symptoms and complications, and promotion of improved health care services will convince more people to use services.

Some countries have greatly reduced the prevalence and transmission of common STIs/RTIs by addressing such social and structural factors. Thailand recently reduced the incidence of the most common STIs by over 90% by promoting increased condom use and improving STI treatment among commercial sex workers (Box 1.5). Maternal morbidity due to complications of childbirth and abortion has declined dramatically in countries where safe services are available. High rates of preventable reproductive morbidity and mortality in other countries make prevention and control of these infections a public health priority.

Box 1.5. Effective STI control and HIV prevention in Thailand

In response to a rapidly growing HIV epidemic in the late 1980s, Thailand took steps to reduce sexual transmission of HIV and other STIs. Condom use was strongly promoted, particularly in commercial sex networks, and STI diagnosis and treatment were strengthened. Within five years, condom use reported by sex workers had risen from 14% to 94% and STI rates were declining (see Figure 1.2). During this period, HIV prevalence declined in both high-risk groups and pregnant women (not shown). Strong government commitment and the use of targeted strategies to reach the populations where most STI transmission was taking place were important elements of Thailand's success.

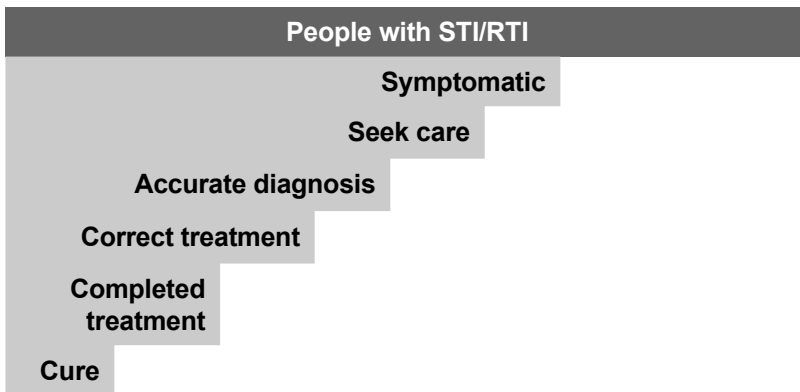
Figure 1.2. Clients using condoms and reported STI cases—Thailand



THE ROLE OF CLINICAL SERVICES IN REDUCING THE BURDEN OF STI/RTI

There are a number of challenges to providing effective STI/RTI services to the people who need them (Figure 1.3). Many people with an STI/RTI do not seek treatment because they are asymptomatic or have mild symptoms and do not realize that anything is wrong. Others who have symptoms may prefer to treat themselves or seek treatment at pharmacies or from traditional healers. Even those who come to a clinic may not be properly diagnosed and treated. In the end, only a small proportion of people with an STI/RTI may be cured and avoid reinfection; this Guide aims to help increase that proportion.

Figure 1.3. Challenges of STI/RTI service provision

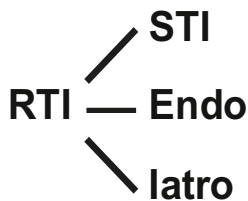


Many of these challenges can be addressed by making the most of opportunities to promote prevention, improve health-seeking behaviour, and detect and manage existing infections. Health care providers should:

- **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 recognize 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 STI/RTI when patients attend for family planning or other reasons. Look for signs of STI/RTI when doing examinations. Screen for asymptomatic infection when possible.
- **Prevent iatrogenic infection** by following universal precautions, using aseptic technique, and ruling out or treating cervical infection before performing transcervical procedures.
- **Manage symptomatic STI/RTI** 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.

STI/RTI services should never be seen as an optional component of reproductive health services. The 1994 International Conference on Population and Development, held in Cairo, Egypt, emphasized that provision of clinical services to reduce STIs in family planning services was essential for ensuring a healthy reproductive future. Clearly, there is an opportunity to reach many women whose only contact with the health care system is reproductive health services. Most of these women are sexually active, many are at risk of infection and some have an existing infection.

A combined strategy of effective community interventions and improved clinical services can have a large impact on STIs/RTIs and their complications. Better 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.



CHAPTER 2. PREVENTING STIs/RTIs AND THEIR COMPLICATIONS

Key points

- A comprehensive approach to STIs/RTIs includes prevention of sexually transmitted, iatrogenic and endogenous infections.
- 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**.
- 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 may be reduced by giving a **full course of antibiotic treatment for cervical infection**, if such an infection cannot be reliably ruled out.

As described in Chapter 1, STIs/RTIs 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., IUD) 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.

For maximum impact on STIs/RTIs and their complications, each of these areas needs to be addressed.

HOW TO PREVENT STI

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

- delaying sexual activity (for adolescents);
- decreasing the number of sex partners;
- using condoms correctly and consistently.

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.

DELAYING SEXUAL ACTIVITY

Adolescents can avoid STI 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. Adolescents should know that they can get support and confidential information on methods—including condom use—for preventing pregnancy and STI when they decide to become sexually active.

DECREASING THE NUMBER OF SEX PARTNERS

Limiting the number of sex partners can help reduce exposure to STI. 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, 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 STI (although other RTIs are still possible).

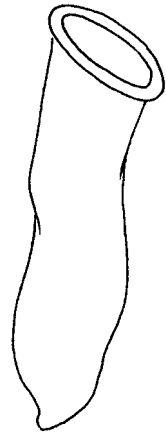
Many people need strategies other than monogamy or abstinence at some point in their lives. Monogamous relationships do not provide protection from STI when they follow one another in rapid succession (“serial monogamy”). Couples who are separated from each other for periods of time may also require other strategies. Men and women whose jobs involve travel—migrant workers, vendors, truck drivers, 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 STI.

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 STI. Used correctly, they form a barrier that keeps out even the smallest bacteria and viruses.

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. To use a condom correctly:

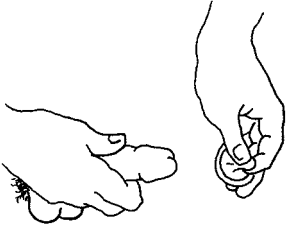
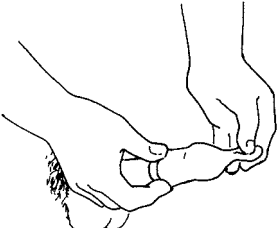

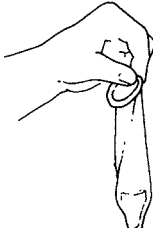
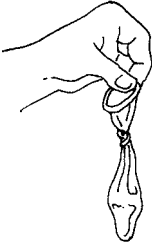
- Put on the condom before any penetrative intercourse (see Figure 2.1).
- Withdraw the penis right after ejaculation (while the penis is still erect) to avoid the condom slipping off inside the vagina.
- Put on a new condom for each new act of intercourse.



STI can still occur despite condom use, however. Genital ulcers or warts can be transmitted through contact with parts of the body not covered by the condom. More commonly, though, 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 STI 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.** Chapter 4 includes advice on counselling patients on how to negotiate condom use with partners.

Figure 2.1. Instructions for use of a male condom

	
<p>1. Remove the condom from the package carefully, to avoid tearing.</p>	<p>2. Squeeze the air out of the tip of the condom.</p>
	
<p>3. Unroll the condom onto the erect penis.</p>	<p>4. After ejaculation, withdraw the penis from the vagina while the penis is still erect. Hold on to the rim of the condom while withdrawing to prevent it from slipping off and the semen spilling into the vagina.</p>
	
<p>5. Remove condom from penis, and tie a knot in it to prevent spills or leaks. Dispose of condom safely (where it cannot cause any hazard).</p>	

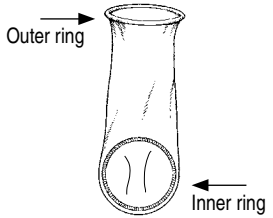
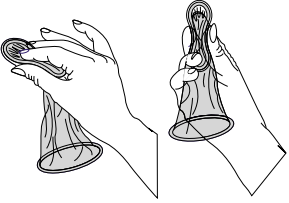
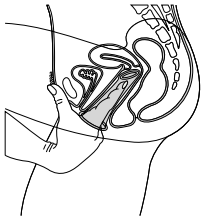

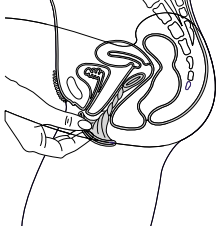
Female condoms (Figure 2.2) are becoming more widely available and have the advantage for women that their use is more in their control than use of male condoms. One type of female condom is currently on the market, under various names. It is made of polyurethane plastic, which is sturdier than latex. 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 prelubricated, 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. Also, it cannot be used at the same time as the male condom, which means it cannot provide back-up 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 STI 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, however.

Figure 2.2. Instructions for use of a female condom

<p>The female condom is a soft, loose-fitting sheath with a flexible polyurethane ring at each end. The inner ring at the closed end is inserted into the vagina. The outer ring at the open end remains outside the vagina during intercourse and covers outer genitalia.</p>		
	<p>1. Remove the female condom from the package, and rub it between two fingers to be sure the lubricant is evenly spread inside the sheath. If you need more lubrication, squeeze two drops of the extra lubricant included in the package into the condom sheath.</p>	<p>2. The closed end of the female condom will go inside your vagina. Squeeze the inner ring (closed end) between your thumb and middle finger. Insert the ring into your vagina.</p>
 <p>3. Using your index finger, push the sheath all the way into your vagina as far as it will go. It is in the right place when you cannot feel it.</p> <p>Do not worry, it cannot go too far.</p>	 <p>4. The ring at the open end of the female condom should stay outside your vagina and rest against your labia (the outer lip of the vagina). Be sure the condom is not twisted. Once you begin to engage in intercourse, you may have to guide the penis into the female condom. If you do not, be aware that the penis could enter the vagina outside of the condom's sheath. If this happens, you will not be protected.</p>	 <p>5. After intercourse you can safely remove the female condom at any time. If you are lying down, remove the condom before you stand to avoid spillage. Before removing condom from vagina, make sure you twist it to prevent semen from spilling.</p> <p>Dispose of the female condom safely (where it cannot cause any hazard). Do not reuse it.</p>

HOW TO PREVENT IATROGENIC INFECTIONS

As discussed in Chapter 1, 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 (Table 2.1). This involves:

- STI prevention and management (Chapter 2 and Chapter 8);
- good antenatal care and safe delivery practices (Chapter 7 and Chapter 9);
- safe performance of transcervical procedures (Chapter 2);
- good postabortion care and management of complications (Chapter 9).

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 gonorrhoea 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.

Table 2.1. Preventing upper genital tract infection, infertility and ectopic pregnancy

Intervention	Methods to prevent infections and complications
STI prevention	Counsel on: <ul style="list-style-type: none"> ▪ delaying sexual activity ▪ reducing numbers of partners ▪ using condoms correctly and consistently
STI management	Early detection and treatment of STI
Safe delivery practices	Use aseptic technique Manage postpartum infection effectively
Safe transcervical procedures	Use aseptic technique Rule out infection prior to procedure
Postabortion care	Use aseptic technique Manage postabortion infection effectively

SAFE PERFORMANCE OF TRANSCERVICAL PROCEDURES

Infection can reach the uterus through medical procedures that pass instruments through the cervix (transcervical procedures). Manual vacuum aspiration, dilatation and curettage, insertion of an intrauterine device (IUD) 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 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. gonorrhoeae* or *C. trachomatis* in their cervix are at increased risk of upper genital tract infection after a transcervical procedure compared with uninfected women.

Upper genital tract infection following transcervical procedures can be reduced by:

- using appropriate infection prevention procedures and aseptic techniques, and
- treating any existing cervical infection.

REDUCING RISK OF INFECTION

Clinical practices

Appropriate infection prevention procedures and aseptic techniques (Box 2.1) provide protection against transmission of infection.

Box 2.1. Infection prevention techniques for transcervical procedures

- Wash hands.
- Wear gloves, both for the procedure and when handling contaminated waste materials or used instruments.
- Decontaminate, clean and high-level disinfect all instruments (e.g. specula, tenacula, forceps, and uterine sound). High-level disinfection can be done by boiling instruments for 20 minutes in a container with a lid.
- Clean the cervix and vagina with antiseptic solution.
- Use “no touch” technique. This means avoiding contamination of the uterine sound or other instruments by inadvertently touching the vaginal wall or speculum blades.

See Annex 2 for details of disinfection and universal precautions.

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 (see Chapter 3 and Annex 1). 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 (see Table 2.2).

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 IUD insertion though, antibiotic prophylaxis provides minimal benefit and hence is not recommended.

Note: Laboratory tests to screen for STIs contribute substantially to safe and effective use of IUDs, but implementation should be considered within the public health and service context. The risk of not performing the tests should be balanced against the benefits of making the contraceptive method available.

Table 2.2. Recommended antibiotic treatment for gonorrhoea and chlamydia infection

Coverage	First choice ^a Choose one from each of the two boxes below (2 drugs)	Effective substitutes ^c
Gonorrhoea	cefixime 400 mg orally as a single dose, or ceftriaxone 125–250 mg by intramuscular injection	ciprofloxacin ^c 500 mg orally as a single dose, or spectinomycin 2 g by intramuscular injection
	See Treatment table 2 in Chapter 8 for additional treatments that can be substituted for gonorrhoea.	
Chlamydia	doxycycline 100 mg orally twice a day for 7 days, or azithromycin ^b 1 g orally as a single dose	ofloxacin ^c 300 mg orally twice a day for 7 days, or tetracycline 500 mg orally 4 times a day for 7 days

- a. Single dose regimens where available are preferable to multidose treatments since they avoid potential problems of noncompliance.
- b. Azithromycin 1 g alone is a single-dose treatment that cures more than 90% of cervical infections due to gonorrhoea or chlamydia. Addition of a second drug for gonorrhoea increases the cure rate to almost 100%.
- c. The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.

HOW TO PREVENT ENDOGENOUS INFECTIONS

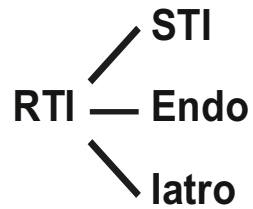
Yeast infection and bacterial vaginosis are common endogenous infections that can be easily treated (Chapter 8) but often recur. Health care providers should be aware that:

- 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.

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

- 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. Cleaning the external genital area with soap and water is sufficient for hygiene.
- 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.



CHAPTER 3. DETECTING STI/RTI

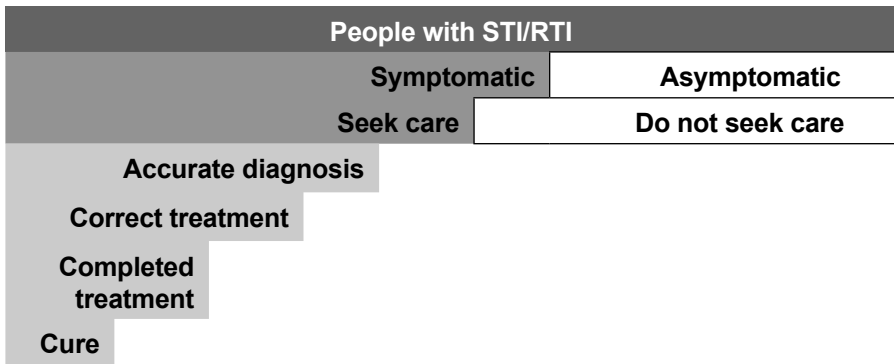
Key points

- 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, when possible, laboratory tests.
- Pap smear for **early detection** of cervical cancer should be done at least once for women around 40 years old.
- **HIV** voluntary counselling and testing (VCT) services should be developed where HIV infection is common.

Some people with an STI/RTI have symptoms and seek treatment, while others do not (Figure 3.1). Promoting symptom recognition and early use of health care services is an important way of reducing the burden of STI/RTI.

Many women and men with an STI/RTI do not have symptoms, however, or have minimal symptoms and do not realize that anything is wrong. They may visit a clinic for other reasons or not at all. Yet identifying and treating such patients prevent the development of complications for the individual patient and help reduce transmission in the community.

Figure 3.1. Barriers to STI/RTI control—finding people with an STI/RTI



In women, silent asymptomatic infections can be more serious than symptomatic ones. Syphilis, gonorrhoea and chlamydia have serious consequences, yet are often asymptomatic (see Chapter 1). Even PID frequently has mild or no symptoms.

Reproductive health services have an important role to play in detecting asymptomatic STI/RTI. Since many women attend reproductive health clinics for family planning, antenatal services and postpartum care, there is an opportunity to identify women with an STI/RTI who would benefit from treatment. This chapter presents some strategies for identifying STI/RTI in patients who come to the clinic for other reasons. Table 3.1 and Table 3.2 give some examples of these approaches.

Reproductive health services should reach out to men whenever possible. While men are more likely to have symptoms than women, asymptomatic STI is possible. More commonly, men may ignore symptoms if they are not severe. Health care providers can raise awareness about symptoms and encourage men to come for check-ups if they have symptoms. More information on examining men and women is given in Annex 1.

Table 3.1. Some examples of STI/RTI detection and treatment strategies

Method	Example—no missed opportunities
History-taking	Ask about STI/RTI symptoms or concerns at each reproductive health visit.
Clinical screening	Speculum and bimanual examination to look for signs of STI/RTI not noticed by the patient.
Laboratory screening	Serological screening for syphilis. Pap smear for early detection of cervical cancer. Voluntary counselling and testing for HIV.
Presumptive treatment on basis of risk criteria	Treatment of partners of STI patients, sex workers who have had unprotected exposure, etc. Survivors of sexual violence. Treatment of women having a transcervical procedure.
Combination strategies	Presumptive treatment of sex workers at first visit followed by regular visits for speculum/bimanual examination and Gram stain of cervical smear.

Some reproductive health settings have the resources to screen for asymptomatic infections. One example is the “well woman clinic”, which may include speculum and bimanual examination to look for signs of cervical infection or PID, a Pap smear for early diagnosis of cervical cancer, or screening tests for syphilis or gonorrhoea. Even where this is not possible, however, detection and treatment of STI/RTI can be improved with minimal additional cost and effort. A **no-missed-opportunities approach**—using strategies in Table 3.1—should be taken. This means that health care providers look for evidence of STI/RTI whenever they do examinations for other reasons.

Table 3.2 provides more information on some common screening tests that can be performed in some situations. Syphilis tests, gonorrhoea culture and Pap smears can detect more than 80% of silent infections. Other tests detect fewer asymptomatic cases, but may still be useful if health care providers understand their limitations. It is better to detect 40–60% of women with cervical infection, using speculum examination, for example, than none at all.

The remainder of this chapter gives recommendations for detecting specific STIs/RTIs.

Table 3.2. Examples of STI/RTI screening options for women

Infection/ condition	Screening method	In 100 cases, number that will be detected^c	Comment
Syphilis	Non-treponemal specific serological screening tests ^a	80–86 (primary infection) 100 (secondary) 80 (latent infection) 71–73 (late stage)	Positive test indicates a high likelihood of syphilis infection, although not necessarily current, active disease. Patients who test positive should receive treatment. Confirmatory test with a treponemal specific test can also be done where available.
Cervical infection (gonorrhoea and/or chlamydia)	Culture for gonorrhoea	95	Accurate; requires laboratory with CO ₂ jars, incubator and culture media.
	Chlamydia test ^b	60–70	Expensive; misses many cases (false negatives).
	Chlamydia PCR	95	Very expensive; high technology.
	Clinical examination	30–40	Inexpensive; misses many cases (false negatives).
Cervical dysplasia	Pap smear	80	Effective for early detection and prevention of cervical cancer.

a. RPR (rapid plasma reagin), VDRL (Venereal Disease Research Laboratory) tests.

b. For example, ELISA (enzyme-linked immunosorbent assay) or direct immunofluorescence test.

c. Under ideal conditions and depending on stage of disease. Field performance usually lower.

It is important to keep in mind some issues that may come up when screening or presumptively treating for STI/RTI. Women who have come to the clinic for other reasons may not be prepared to hear that they may have an infection especially one that is sexually transmitted. They may be even more upset if they are told that they have to inform their sexual partner. Such situations must be handled carefully to avoid losing the patient’s trust and damaging the reputation of the clinic in the community. It is important to remember that no screening test is 100% accurate, and many are much less so. This should be carefully explained to patients and the possibility of error should be acknowledged. Most importantly, health care providers should avoid labelling problems as sexually transmitted when this is uncertain. A more cautious approach—and one often more acceptable to patients and their partners—is to explain that many symptoms are nonspecific; treatment can then be offered as a precaution to prevent complications, preserve fertility and protect pregnancy. These and other counselling issues are covered in Chapter 4. Recommendations for partner notification and treatment can be found in Chapter 8.

SYPHILIS

Syphilis remains a leading cause of perinatal mortality and morbidity in many parts of the world despite widely available and affordable technology for diagnosing and treating infection in pregnant women. Among pregnant women in the early stages of syphilis who are not treated, an estimated two-thirds of pregnancies end in abortion, stillbirth, or neonatal infection.

INDICATIONS AND OPPORTUNITIES FOR SCREENING

- Pregnancy. Screening for syphilis should be done at the **first antenatal visit, as early as possible** in pregnancy. It can be repeated in the third trimester if resources permit, to detect infection acquired during the pregnancy.
- Women who do not attend antenatal clinic should be tested at delivery. Although this will not prevent congenital syphilis, it permits early diagnosis and treatment of newborns.
- Women who have had a spontaneous abortion (miscarriage) or stillbirth should also be screened for syphilis; in many areas, identification and treatment of syphilis remove a major cause of adverse pregnancy outcome.
- Men and women with STI syndromes other than genital ulcer should be screened for syphilis. Screening is unnecessary for patients with ulcers who should be treated syndromically for both syphilis and chancroid without testing.
- Sex workers should be screened every 6 months.

Because of the serious complications of syphilis in pregnancy, the first priority should be to ensure universal antenatal screening.

AVAILABLE SCREENING TOOLS

- Non-treponemal tests, such as rapid plasma reagin (RPR) and venereal disease research laboratory (VDRL) tests, are the preferred tests for syphilis screening. RPR can be performed without a microscope (see Annex 3). These tests detect almost all cases of early syphilis but false positives are possible (Table 3.2).
- Treponemal tests (e.g. *Treponema pallidum* haemagglutination assay—TPHA), if available, can be used to confirm non-treponemal test results (see Annex 3).
- Quantitative (RPR) titres can help evaluate the response to treatment (see Annex 3).

Note: where additional tests are not available, all patients with reactive RPR or VDRL should be treated.

RECOMMENDATIONS

Syphilis testing should be done on-site where possible to maximize the number of patients who receive their results and are treated. Ideally:

- Patients should receive their test results before leaving the clinic.
- Patients with reactive (positive) results should be treated immediately (see Treatment table 5 in Chapter 8).
- All patients must be asked for a history of allergy to penicillin (see Treatment table 5 in Chapter 8 for effective substitutes).
- Sex partners should also be treated.

Syphilis screening in pregnancy is based on a blood test at the first antenatal visit (repeated if possible in the third trimester). Partner counselling should stress the importance of treatment and STI/RTI prevention in maintaining a healthy pregnancy. Same-day, on-site syphilis screening and treatment has been shown to greatly increase the number of women effectively treated and to reduce the incidence of congenital syphilis (Box 3.1).

Box 3.1. Benefits of improved antenatal syphilis screening

In Zambia, despite high rates of congenital syphilis and over 90% attendance by pregnant women at antenatal clinics, less than 30% were screened for syphilis. Of those tested and found to be seropositive, less than a third were treated. Similar problems were documented in Nairobi, Kenya. Services in both places were then improved to provide same-day testing and treatment. As a result, the proportion of syphilis-reactive women who received treatment in Nairobi increased to 92%, and 50% of partners were also treated. In Zambia, the prevention programme reduced the rate of complications of syphilis in pregnancy by two-thirds.

If syphilis screening is already established in antenatal clinics, it should be evaluated regularly to estimate the proportion of women who are tested, diagnosed and effectively treated. Two simple indicators can be easily calculated each month from clinic records:

$$\text{Screening coverage} = \frac{\text{Number of pregnant women tested}}{\text{Number of women at first antenatal visit}}$$

$$\text{Treatment coverage} = \frac{\text{Number of RPR-reactive women treated}}{\text{Number RPR-reactive}}$$

If syphilis screening is not working well, problems should be corrected. Box 3.2 compares what is *supposed to* happen for syphilis screening with what may actually be happening, and offers some possible solutions.

Box 3.2. Improving antenatal syphilis screening

Problem	What is supposed to happen, but does not	Possible solutions
Women in need not identified	Pregnant women are <i>supposed to</i> attend antenatal clinics early in pregnancy but do not—due to lack of confidence in the system and inadequate promotion.	Promote early attendance at antenatal clinic. Work to make services more acceptable and accessible. Inform and empower women in community to ask for services and screening.
Intervention not available	Clinic staff members are <i>supposed to</i> take blood samples and send them to a laboratory but do not—because of poor supervision, poorly organized systems to transport blood, lack of needles, or other obstacles.	Improve training, supervision and motivation of health care providers. Improve stock management and reordering of needed supplies.
Test results not available	Laboratory technicians are <i>supposed to</i> conduct tests and communicate results to clinic staff but do not—because they think these tasks should not be part of their already heavy workload.	Improve coordination with laboratory. Develop on-site testing capacity.
Utilization poor	Women are <i>supposed to</i> appear at the next antenatal visit and receive test results but do not—because clinic record systems are poorly managed and organized.	Improve antenatal care systems. Urge pregnant women to attend antenatal clinic early and return when advised.
Poor staff compliance	Clinic staff members are <i>supposed to</i> provide syphilis treatment and education on prevention and partner notification but do not—because the drug supply is irregular, they consider talking about sexuality taboo and they have little time to spend with each client because of their heavy workload.	Train providers in STI/RTI and sexuality. Improve clinic staffing to meet workload. Improve stock management and reordering of needed supplies.

Adapted from: Dallabetta G, Laga M, Lamptey P. *Control of sexually transmitted diseases: a handbook for the design and management of programs*. Arlington, VA, Family Health International, 1996.

VAGINAL INFECTIONS

Vaginal infections (**yeast infection, bacterial vaginosis and trichomoniasis**) are very common in women of reproductive age, are almost always symptomatic and rarely cause complications.

In non-pregnant women, there is no need to look for asymptomatic cases. Asymptomatic women should not be treated for yeast or bacterial vaginosis on the basis of microscopy findings alone.

In pregnant women, however, bacterial vaginosis (BV) and trichomoniasis may cause complications such as prelabour rupture of membranes and preterm delivery. Women at risk for these conditions should be screened regardless of symptoms.

INDICATIONS FOR SCREENING

- Pregnant women with a history of spontaneous abortion or preterm delivery should be screened.

AVAILABLE SCREENING TOOLS (see Annex 3)

- BV can be detected by Gram stain microscopy of a vaginal smear or simple bedside methods (see Annex 3).
- Motile *Trichomonas* protozoa (trichomonads) can be seen on microscopic examination of a fresh wet mount of vaginal fluid in a drop of normal saline.

RECOMMENDED APPROACH

- Pregnant women with a history of spontaneous abortion or preterm delivery should be screened for BV 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.
- Women with symptomatic vaginal discharge in the second or third trimester should be treated (without screening) as above for BV, trichomoniasis, and yeast infection (see Flowchart 9 in Chapter 9).
- Non-pregnant women with abnormal vaginal discharge should be managed according to Flowchart 1 in Chapter 8.

CERVICAL INFECTIONS

Cervical infections are much less common than vaginal infections, especially among women who use reproductive health services, and are usually asymptomatic. The cervix is the most common site of infection for **gonorrhoea** and **chlamydia**. Even if a woman is asymptomatic, it may be possible to detect signs of infection on careful speculum examination (Table 3.3). Speculum examination may also reveal signs of other infections, including cervical ulcers and warts.

INDICATIONS AND OPPORTUNITIES FOR SCREENING

Screening may be done:

- any time a speculum examination is performed for other reasons;
- during pregnancy.

People with frequent exposure to STI, such as sex workers, should be screened regularly.

AVAILABLE SCREENING TOOLS

- Careful speculum examination may detect many (but not all) cervical infections (Table 3.3).
- Culture for gonorrhoea is accurate and not expensive or technically difficult to set up in established laboratories (Table 3.2).
- Laboratory tests for chlamydial infection are expensive and miss many infections (Table 3.2). Polymerase chain reaction (PCR) is very accurate but very expensive.

RECOMMENDED APPROACH

- A careful speculum examination should be done to look for signs of cervical infection (Table 3.3). Speculum examination skills are reviewed in Annex 1. Some asymptomatic internal ulcers and genital warts may also be detected on speculum examination.
- A swab should be collected from the cervical canal (endocervix). If the swab appears yellow when held up against white paper (positive swab test), cervical infection is likely and the woman should receive treatment for gonorrhoea and chlamydia.
- Depending on laboratory resources, endocervical swab specimens can also be:
 - cultured for gonorrhoea (Table 3.2);
 - tested for chlamydial infection (Table 3.2).

Table 3.3. Clinical criteria for cervical infection

Screening method	Signs	Management
Speculum examination detects some cases of cervical infection.	Mucopurulent discharge (non-clear, yellowish discharge from endocervix).	When any of these signs are present, patient should be treated for both gonorrhoea and chlamydia. Note: at least half the women with cervicitis do not have these signs, and some women with these signs do not have gonorrhoea or chlamydia.
	Friability (easy bleeding) when the cervix is touched with a swab.	
	Positive swab test (yellow discoloration of swab inserted in endocervix).	

Screening is one of the few ways to detect cervical infection and it should not be limited to women with vaginal discharge. Cervical infection is usually asymptomatic and women without vaginal discharge are as likely to have gonorrhoea or chlamydial infection as women with discharge. Despite lack of symptoms, consequences can be severe if infection reaches the upper genital tract.

PELVIC INFLAMMATORY DISEASE

Upper genital tract infection or PID leads to serious and life-threatening complications including infertility and ectopic pregnancy, yet can often develop silently with few symptoms or none at all. Women with lower abdominal tenderness on examination should be managed for PID.

INDICATIONS FOR SCREENING

Screening should be performed:

- any time a speculum or bimanual pelvic examination is performed, or when women have vague complaints of lower abdominal discomfort, back pain, spotting between periods, or pain during sexual intercourse;
- prior to transcervical procedures.

AVAILABLE SCREENING TOOLS

- Careful abdominal and bimanual pelvic examination are the only tools for detecting silent PID.

IMPLEMENTING SCREENING

Bimanual pelvic examination skills are reviewed in Annex 1. Signs of upper genital tract infection include lower abdominal, cervical motion, uterine or adnexal tenderness. Women with these signs should be managed without delay using the lower abdominal pain flowchart (Flowchart 2 in Chapter 8).

CERVICAL CANCER SCREENING

Cervical cancer is a recognized complication of STI, related to infection with a few specific strains of human papilloma virus. Screening and treatment of early stages (cervical dysplasia) is effective in reducing morbidity and mortality from cervical cancer.

INDICATIONS FOR SCREENING

Indications for screening depend on resources. Where cytology services are well established, all women over 35 years old should be screened every five to ten years. Where cytology services are limited, the objective should be to screen all women once around the age of 40.

AVAILABLE SCREENING TOOL

Cytology by Pap smear (Papanicolaou smear) is currently recommended. Newer techniques such as visual inspection of the cervix are being evaluated and may be feasible screening strategies. Screening for cervical cancer is also an opportunity to look for signs of other cervical infections.

IMPLEMENTING SCREENING

Cervical cancer screening requires staff who can perform speculum examination and are trained in smear collection techniques, as well as availability of cytology services for reading smears. Women with a positive smear should be referred for further diagnosis and treatment.

HIV COUNSELLING AND TESTING

Testing for HIV infection has several potential benefits, from promoting prevention to improving access to care and prevention of mother-to-child-transmission (see Chapter 7). HIV testing should always be voluntary, conducted by trained staff with respect for privacy and confidentiality, and include pre- and post-test counselling.

INDICATIONS FOR SCREENING

In most communities, voluntary HIV counselling and testing services should be available:

- as part of routine antenatal care or linked to those services;
- for anyone who wants to know their HIV status (including partners of pregnant women).

AVAILABLE SCREENING TOOLS

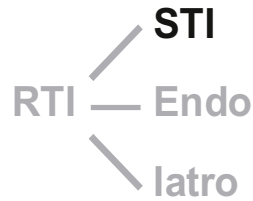
There are many kinds of HIV tests available. WHO recommends confirmatory testing with a second test of a different type before the client is notified of a positive result.

IMPLEMENTING SCREENING

Counselling and testing for HIV should be available to reproductive health clients on-site or through referral. Counselling and testing for HIV includes:

- pre-test counselling;
- HIV test with confirmatory test;
- post-test counselling and referral if indicated.

Counselling and testing for HIV should be voluntary and the consent of the patient is always required. HIV testing should never be done on the request of another person, and results should only be given in person to the client.



CHAPTER 4.

STI/RTI EDUCATION AND COUNSELLING

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,
 - **recognizing symptoms** and early use of services.
- Providing essential **health education** for STI/RTI takes little time. All patients with an STI/RTI should be given information about completing their treatment and preventing reinfection.
- The partners of patients who are treated for infections that are clearly sexually transmitted should also be treated. **Partner treatment** is not needed for non-sexually-transmitted RTI, however, and care must be taken not to mislabel infections as sexually transmitted when they are not.
- **Counselling** 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,
 - **reducing risk of HIV infection,** and
 - **helping people find ways to lead enjoyable sex lives.**
- Sexuality must be clearly and directly addressed in STI/RTI prevention.

People may be at **risk** of STI because of their behaviour, yet this behaviour may be difficult to change because of factors or circumstances—including gender, cultural expectations, poverty, migration and family disruption—that 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 STI/RTI 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 related to the prevention or treatment of STI/RTI and need not take much time. Counselling, on the other hand, requires time to establish trust, assess the person’s individual situation, and relate prevention information directly to the person’s life. Busy health care providers rarely have the time to counsel every patient with an STI/RTI.

Clinic-based interventions are the subject of this chapter and are outlined in Table 4.1. Chapter 5 addresses education at the community level.

Table 4.1. Steps in patient education and counselling

Health education			Counselling
To raise awareness	For prevention	As part of STI/RTI management	
Talk about STIs/RTIs and complications	Promote correct and consistent condom use	Emphasize compliance with treatment	Discuss risk and vulnerability
Explain about symptoms and how to recognize them	Encourage fewer sex partners	Promote condom use (including during treatment to prevent reinfection)	Examine barriers to prevention Discuss solutions and build skills for safer sex
Promote early use of services	Support delay in starting sex (for young people)	Encourage referral of partners for treatment	Make a plan and follow up

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 STI/RTI. 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 marginalized 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.

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.

GENERAL SKILLS FOR STI/RTI EDUCATION AND COUNSELLING

Box 4.1 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 recognize, 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 4.1. 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 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.

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 emphasize the benefits of enjoying a **healthy sexual life** while preserving health and fertility. Box 4.2 includes a checklist of essential information that should be provided during patient education. In addition:

- If a client has come for **family planning**, she should be offered information about STI/RTI, how to prevent infection and how to recognize 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 STI/RTI 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 (see Chapter 8).

More specific advice on integrating education and prevention counselling into family planning and antenatal visits can be found in Chapter 6 and Chapter 7.

Box 4.2. 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 and HIV and behaviour that spreads 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.

Much of this information can be presented to groups of patients while they are waiting in the clinic to be seen. A health educator or other staff member can be trained to present basic sexual health information, including on STI prevention, using a flipchart or posters to reinforce messages. In some clinics, information can be presented using videos or audio tapes. Whatever the method, patients should be given a chance to discuss the information and ask questions in private during the examination or counselling session.

Such group presentations can help patients identify their concerns and ask specific questions. Health education should continue during the consultation and examination. For example, techniques for negotiating condom use can be discussed if the patient complains that she has trouble getting her partner to use them. Be sure to summarize important points at the end of the visit and offer patients a chance to ask questions.

PATIENT EDUCATION ABOUT SAFER SEX

We know that certain behaviours increase the risk of STI transmission. Some of these involve unprotected sexual contact with body fluids in the vagina, mouth, or anus. With others, such as sex work, it may be hard for the person to use condoms or other prevention methods.

Safer sex (Box 4.3) can be more pleasurable for both partners because it is less likely to cause worry, discomfort, or disease. Emphasize that safer sex is real sex—couples can talk about sex together to learn different ways of pleasing each other.

Box 4.3. What is safer sex?

Safer sex is any sexual activity that reduces the risk of passing STI and HIV from one person to another. Safer sex does not allow semen, vaginal fluid, or blood to enter the body through the vagina, anus, or any open sore or cut.

Some safer sex practices

- Use a condom every time you have sex (especially with new partners).
- Reduce the number of your sex partners—sex with an uninfected monogamous partner is the safest.
- Try massage, rubbing, touching, dry kissing, hugging, or masturbation instead of intercourse.
- Keep away from unsafe sexual practices, like “dry sex”, which may break the skin—the vagina should be wet inside when you have intercourse.
- If you have anal sex, always use a condom with lubrication because the mucous membrane there can tear easily.
- DO NOT have intercourse or oral sex if you or your partner has genital sores or an abnormal discharge.

PATIENT EDUCATION FOLLOWING STI/RTI TREATMENT

Patients who are being treated for an STI/RTI need additional information to help ensure they complete their treatment and avoid reinfection. Box 4.4 summarizes essential information for patients who are being treated for an STI/RTI.

Box 4.4. Patient education as part of STI/RTI case management

- Encourage patients to seek treatment from their clinic or doctor. Discourage self-medication or getting medication from unlicensed sources.
- Encourage patients to complete their course of treatment. Stopping treatment too early, as soon as symptoms disappear, is a common reason for treatment failure. Discourage sharing of medicines.
- Avoid labelling an infection as sexually transmitted when the diagnosis is not certain. Most RTIs are not sexually transmitted, and patients (and their partners) should understand this.
- Encourage partner treatment when appropriate (see Chapter 8). Partner treatment is indicated for women who have genital ulcers, signs of cervicitis or PID, but careful counselling is needed to avoid misunderstanding and potential conflict between partners.
- Emphasize what patients can do to prevent reinfection. This includes providing information on safer sex (Box 4.3) and condom use, and may require more in-depth counselling.

COUNSELLING

Health care providers have an important role to play in supporting women and men to adopt effective prevention strategies. Counselling is a more in-depth process than health education and requires more time. Because of this, in busy clinics it may make sense to have a person specifically assigned to counsel patients. Such a person may provide other services, such as voluntary HIV counselling and testing. Effective counselling must deal with issues of risk and vulnerability (Box 4.5).

Box 4.5. Elements of effective counselling

Try to understand how a person's situation may increase risk and vulnerability.

Understand that there may be circumstances in a person's life that are difficult to change (for example, alcohol use, sex work for survival) and that may make safer sex difficult.

Provide information. Give patients clear and accurate information on risky behaviours, the dangers of STI, and specific ways to protect themselves.

Identify barriers. What keeps someone from changing behaviour? Is it personal views, lack of information, or social restraints such as the need to please a partner? Which of these can be changed and how?

Help people find the motivation to reduce their risk. People often change behaviour as a result of personal experience. Meeting someone who has HIV/AIDS, hearing about a family member or friend who is infertile due to an STI/RTI, or learning that a partner has an infection are all experiences that can motivate someone to change behaviour.

Establish goals for risk reduction. Set up short- and long-term goals that the patient thinks are realistic.

Offer real skills. Teach negotiation skills, demonstrate how to use condoms, and conduct role-playing conversations.

Offer choices. People need to feel that they have choices and can make their own decisions. Discuss substitute behaviours that are less risky.

Plan for setbacks. Rehearse how to deal with a difficult situation (for example, the husband becomes angry or refuses to use condoms).

Messages should be adapted to be relevant for each person or couple. Finding the right balance between reliable prevention of pregnancy and prevention of STI (dual protection) for each client requires a **flexible approach to counselling** on the part of the health care provider.

- Preventing pregnancy may be the main concern for young, single clients who may be unaware of their risk of STI (see Box 4.6). Education about STI risk may increase motivation to use condoms for **dual protection**, or to delay onset of sexual activity.
- Women and men in their early reproductive years—whether or not they are currently using contraception—are often concerned about their future ability to have children. Emphasizing the importance of STI prevention in **maintaining family health and fertility** may be effective motivation.
- Pregnant women and their partners who are concerned about maintaining a healthy pregnancy can be motivated to prevent infection to **reduce the risk of congenital infection**.
- Pregnancy prevention is not an issue for some people. A woman who has undergone tubal ligation, is postmenopausal or currently pregnant may still be at risk of STI and require advice on prevention.

Box 4.6. Special considerations for counselling young people

- Counselling young people may take more time.
- Young people must feel confident that their privacy and confidentiality will be respected.
- Try to establish whether the young person has someone to discuss her/his problems with.
- Be sensitive to the possibility of sexual violence or coercion. Sex with much older partners may be more likely to be coerced and may carry a higher risk of HIV or STI.
- Make sure the young person understands normal sexual development, and how pregnancy occurs.
- Make sure the young person understands that it is possible to say “no” to sex.
- Discuss issues related to drug and/or alcohol use and sexual risk-taking.
- It may be useful to involve peers in education.
- Check that the adolescent can afford any medicines necessary to treat an RTI and will be able to take the full course of treatment. Young people are particularly likely to stop or interrupt treatment if they experience unexpected side-effects.
- Ensure follow-up is offered at convenient times.

THINKING ABOUT RISK AND VULNERABILITY

Few people are able simply to accept information about what is good for them and make the necessary changes in their lives. Health care providers should be aware of situations and behaviour that influence STI risk and vulnerability, and take a realistic approach to behaviour change. Risk and vulnerability are influenced by behaviour as well as by other factors, such as age and gender, the place where one lives and works, and the larger social, cultural and economic environment, which may be beyond the person’s power to change. Migrant workers who are separated from their families for long periods of time may have risky sex because they are lonely; poor people often have poor access to health care services; and some women and men are forced to sell or trade sex in order to survive or support their families.

An understanding of these factors permits a realistic approach to counselling that takes into account circumstances in a person’s life that may be difficult to change. Knowledge of risk can also help with decisions about RTI management (Table 4.2).

Table 4.2. How individual risk may influence reproductive health decisions and STI/RTI prevention, detection and management

	High risk	Low risk
Contraceptive choice (Chapter 6)	Women with multiple sexual partners should use condoms alone, or in addition to another contraceptive method.	Dual protection may not be needed for couples in a stable mutually monogamous relationship.
RTI detection	Priority for STI screening (where available) should be people with multiple partners or other risk. Women over 35 should be given priority for cervical cancer screening because they are at higher risk.	Apart from syphilis testing in pregnancy, asymptomatic patients without obvious risk do not need to be screened for STI.
RTI management (Chapter 8)	An adolescent with vaginal discharge, whose boyfriend has a discharge, should receive additional treatment for cervical infection, and counselling on partner treatment and STI prevention.	A woman with vaginal discharge who is monogamous and has a stable family life is probably at low risk for STI and should be treated for the common vaginal infections (see Flowchart 1 in Chapter 8).
Counselling (Chapter 4)	Counselling should address specific risk behaviours.	Women with no apparent risk do not require lengthy counselling (and may not welcome it).
Partner treatment (Chapter 8)	Decisions about partner treatment should be made in the context of the couple’s situation. If one partner has had other sexual partners, or travels away from home often, it may be safer to treat both partners for STI even when symptoms are unclear.	Many RTIs do not require partner treatment because they are not sexually transmitted. If in doubt, approach the issue of partner notification carefully and let the patient decide.

Unfortunately, there is no foolproof way to evaluate a person’s risk. Table 4.3 may help providers manage patients, using their clinical skills and knowledge of the community, and the patient’s own assessment in thinking about risk. By addressing real issues, patients may be able to find solutions that will work for them.

Table 4.3. Factors to consider in assessing risk

Prevalence of STI in the community or social network	STI prevalence is often higher among: <ul style="list-style-type: none">▪ sex workers, clients of sex workers and partners of either;▪ people who engage in risky sexual behaviour for money, gifts or favours. These people may not consider themselves sex workers or at risk;▪ migrant workers and other people in occupations that involve frequent travel and separation from family;▪ adolescents and young adults.
Information collected from patient	Increased exposure may be suggested by a patient: <ul style="list-style-type: none">▪ having multiple sexual partners;▪ having a recent new sexual partner;▪ having a partner with STI symptoms.
Provider judgement	Health care providers can use their clinical judgement and knowledge of the community, together with the above factors, to evaluate risk.
Patient thinks she may be at risk	Sometimes it is difficult to ask intimate questions about risk behaviour, or patients may be reluctant to answer them. In such cases, it may be useful simply to ask the patient whether she thinks she may be at risk for STI. Asking about risk may open the door to more questions and discussion, or a woman may simply acknowledge being at risk even when she declines to discuss the details.

SUPPORTING BEHAVIOUR CHANGE

Whatever their situation, patients need information about STI/RTI, behaviours that increase risk and how to avoid them. They also need support and encouragement in negotiating safer sex, including condom use.

Health care providers can use their counselling skills to support women and men to agree on adopting safer sex behaviour that meets their needs. Box 4.7 gives some pointers that may be useful in helping patients negotiate safer sex.

Box 4.7. Negotiating for safer sex

Negotiating for safer sex is similar to negotiating for other things that we need. Thinking about how to negotiate successfully in other areas will help. A way to begin is for one person to decide what she or he wants, and what she or he is willing to offer in return.

Focus on safety

In negotiating for safer sex, the focus should be on safety, not lack of trust or blame or punishment. It is easier to reach agreement about safety because both people benefit from it.

Use other people as examples

Knowledge that others are practising safer sex can make it easier to start.

Ask for help if you need it

Inviting another trusted person to help discuss safer sex with a partner may make it easier.

Condom negotiation is one example. Box 4.8 suggests some responses to common objections that partners may raise when asked to use condoms.

Box 4.8 Help women with condom negotiation skills

If he says:	Try saying:
It will not feel as good...	It may feel different, but it will still feel good. Here let me show you. You can last even longer and then we will both feel good!
I do not have any diseases!	I do not think I have any, either. But one of us could and not know it.
You are already using family planning!	I would like to use it anyway. One of us might have an infection from before that we did not know about.
Just this once without a condom...	It only takes one time without protection to get an STI or HIV/AIDS. And I am not ready to be pregnant.
Condoms are for prostitutes. Why do you want to use one?	Condoms are for everyone who wants to protect themselves. NO CONDOM, NO SEX!
Do what you can to make sure that you both enjoy having sex with a condom. That way, it may be easier to get him to use one the next time.	

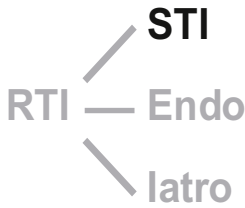
Counselling patients about “risks” and “protection” can easily sound negative, especially to adolescents and others who may feel confused or guilty about their sexuality. Health care providers should strive to maintain a positive attitude and emphasize the benefits of enjoying a healthy sex life while protecting health and fertility. The next section looks at ways of getting these messages across in the community and within reproductive health clinic settings.

SECTION 2. IMPROVING SERVICES FOR PREVENTION AND TREATMENT OF STI/RTI

Section 1 presents basic information on STIs/RTIs and their complications, how they spread and what can be done about them. It also reviews the knowledge and skills that health care providers should have in order to detect and prevent STI/RTI.

Section 2 provides advice on addressing STI/RTI through the reproductive health clinic. It also looks at ways of reaching men, adolescents and others who do not typically use reproductive health services.

Section 3 deals with STI/RTI management—how to diagnose and treat STI/RTI-related problems—and includes flowcharts and treatment tables. This section is organized using a problem-oriented approach to permit rapid access to information.



CHAPTER 5. PROMOTING PREVENTION OF STI/RTI AND USE OF SERVICES

Key points

- A public health approach to prevention and control of STI/RTI includes **reducing barriers to services, raising awareness in the community, promoting services, and reaching out** to people who do not typically use reproductive health services.
- Services should be **accessible and acceptable**, 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 **early use of services** should be promoted.
- The role of untreated STIs/RTIs in infertility, pregnancy complications and HIV infection should be emphasized to **encourage use of preventive and care services**.
- **Men** should be encouraged to participate in STI/RTI prevention. Special services or referrals may need to be developed to address STI/RTI in men.
- Services need to reach **young people** who are often at high risk of STIs/RTIs and their complications, yet are often reluctant to attend clinics.
- Finding ways to reach the groups at highest risk of infection—such as **sex workers and their clients**—is key to reducing STI transmission.

As noted in Chapter 1, communities with good access to effective prevention and treatment services have lower rates of STI/RTI and their complications than communities where services are poor, disrupted or not used by people at risk of infection. This chapter 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 STI/RTI and promoting use of services;
- reaching out to those who do not normally use reproductive health services.

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 STI/RTI 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 Chapter 4).
- 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.

- Incompetent and disrespectful health care providers—do people feel welcomed by clinic staff? Do they have confidence in the health care providers?

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

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 STI/RTI detection and treatment, must therefore be directed to 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 services;
- promoting screening services such as syphilis testing early in pregnancy;
- promoting services and reaching out to young people or other vulnerable groups who may not feel comfortable using clinic services.

Messages should emphasize the benefits of prevention, and of early treatment over later treatment (Box 5.1). 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.

Box 5.1. Messages to promote use of services for prevention and treatment of STIs/RTIs

People in the community should be aware of STIs/RTIs and know how to prevent and treat them

Prevention is better than cure—The most effective strategy is to prevent infection in the first place by reducing exposure (delaying initiation of sex, reducing number of partners and/or using condoms consistently).

Early treatment is better than late treatment—When STIs/RTIs do occur, early identification and treatment can eliminate infection before it causes complications or spreads to other people.

Better late than never—Diagnosis and treatment of complications are possible even if the first two levels of prevention fail. However, interventions at this level are often less effective and more expensive than those applied earlier.

REACHING GROUPS THAT DO NOT TYPICALLY USE REPRODUCTIVE HEALTH 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 STI yet may not know about health services or feel comfortable using them. Outreach to these groups strengthens STI control.

INVOLVING MEN

Men tend to have more sexual partners than women and thus more opportunity to acquire and spread STI. 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.

Reproductive health clinics should, as a minimum, offer treatment to the sexual partners of women who use their services. Some reproductive health 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 reproductive health 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 (see Box 5.2).

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 socialize. 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 (see Box 5.3).

Box 5.2. 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, girlfriends and children.

Two objectives for reproductive health programmes or workplace interventions for men are:

- 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 they will take an STI home.

Box 5.3. 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. First, ineffective drugs are often sold by people with minimal training (such as pharmacy sales assistants). Secondly, drugs may be sold in insufficient dosages to 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.

YOUNG PEOPLE

Generally, **young people** have higher rates of STI than older adults. 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 (within the family, in exchange for goods such as school supplies, food or clothes).
- They may not recognize 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 judgemental 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 their 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 5.4 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 minimize 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 condoms and contraception 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 5.4 Reaching young people

Services need to be convenient and ensure privacy and confidentiality. Barrier methods (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 behaviours 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;
- recognizing symptoms of STI and seeking early treatment.

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 (see Box 5.5).

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 have been developed using mobile clinics or by reserving special times at regular clinics. Such services have contributed to reducing community STI prevalence (see Box 5.3).

Box 5.5. 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 organized 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.

OTHER GROUPS

STI 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.

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. Counselling 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 STI, 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 realized. Such children should be referred to services that can provide effective, sensitive care. Chapter 10 provides information on management of sexual violence.



CHAPTER 6.

STI/RTI ASSESSMENT DURING ROUTINE FAMILY PLANNING VISITS

Key points

- 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—this is the only single method currently available.
- With regard to **IUD use**, experts make a distinction between women at “increased risk of contracting an STI” and those at “a very high individual likelihood of exposure to gonorrhoea or chlamydial infection”. The former includes, for example, women living in an area where STIs are common, and the latter includes, for example, young sexually active women who report having a partner (current or previous) with urethral discharge. WHO recommends that while there is no justification to deny an IUD to a woman simply because she lives in an area where STIs are common, IUD use would not be recommended for those with a high individual likelihood of exposure to gonorrhoea or chlamydial infection.
- Women with a high individual risk of acquiring **HIV infection**, or those already infected with HIV, should not use spermicides. They should not use diaphragms with spermicide unless other more appropriate methods are unavailable or unacceptable.
- Women should be asked about **symptoms** of common STIs/RTIs; women with symptoms should be managed using the syndromic approach.
- Ask about **symptoms in the partner**. Women with symptomatic partners should be treated, and treatment for the partner arranged.
- **Screening for STI/RTI** should be done whenever warranted—a blood test and a careful speculum and bimanual examination can identify many silent STIs/RTIs.
- **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.

The family planning (FP) visit is an opportunity to prevent not only unwanted pregnancies but also infection (dual protection). It is also a chance to detect some silent STIs/RTIs and to offer treatment to symptomatic women who may not otherwise use health services. How can this best be done?

While STI/RTI prevention should be mentioned at each family planning visit, it should be recognized that concern about STI/RTI is usually not the main reason for a client's visit to the clinic. Most women attend FP clinics to obtain contraception, and health care providers should bring up STI/RTI issues in a way that addresses the client's priorities. There are a few issues to keep in mind with family planning clients:

- In routine provider–client contact in an FP clinic it is difficult to assess an individual's level of risk to STIs. Therefore, when meeting FP clients it may be useful for health care providers to keep in mind that all sexually active individuals are potentially at risk of contracting an STI.
- **Consistent and correct use of condoms** is highly effective for preventing both pregnancy and STI, and is the **only single method** that provides effective **dual protection**.
- Women with a current STI/RTI are eligible for most contraceptive methods; however, the infection should be treated appropriately and steps taken to prevent future infection.

For these reasons, careful attention to the client's needs for both contraception and STI protection is essential. Some clinics use simple tools to assess a client's risk of STI (e.g. self-administered risk-assessment questionnaires, or asking simple questions such as Does your partner have a urethral discharge? and Do you have multiple partners?). This type of assessment may be useful, but **a woman may still be at risk even if she does not report any risky behaviour or risk factors**. Many women are at risk of STI because of their partner's behaviour, not their own, and are often not aware of their risk. They may be in a steady relationship that they believe is monogamous. Providers should be sensitive to these issues in discussing risk of infection with these women, who may see no need for dual protection.

INTEGRATING STI/RTI ASSESSMENT INTO ROUTINE FP VISITS

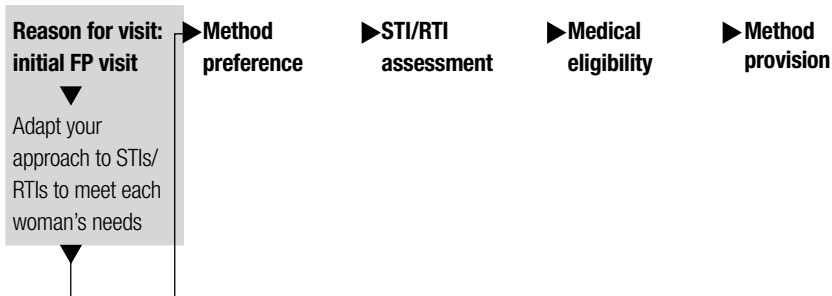
The general recommendations for integrating STI/RTI prevention into routine FP clinic visits given here are based on the approach to client–provider interaction developed in WHO's forthcoming publication entitled *Decision-making tool for family planning clients and providers*. The opportunities for addressing STIs/RTIs during the initial (method-choice) visit and routine follow-up visits are different and are treated separately.

INITIAL VISIT

Women attending an 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 STI/RTI. 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.

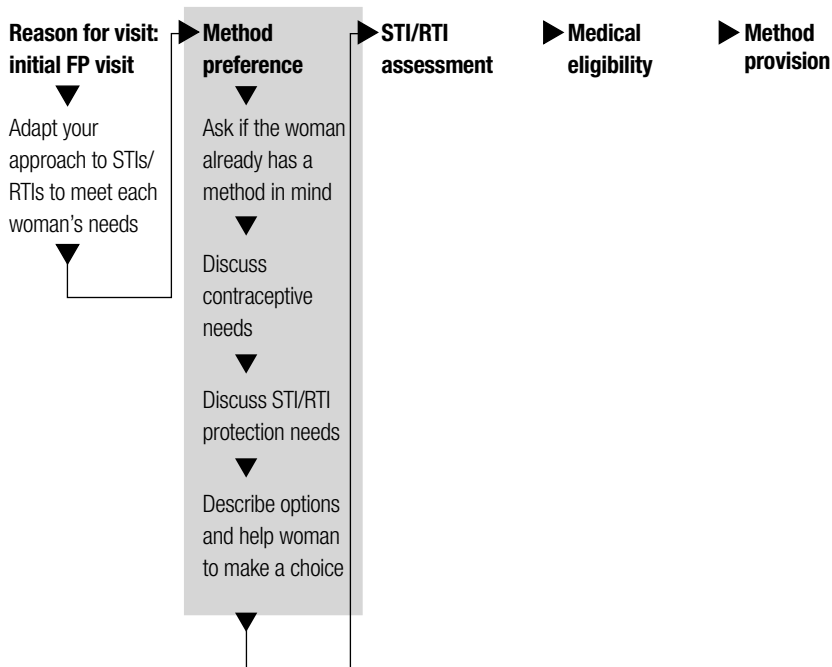
When should the subject of STI/RTI be introduced in the initial FP visit? If it is brought up too early, the woman may feel that her family planning needs are being ignored. If brought up too late, the choice of method may need to be reconsidered. The following pages illustrate an approach to dealing 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 STI/RTI, and providing her chosen method.

Steps in decision-making at initial FP visit



We will now consider each of these steps with particular attention to assessment and prevention of STI/RTI.

Step 1: Discuss method preference



Ask if the woman already has a method in mind. The woman's initial method 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 STI.

Discuss STI protection needs. Invite the client to share her concerns about such infections. Open-ended, personalized 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 be easily dismissed with a simple "No".






Describe options and help the woman make a choice. Table 6.1, later in this chapter, includes information on the effectiveness of different contraceptives in preventing pregnancy and STI.

Sexually active women and men often need dual protection to prevent both pregnancy and infection. Dual protection can be provided using a single method (condom) or combination of methods that includes the condom (dual methods). Box 6.1 gives some options for dual protection and some issues to discuss with clients.

Box 6.1. Dual protection options and issues

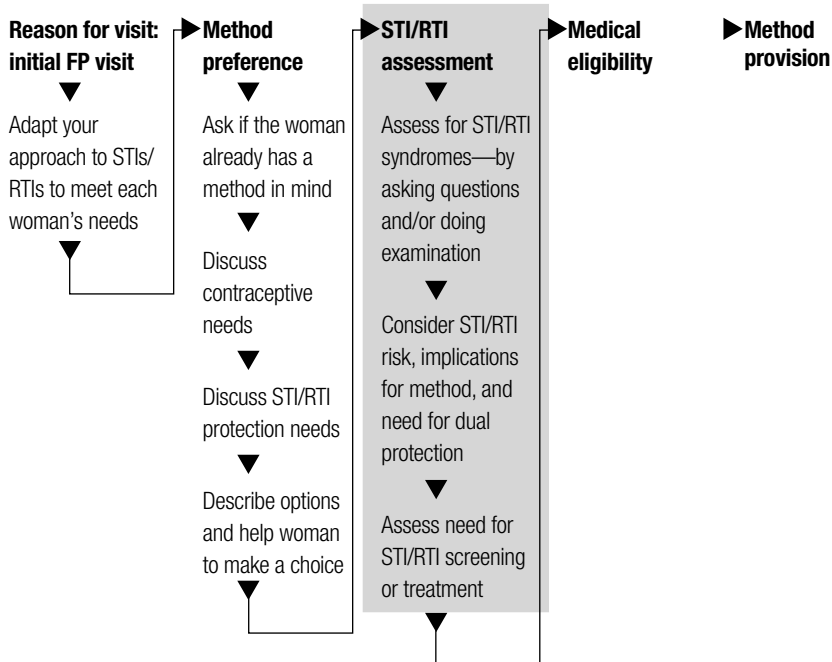
Some questions to ask:

- *Which choice suits you best?* Help clients choose the method that works best for them.
- *Can you stick to this choice?* What would make this method difficult? What would help?
- *Will your partner help?* Can the client talk with her partner about this?
- *What is your back-up choice?* For example, if the client chooses condoms, could the couple abstain if they ran out of condoms?
- *Do you think you or your partner may have an infection?* For example, pain or burning during urination, an open sore in the genital area, pus coming from his penis?
- *Do you think your partner has other sexual partners?*

OPTIONS USING FAMILY PLANNING	
<p>1. Male condoms or female condoms</p>  <p style="text-align: center;">OR</p> 	<p>2. Condoms AND another family planning method</p>  <p style="text-align: center;">AND</p>
<p>3. Any family planning method WITH uninfected partner</p>	
<p>SOME OTHER OPTIONS (these examples are particularly appropriate for adolescents)</p>	
<p>4. Other safe forms of intimacy</p> 	<p>5. Delay having sex until you are ready</p> 
<p>AND for added protection from STIs/HIV, reduce your number of sexual partners: one uninfected partner is safest</p>	

Clients who choose the condom alone can be provided with emergency contraception for back-up protection against pregnancy in case a condom breaks or is not used (see Page 78).

Step 2: Look for STI/RTI



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 work-up 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 STI. The flowcharts in Chapter 8 can be used to manage patients with such complaints.

A pelvic examination is not required for the provision of contraceptive methods other than the IUD (to rule out pregnancy and infection and determine uterine size, shape and position), diaphragm/cervical cap (to fit the device) and sterilization (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 (Chapter 3).

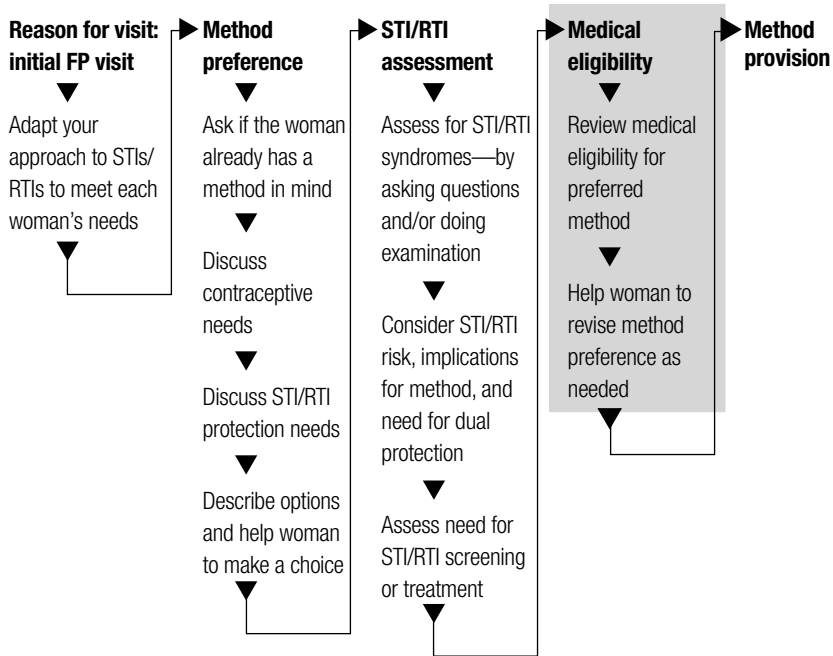
Consider STI risk, implications for contraceptive method, and need for dual protection. STI risk and the woman's need for protection should be reviewed at this point. She may change her method preference—or add the condom—to improve her protection against STIs. It is important to keep in mind that STI 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 work-up will depend on the resources available. Symptomatic women can be managed without laboratory tests (Chapter 8). Where resources permit, screening for common asymptomatic STIs such as cervical infection, syphilis and HIV (Chapter 3), can be included in the protocol for the initial visit along with other “well-woman” screening, 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.

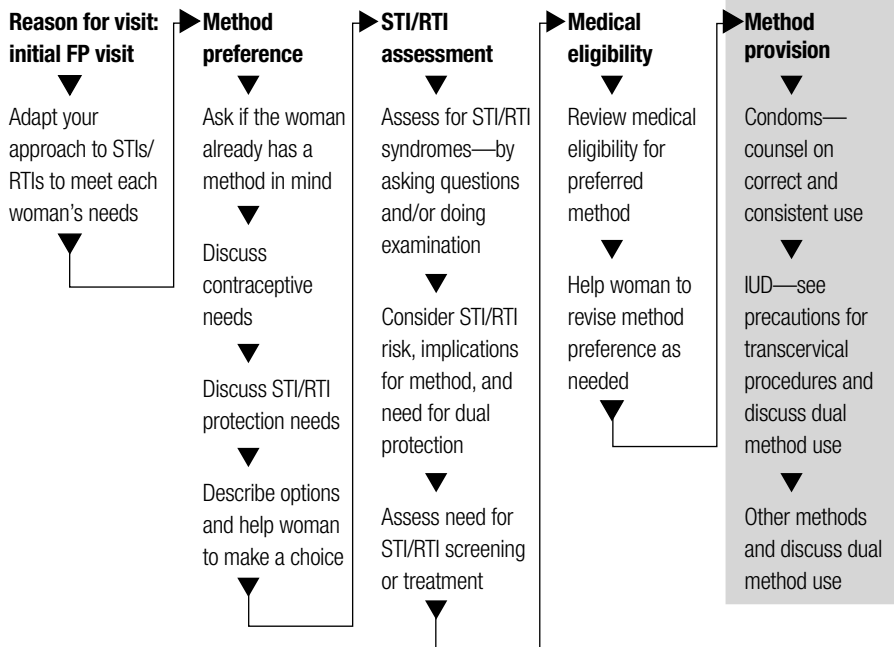
The existence of a current STI/RTI is not in itself a reason to deny most methods—providers should offer treatment or referral and information or counselling on how to prevent future infection (Chapter 2 and Chapter 4). Initiation of some methods, such as an IUD and sterilization, should be delayed until 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. Next, the suitability of the preferred method or methods should be evaluated. Medical eligibility criteria (MEC) have been developed by WHO (and adopted in many countries) to assist health care providers in identifying health conditions or situations where certain contraceptive methods should be discouraged or where special precautions are advisable. For example, STI/HIV risk may influence the medical eligibility for use of the IUD or spermicides.

Step 4: Provide method(s)



The final step in the process is **method provision**. 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 (Chapter 2 and Chapter 4). An IUD should not be inserted if the woman has a cervical infection; Chapter 2 describes steps that can be taken to ensure safe insertion. Methods other than condoms do not protect against STI, and adequate counselling should be given on dual method use to add STI protection.

RETURN VISITS

Clients return to reproductive health clinics for follow-up visits for many reasons, including:

- 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. Chapter 8 describes the management of symptomatic STIs/RTIs. Chapter 3 presents options for STI/RTI screening that may be appropriate at routine follow-up visits at regular intervals. Each follow-up visit is an opportunity to promote STI/RTI prevention through education and counselling.

FAMILY PLANNING METHODS AND STIs/RTIs

Most family planning methods do not protect against STIs. Table 6.1 presents estimates of contraceptive effectiveness and STI protection for common methods. Some contraceptive methods actually increase the risk of non-sexually transmitted RTI or their complications, and clients may abandon a method (and risk pregnancy) if they think it is causing problems. Yeast infection, for example, is more common in women using oral contraceptives, and bacterial vaginosis occurs more frequently in women using the diaphragm with spermicide. Health care providers should be aware of such method-related problems and be able to counsel patients about management or alternative methods.

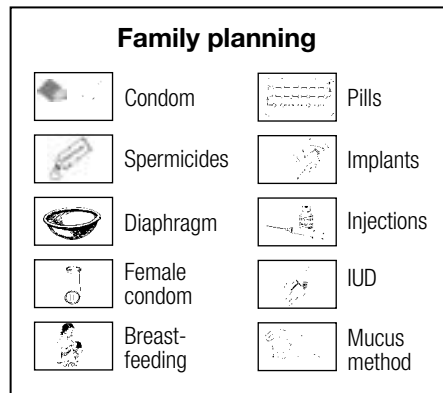


Table 6.1. Family planning methods: protection from pregnancy and STIs

Method	Effectiveness^a in pregnancy prevention	Protection against STIs
Male condom	85–98%	Protects against most STIs, including HIV. Protection unproven against infections transmitted by skin-to-skin contact (HSV, HPV).
Female condom	79–95%	Laboratory studies show protection against STI/HIV. More human studies needed.
Spermicides	71–85%	Possible protection against bacterial STIs, no protection against viral STIs and HIV. May increase risk of HIV infection.
Diaphragm (with spermicides)	84–94%	Possible protection against bacterial STIs. Increased risk of bacterial vaginosis. Little is known about protective effect of diaphragm against HIV. Protective against cervical neoplasia. Spermicide use may increase risk of HIV infection.
Oral contraceptives	92–>99%	No protection against lower genital tract infections; reduced risk of symptomatic PID. No protection against viral STIs and HIV. Yeast infections more common.
Implantable contraceptives	>99%	No protection against bacterial or viral STIs and HIV.
Injectable contraceptives	>99%	No protection against lower genital tract infections; reduced risk of symptomatic PID. No protection against viral STIs and HIV.
IUD	>99%	No protection against bacterial or viral STIs and HIV. Associated with PID in first month after insertion.
Surgical sterilization (tubal ligation and vasectomy)	>99%	No protection against lower genital tract infections; reduced risk of symptomatic PID. No protection against viral STIs and HIV.

a. Effectiveness in normal (“typical”) use.

DUAL PROTECTION AND EMERGENCY CONTRACEPTION

Only correct and consistent condom use provides reliable protection against STIs. Counselling on dual protection should thus always include promotion of condoms. When used consistently and correctly, condoms also provide good protection against pregnancy. Couples who want additional protection against pregnancy can combine

condoms with another method, or use emergency contraception as back-up protection in the event of condom misuse or failure. Box 6.2 describes how to provide emergency contraception using different types of emergency contraceptive pills, including commonly available oral contraceptives.

Box 6.2. Use of emergency contraception

In many countries, special-purpose pills for emergency contraception (EC) are available. Regular birth control pills can also be used for EC. Each type or brand of birth control pill has a different amount of hormone, so the number of pills that make up a full dose will vary.

How to take emergency contraceptive pills: Ideally, take **levonorgestrel-only** or **combined estrogen-progestogen** as early as possible after unprotected intercourse, within 72 hours. **Levonorgestrel-only** or **combined estrogen-progestogen** can be used between 72 hours and 120 hours after unprotected intercourse. However, the patient should be advised that the effectiveness of emergency contraceptive pills is reduced the longer the interval between having unprotected intercourse and taking emergency contraceptive pills.

	Dose
Special-purpose levonorgestrel-only pills for emergency contraception	Preferably, take 1.50 mg of levonorgestrel in a single dose. Alternatively, take the levonorgestrel in 2 doses (1 dose of 0.75 mg of levonorgestrel, followed by a second dose of 0.75 mg of levonorgestrel 12 hours later).
Special-purpose combined pills for emergency contraception	Take 2 combined emergency contraceptive pills (50 µg of ethinylestradiol each). Repeat 12 hours later.
Low-dose combined pills	Take 4 low-dose birth control pills (30 µg of ethinylestradiol each). Repeat 12 hours later.
High-dose combined pills	Take 2 high-dose birth control pills (50 µg of ethinylestradiol each). Repeat 12 hours later.

Emergency contraceptive pills may cause nausea and/or vomiting. These side-effects are much less common with progestogen-only (levonorgestrel) pills. Advise the woman to try eating something at the same time as she takes the pills and, if possible, to take a medicine that will prevent vomiting before taking the combined emergency contraceptive pills. If she vomits within two hours of taking the pills, she should take another dose immediately.

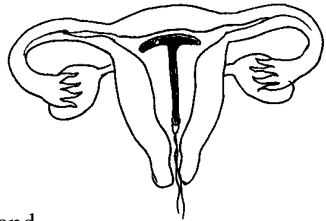
Copper-bearing IUDs are the most effective method of emergency contraception; they can be used within 5 days after unprotected intercourse. To use the IUD as an emergency contraceptive method, women must meet the medical eligibility requirements for regular IUD use. The IUD can then be used for continuing contraception, or removed at the next menses.

INTRAUTERINE DEVICE (IUD)

For women with a high individual likelihood of exposure to gonorrhoea or chlamydial infection, IUD use is usually not recommended unless other more appropriate methods are unavailable or unacceptable. Other women at increased risk of STIs can generally use the IUD. Precautions to reduce risk of iatrogenic infection during IUD insertion are described in Box 6.3.

Box 6.3. Reducing risk of iatrogenic RTI with IUD insertion

- Most of the increased risk of PID with IUD use occurs during the month following insertion. This risk may be reduced by taking precautions during the transcervical procedure (see Chapter 2).
- Avoid unnecessary removal and re-insertions. For example, the Copper T380A provides safe and effective protection against pregnancy for 10 years. The effective duration of use varies for each type of IUD and the provider and client should be aware of the duration of effectiveness of the device chosen.



Any woman with signs of cervical infection (mucopurulent cervical discharge or cervical friability) should be treated for gonorrhoea and chlamydia using Treatment table 2 (Chapter 8); her partner should also receive treatment. The insertion of an IUD must be delayed until the infection is cured. The patient should also be counselled about dual protection.

Women with lower abdominal, uterine, adnexal or cervical motion tenderness should be treated for PID using Treatment table 3 in Chapter 8 and counselled about alternative contraceptive methods (emphasizing dual protection). Women who are at high individual risk for gonorrhoea or chlamydial infection should usually not use the IUD, unless other more appropriate methods are unavailable or unacceptable.

If a woman develops PID, purulent cervicitis, chlamydial infection or gonorrhoea while using the IUD, there is usually no need to remove the IUD while being treated for the infection if the woman wishes to continue IUD use.

SPERMICIDES AND DIAPHRAGM WITH SPERMICIDES

Women at high risk for HIV infection or those already HIV-infected should not use spermicides. Repeated and high-dose use of the spermicide nonoxynol-9 is associated with an increased risk of genital lesions, which may increase the risk of acquiring HIV infection. Women at high risk of HIV infection or those who are HIV-infected should not use the diaphragm with spermicides unless other more appropriate methods are unavailable or unacceptable.



CHAPTER 7. STI/RTI ASSESSMENT IN PREGNANCY, CHILDBIRTH AND THE POSTPARTUM PERIOD

Key points

- Women should be encouraged to attend **antenatal clinic early** in pregnancy to allow timely detection and prevention of any problems, including STI/RTI.
- Women should be screened for **syphilis** at the first antenatal visit. Screening for syphilis should be done on-site, and results and treatment made available to the woman before she leaves the clinic.
- Screening for **other STIs/RTIs**, including cervical infections, bacterial vaginosis and HIV, should be offered if available.
- Women should be asked at each antenatal visit about **STI symptoms** in themselves and their partner. Screening and/or treatment of **partners** should be offered, for at least symptomatic STIs, syphilis and HIV.
- **STI prevention** should be promoted during pregnancy as a way of protecting both mother and child, and of safeguarding future fertility.
- Access to counselling and testing for HIV, interventions to prevent mother-to-child-transmission, and care of the mother should be available on-site or by referral.
- Prophylaxis for **ophthalmia neonatorum** should be given routinely to all newborn babies.

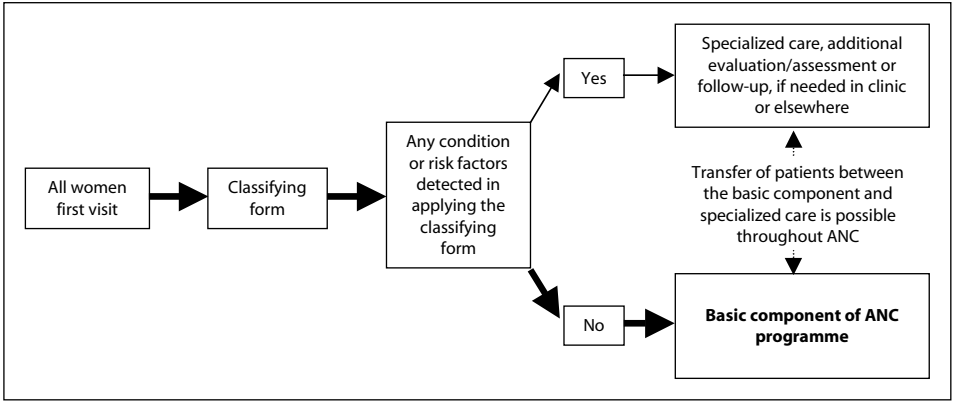
STI/RTI prevention and management are as important during pregnancy as at any other time. A woman's sexual activity may increase or decrease, and exposure to infection may change. A number of STIs—including syphilis, gonorrhoea, chlamydia, trichomoniasis, genital herpes and HIV—can cause complications 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, or 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 postabortion 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 postabortion 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. WHO recommends four antenatal care visits for women with uncomplicated pregnancy. Figure 7.1 illustrates the WHO antenatal care model, which provides a checklist for basic antenatal care services as well as tools for identifying women who need additional care.

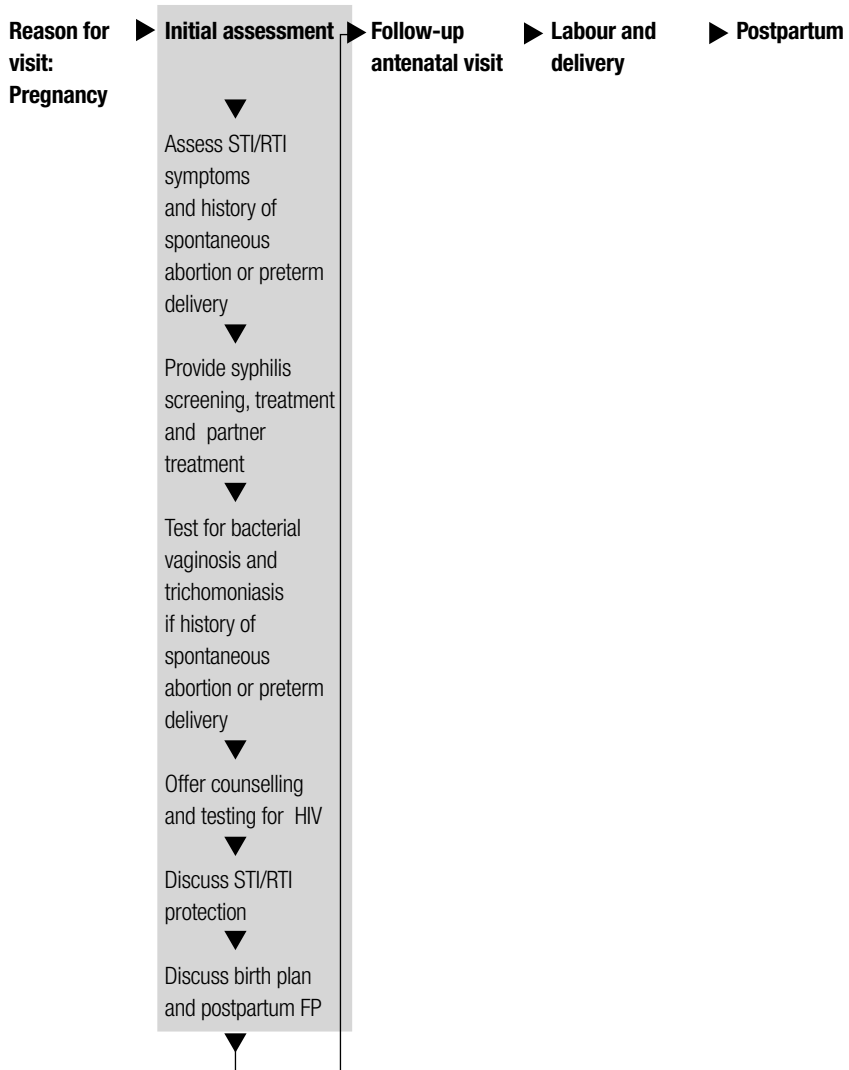
Figure 7.1. The WHO antenatal care (ANC) model



Source: *WHO antenatal randomized trial: manual for the implementation of the new model*. Geneva, World Health Organization, 2002.

Step 1: Initial assessment visit during pregnancy

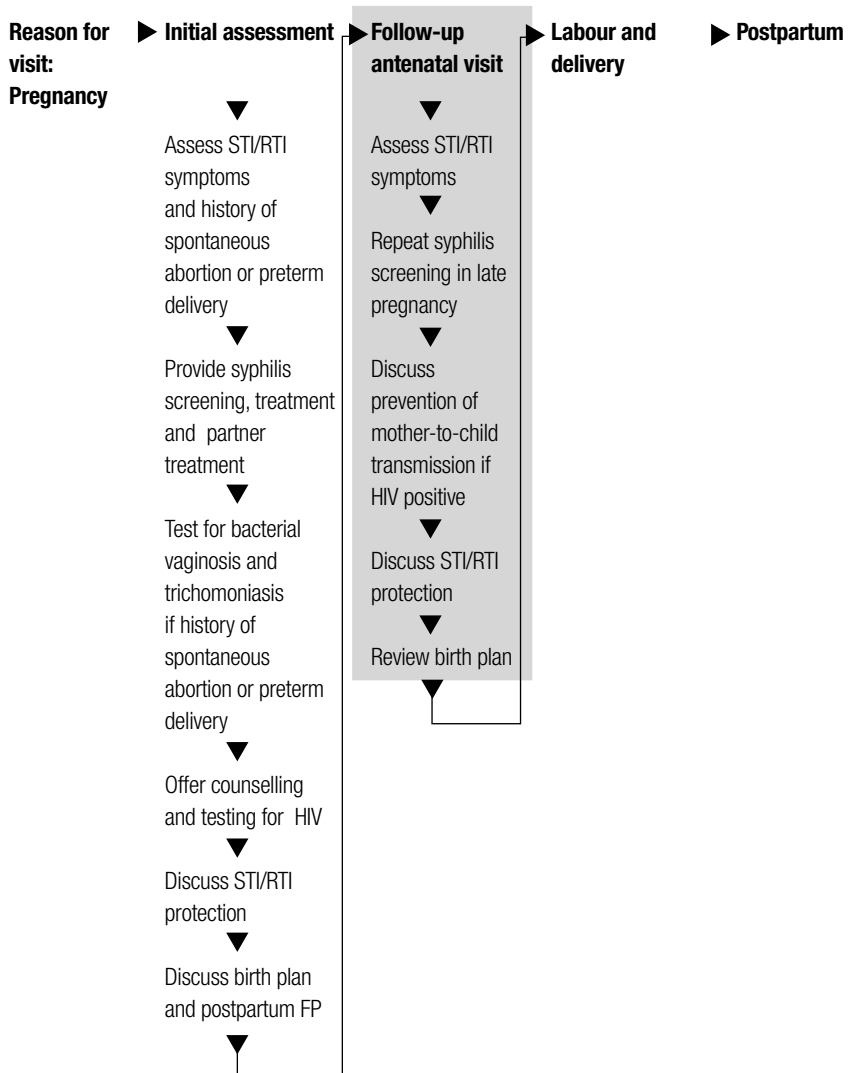
A woman may first come to the antenatal clinic any time between the first trimester and the onset of labour. She may or may not return to the clinic before delivery. It is therefore important to make the most of the first visit, and some consideration of STIs/RTIs should be included in the assessment.



The following is recommended as a minimal STI/RTI assessment at the initial antenatal visit:

- Ask the woman about symptoms of STI/RTI 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 8.
- Serological syphilis testing using RPR or equivalent non-treponemal syphilis antibody test should be carried out as early as possible in pregnancy (Chapter 3). 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) (Box 7.1).
- 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 in Chapter 8 and Chapter 9.

- Syphilis testing should be repeated in late pregnancy, if possible, to identify women infected during pregnancy (Chapter 3). All women should be tested at least once during each pregnancy, and all women with reactive serology should receive treatment (see Annex 3 for information on interpreting syphilis test results in women treated previously).
- For women who are HIV positive, management during the antenatal period will depend on the specific 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.

Box 7.1. HIV and pregnancy

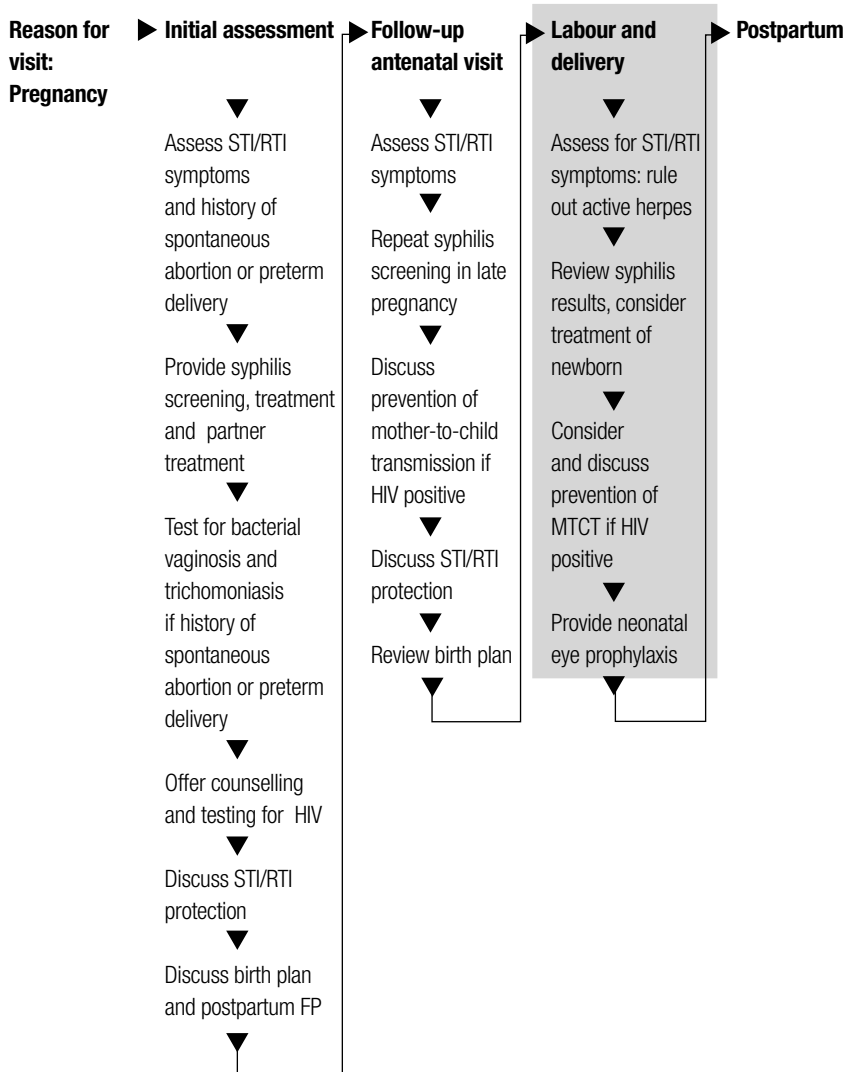
Mother-to-child transmission (MTCT) of HIV is the major cause of HIV infection in children throughout the world. Over half a million children are infected this way each year. Without intervention, up to 40% of children born to HIV-infected women will be infected. Infection can be transmitted from mother to child during pregnancy, during labour and delivery, and through breastfeeding. Prevention of MTCT should begin as early as possible in pregnancy by offering counselling and testing of the parents for HIV infection.

Routine antenatal care is similar for women who are HIV positive and for those who are uninfected. Detection and treatment of STIs/RTIs are important, since several STIs/RTIs increase the amount of HIV in genital secretions, which increases the risk of transmitting infection to the child during delivery. Careful attention should be paid to symptoms or physical examination findings suggestive of opportunistic infections or STI/RTI. Invasive procedures such as amniocentesis should be avoided.

Apart from antiviral treatment, there is no need for HIV-infected women to be treated differently than other women during labour and delivery or to be isolated. Universal precautions to reduce the risk of transmission of HIV and other infections should be used by staff for all patients, not only for those who are known to be HIV-infected (see Annex 2).

HIV-positive women require special attention in the postpartum period. They may benefit from further care, counselling and support, and may need assistance if they choose substitute infant feeding. They should be referred to care and support services.

Step 3: Labour and delivery



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 (Box 7.3).

- 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 (see Chapter 9).
- **Manage HIV-infected women** (including administration of antiretroviral treatment) according to local protocols.

Universal precautions should be followed for all deliveries (Box 7.2).

Box 7.2. 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 sterilize all instruments/equipment used in the process of delivery.
- Follow standard practice for the delivery, avoiding unnecessary vaginal examinations, minimizing 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.

Box 7.3. Prevention and management of STIs/RTIs in the newborn

1. Neonatal eye prophylaxis

All newborn babies, regardless of maternal signs or symptoms of infection, should receive **prophylaxis against ophthalmia neonatorum** due to gonorrhoea or chlamydial infection. 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

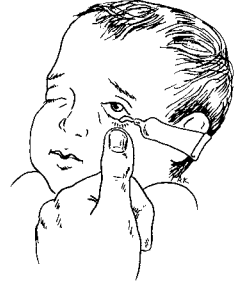
- **tetracycline** ophthalmic ointment (1%) in a single application

OR

- provide **iodine** drops 2.5% in a single application

OR

silver nitrate (1%) freshly prepared aqueous solution in a single application



2. Congenital syphilis

Syphilis test results should be reviewed at this time, and the newborn evaluated for signs of congenital syphilis. 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 managed as described in Table 7.1, regardless of whether the mother received treatment for syphilis during pregnancy. The mother and her partner should also be treated if this has not already been done.

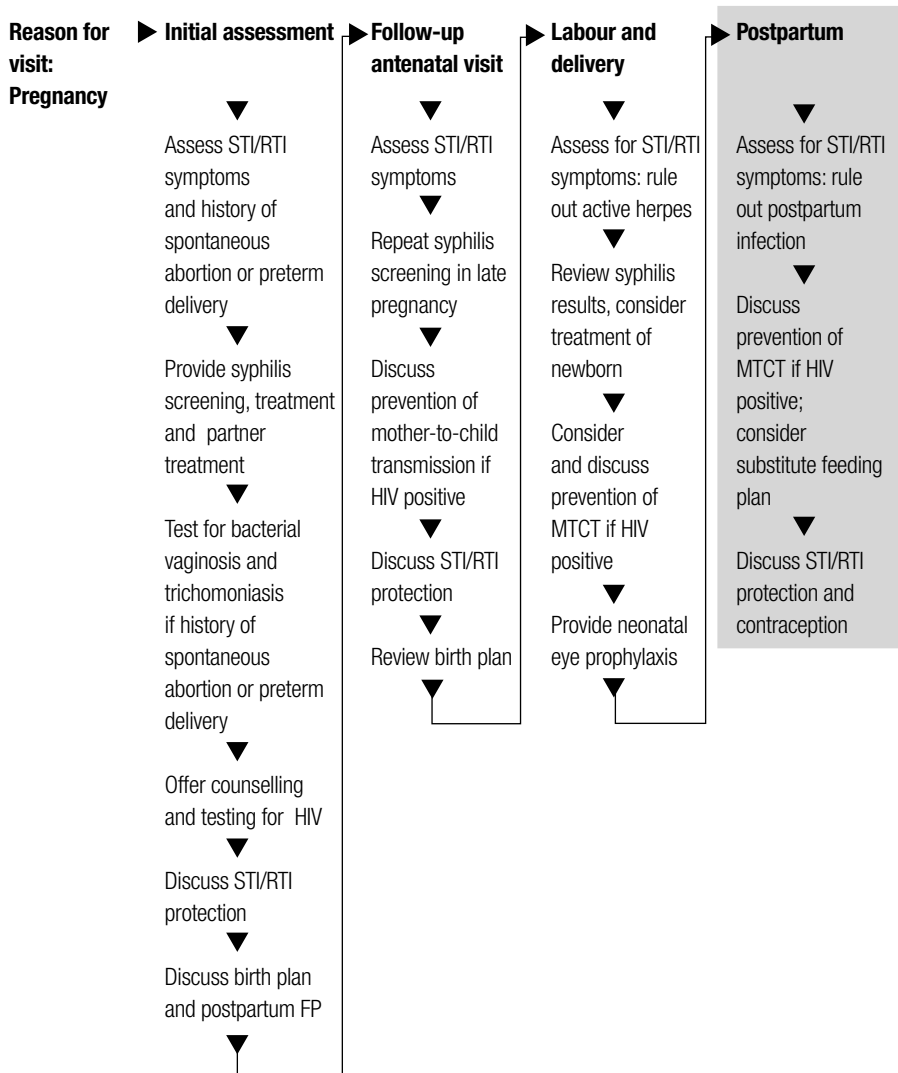
Table 7.1. Treatment of neonatal syphilis (first month of life)

		Mother's RPR/VDRL status		
		Reactive	Unknown	Non-reactive
Infant with signs of congenital syphilis^a	Treatment 1 or 2	Test mother	Repeat test	
		<i>Start treatment 1 or 2 while awaiting results (if delay expected)</i> <ul style="list-style-type: none"> ▪ If reactive, continue treatment ▪ If negative, investigate for other causes and modify treatment accordingly 		
Infant without signs of congenital syphilis^a	Treatment 3 Single injection	Test mother	No treatment	

Treatment 1	Aqueous crystalline benzylpenicillin 100 000–150 000 units/kg of body weight per day, administered as 50 000 units/kg of body weight, intramuscularly or intravenously, every 12 hours during the first 7 days of life and every 8 hours thereafter for a total of 10 days
Treatment 2	Procaine benzylpenicillin 50 000 units/kg of body weight, intramuscularly, in a single daily dose for 10 days
Treatment 3	Benzathine benzylpenicillin 50 000 units/kg of body weight, intramuscularly, in a single dose

^a. Signs of congenital syphilis: vesicular eruptions on palms or soles, hepatosplenomegaly, pseudoparalysis, oedema/ascites, fever (in first week of life), prolonged or conjugated hyperbilirubinaemia, petechiae, bleeding, syphilitic facies. Infants are often asymptomatic at birth.

Step 4: 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. Management of postpartum infection is covered in Chapter 9.

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 or abnormal bleeding. They should be given information on care of the perineum and breasts, and instructed on the safe disposal of lochia and blood-stained 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.

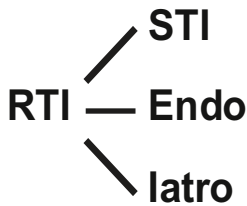
- HIV-positive women may need continued care and support, including access to treatment and support in carrying out a substitute feeding plan.
- If contraception was not discussed before delivery, it should be brought up early in the postpartum period. Planning for a suitable method should include consideration of need for STI/RTI protection (see Chapter 6). Dual protection should also be discussed with women who choose a long-term contraceptive method, such as an IUD, following delivery.

SECTION 3 MANAGEMENT OF STIs/RTIs

Section 1 presents basic information on STIs/RTIs and their complications, how they spread and what can be done about them. It also reviews the knowledge and skills that health care providers should have in order to detect and prevent STI/RTI.

Section 2 provides advice on addressing STI/RTI through the reproductive health clinic. It also looks at ways of reaching men, adolescents and others who do not typically use reproductive health services.

Section 3 deals with STI/RTI management—how to diagnose and treat STI/RTI-related problems—and includes flowcharts and treatment tables. This section is organized using a problem-oriented approach to permit rapid access to information.



CHAPTER 8. MANAGEMENT OF SYMPTOMATIC STIs/RTIs

Key points

- Women with **vaginal discharge** should be treated for the common vaginal infections (bacterial vaginosis, trichomoniasis). Treatment for yeast infection should be added if relevant clinical signs are present.
- Women with **lower abdominal pain** should be treated for gonorrhoea, chlamydia and anaerobic infection. Hospitalization or referral should be considered if infection is severe or if there are other danger 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 symptomatic patients should receive **counselling** on compliance with treatment, risk reduction, and condom use.
- Treatment should be given to **partners** of patients with genital ulcer or urethral discharge. Partners of women who are treated for PID or cervicitis should be counselled and offered treatment.
- Routine **follow-up visits** are not necessary for most syndromes, provided the patient finishes the treatment and feels better. Women treated for PID should be re-examined 2–3 days after starting treatment, or sooner if they have fever.

This chapter covers the management of STIs/RTIs in people who seek care because they have symptoms, or when a health care provider detects signs of possible infection while addressing other health care issues. A **symptom** is something that the patient notices, while a **sign** is something observed by the health care provider (see Annex 1 for a review of history-taking and physical examination). Three clinical situations are common:

- A person comes to the clinic with a **spontaneous complaint** of STI/RTI symptoms.
- A patient admits to symptoms when asked by the provider (**elicited symptoms**).
- The health care provider detects **signs** of STI/RTI when examining a patient for other reasons.

Health care providers should be able to recognize STI/RTI symptoms and signs in these different clinical situations. They should know when it is possible to tell the difference between STIs and non-sexually transmitted conditions. Women with genital tract symptoms may be concerned about STI, even though most symptomatic RTIs in women are not sexually transmitted. Providers and patients should also understand that STIs/RTIs are often asymptomatic, and that the absence of symptoms does not necessarily mean absence of infection. Screening for asymptomatic STI/RTI should be done where possible (Chapter 3).

SYNDROMIC MANAGEMENT OF STI/RTI

Many STIs/RTIs can be identified and treated on the basis of characteristic symptoms and signs. 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, however, and treatment may need to cover several possible infections.

Syndromic management refers to the approach of treating STI/RTI symptoms and signs based on the organisms most commonly responsible for each syndrome. A more definite or etiological diagnosis may be possible in some settings with sophisticated laboratory facilities, but this is often problematic. Laboratory tests require resources, add to the cost of treatment, may require clients to make extra visits to the clinic and **almost always result in delays in treatment**. For these reasons, syndromic management guidelines are widely used for syndromes such as lower abdominal pain, urethral discharge and genital ulcer (Table 8.1), even in developed countries with advanced laboratory facilities.

WHO has developed simple **flowcharts** (also called **algorithms**) to guide health care providers in using the syndromic approach to manage seven syndromes. Five of these algorithms (for vaginal discharge, lower abdominal pain, genital ulcer, inguinal bubo and urethral discharge) are included in this chapter, adapted where needed for

application in reproductive health settings. Additional algorithms dealing with STI/RTI in pregnancy are given in Chapter 9. The syndromic approach is widely used to manage STIs/RTIs. The algorithms may change from country to country depending on the prevalence of disease, the cost of drugs, and microbial resistance patterns.

Table 8.1. The syndromic approach—strengths and limitations

Syndromic algorithm	Rationale for use
Syndromic algorithms for urethral discharge in men and genital ulcers in men and women are both effective and practical.	<p>Gonorrhoea and chlamydia are among the important causes of urethral discharge. Syphilis and chancroid are among the important causes of genital ulcers.</p> <p>Properly used, these algorithms permit health care workers to provide effective treatment for symptomatic patients. They are simple and can be used even in remote areas as long as the necessary medicines are available. Equally important, syndromic management of these problems prevents new infections by providing curative treatment without delay and breaking the chain of infection.</p>
The syndromic approach to lower abdominal pain in women is widely used, even in developed countries.	<p>Gonorrhoea and chlamydia are among the important causes of lower abdominal pain in women.</p> <p>This approach is designed to offer effective treatment to women with symptoms that could indicate pelvic inflammatory disease. Health care providers should realize that some women managed with this algorithm might not actually have PID (false positives). Treatment is justified, however, because of the severe consequences—including infertility and ectopic pregnancy—that often follow PID that is left untreated or not treated early.</p>
Syndromic algorithms for women with symptoms/signs of vaginal discharge work well for vaginal infections, but not generally for cervical infections.	<p>Vaginal infection (bacterial vaginosis, trichomoniasis or yeast infection) is the main cause of vaginal discharge.</p> <p>Vaginal discharge algorithms are not designed to detect the more serious and often asymptomatic cervical infections. At present, accurate detection of gonococcal and chlamydial cervicitis requires expensive laboratory tests, which are not available in most settings (see Chapter 3 for advice on detecting cervical infections). In some special situations, treatment for cervical infection is justified.</p>

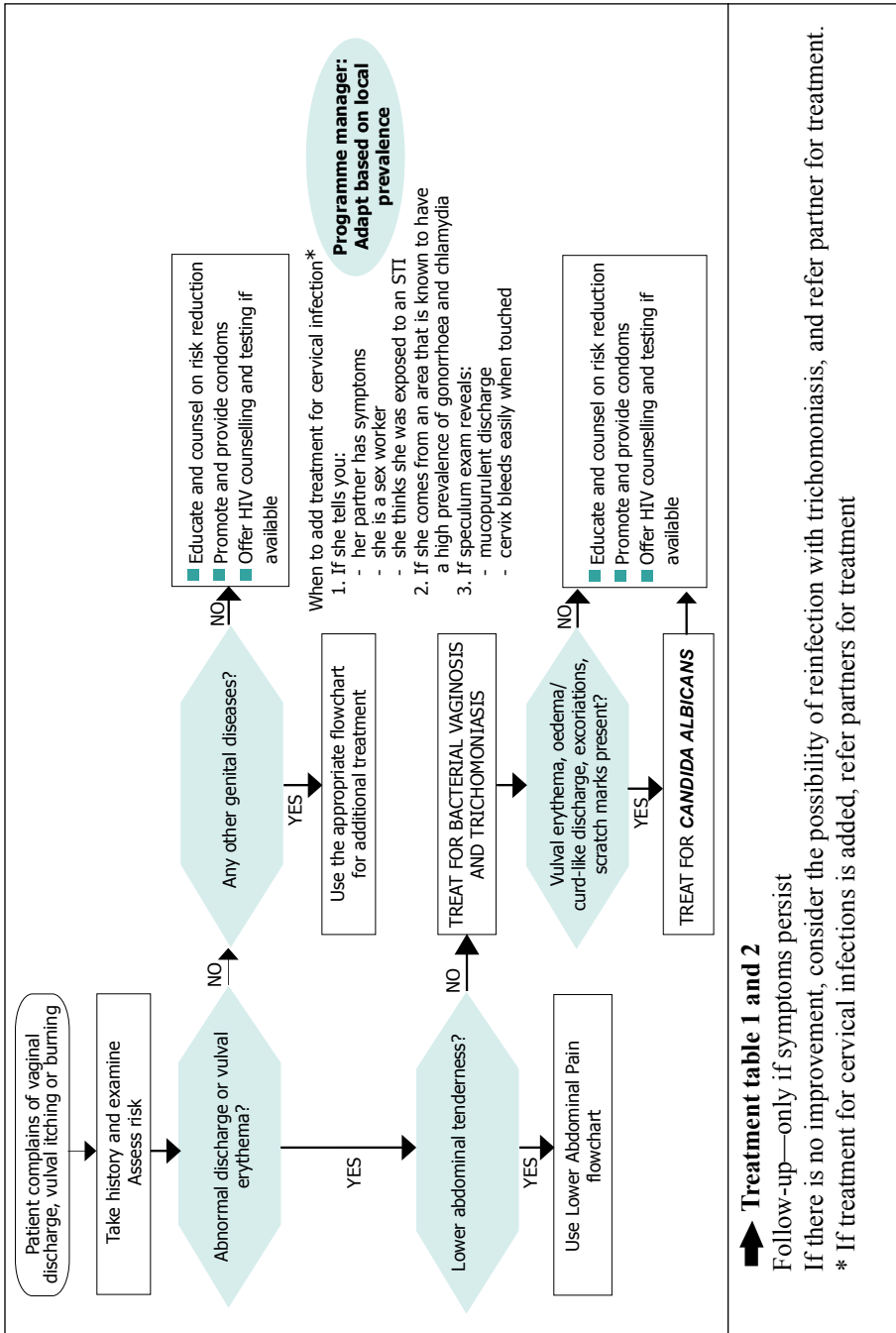
MANAGEMENT OF COMMON SYNDROMES

This section presents flowcharts for the management of several common syndromes. Successful management of STIs/RTIs includes not only treatment, but also education of the patient on how to prevent reinfection and, in some cases, treatment of sex partners. To do this effectively, health care providers must be non-judgemental and

respectful of patients. History-taking, examination and counselling must be done in appropriate surroundings where privacy and confidentiality can be guaranteed. These basic clinical skills are reviewed in Annex 1.

Patient education and, at times, more in-depth counselling for risk reduction are essential. Although these steps are not included in the flowcharts, patients should be given information on STI/RTI prevention, on completing their course of treatment, and on partner management where indicated. More information on the prevention aspects of STI/RTI case management that should be part of each encounter with symptomatic patients is given at the end of this chapter. Patient education and counselling are addressed in more detail in Chapter 4.

FLOWCHART 1. VAGINAL DISCHARGE (FOR NON-PREGNANT WOMEN)



VAGINAL DISCHARGE

A **spontaneous complaint of abnormal vaginal discharge**—abnormal in terms of quantity, colour or odour—most commonly indicates a vaginal infection or **vaginitis**. Vaginal discharge due to bacterial vaginosis (multiple organisms) or yeast infection (*Candida albicans*) is not sexually transmitted, while trichomoniasis (*Trichomonas vaginalis*) usually is. Much less often, vaginal discharge may be the result of mucopurulent **cervicitis** due to gonorrhoea (*Neisseria gonorrhoeae*) or chlamydia (*Chlamydia trachomatis*). Detection of cervical infection in women with or without vaginal discharge is discussed in Chapter 3.

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 and a separate flowchart for management of vaginal discharge in pregnant women is given in Chapter 9.

Treatment table 1. Recommended treatment for vaginal infection

<ul style="list-style-type: none"> ▪ Therapy for bacterial vaginosis and trichomoniasis PLUS ▪ Therapy for yeast infection if curd-like white discharge, vulvo-vaginal redness, and itching are present 			
Coverage	First choice Choose one from BV/TV box below, or one from each box if yeast infection is suspected	Effective substitutes	If woman is pregnant or breastfeeding Choose one from BV/TV box below, or one from each box if yeast infection is suspected
Bacterial vaginosis	metronidazole^a 2 g orally in a single dose, or metronidazole^a 400 or 500 mg orally twice a day for 7 days	clindamycin cream 2%, one full applicator (5 g) intravaginally at bedtime for 7 days, or clindamycin 300 mg orally twice a day for 7 days	<i>Preferably after first trimester</i> metronidazole^a 200 or 250 mg orally 3 times a day for 7 days, or metronidazole^a gel 0.75%, one full applicator (5 g) intravaginally twice a day for 5 days, or clindamycin 300 mg orally twice a day for 7 days
Trichomoniasis		tinidazole^a 2 g orally in a single dose, or tinidazole^a 500 mg orally twice a day for 5 days	
Candida albicans (yeast)	miconazole 200 mg vaginal suppository, one a day for 3 days, or clotrimazole^b 100 mg vaginal tablet, two tablets a day for 3 days, or fluconazole 150 mg oral tablet, in a single dose	nystatin 100 000 unit vaginal tablet, one a day for 14 days	miconazole 200 mg vaginal suppository, one a day for 3 days, or clotrimazole^b 100 mg vaginal tablet, two tablets a day for 3 days, or nystatin 100 000 unit vaginal tablet, one a day for 14 days

a. Patients taking metronidazole or tinidazole should be cautioned to avoid alcohol. Use of metronidazole is not recommended in the first trimester of pregnancy.

b. Single-dose clotrimazole (500 mg) available in some places is also effective for yeast infection (CA).

CERVICAL INFECTION

Treatment for cervical infection should be given in situations where infection seems likely or the risk of developing complications is high (see cervical infections in Chapter 3 and transcervical procedures in Chapter 2). Treatment for cervical infection should be added to the treatment for vaginitis if suspected (for example, if the patient's partner has a urethral discharge), or if signs of cervical infection (mucopurulent cervical discharge or easy bleeding) are seen on speculum examination. Treatment table 2 indicates the treatment of cervical infection.

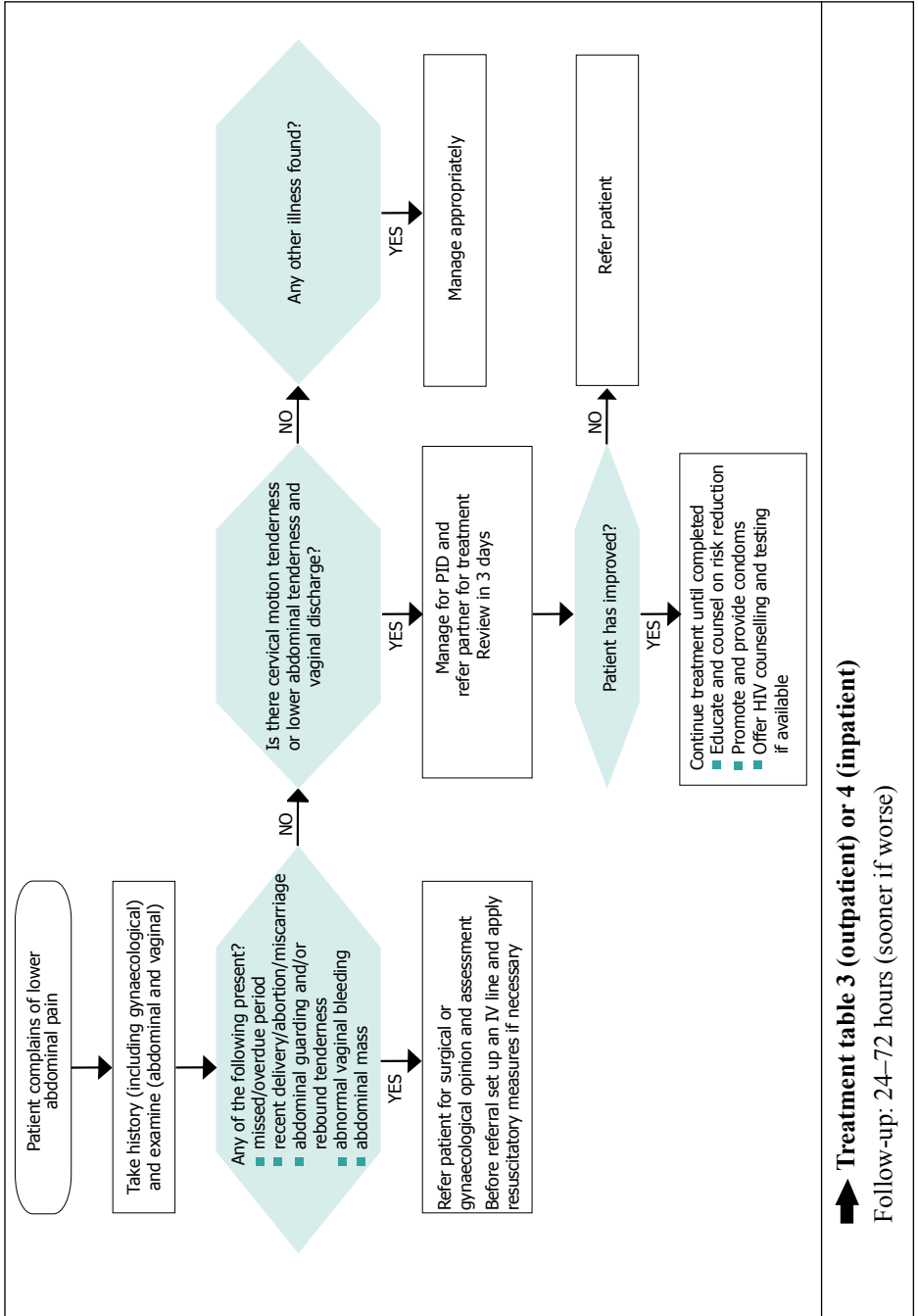
Treatment table 2. Recommended treatment for cervical infection

<ul style="list-style-type: none"> ▪ Therapy for uncomplicated gonorrhoea PLUS <ul style="list-style-type: none"> ▪ Therapy for chlamydia 			
Coverage	First choice Choose one from each box below (= 2 drugs)	Effective substitutes	If woman is pregnant, breastfeeding or under 16 years old Choose one from each box below (= 2 drugs)
Gonorrhoea	cefixime 400 mg orally as a single dose, or ceftriaxone 125 mg by intramuscular injection	ciprofloxacin ^{a,b} 500 mg orally as a single dose, or spectinomycin 2 g by intramuscular injection	cefixime 400 mg orally as a single dose, or ceftriaxone 125 mg by intramuscular injection
Chlamydia	azithromycin 1 g orally as a single dose, or doxycycline ^a 100 mg orally twice a day for 7 days	ofloxacin ^{a,b,c} 300 mg orally twice a day for 7 days, or tetracycline ^a 500 mg orally 4 times a day for 7 days, or erythromycin 500 mg orally 4 times a day for 7 days	erythromycin ^d 500 mg orally 4 times a day for 7 days, or azithromycin 1 g orally as a single dose, or amoxicillin 500 mg orally 3 times a day for 7 days

- a. Doxycycline, tetracycline, ciprofloxacin, norfloxacin and ofloxacin should be avoided in pregnancy and when breastfeeding.
- b. The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.
- c. Ofloxacin, when used as indicated for chlamydial infection, also provides coverage for gonorrhoea.
- d. Erythromycin estolate is contraindicated in pregnancy because of drug-related hepatotoxicity; only erythromycin base or erythromycin ethylsuccinate should be used.

See Annex 4 for more information on alternative treatments for gonorrhoea.

FLOWCHART 2. LOWER ABDOMINAL PAIN (IN WOMEN)



➡ **Treatment table 3 (outpatient) or 4 (inpatient)**

Follow-up: 24–72 hours (sooner if worse)

LOWER ABDOMINAL PAIN

All sexually active women presenting with lower abdominal pain should be carefully evaluated for signs of pelvic inflammatory disease. 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 (dyspareunia), 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 induration 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.

Etiological agents found in PID include *N. gonorrhoeae*, *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 table 3 and Treatment table 4.

Partners of patients with PID should be treated for gonorrhoea and chlamydia (see Treatment table 8).

Note: other causes of lower abdominal pain should be considered—e.g. acute appendicitis, urinary tract infection, ectopic pregnancy—and the history-taking and physical examination should rule out other causes.

Treatment table 3. Recommended outpatient treatment for PID

<ul style="list-style-type: none"> ▪ Single-dose therapy for gonorrhoea <p>PLUS</p> <ul style="list-style-type: none"> ▪ Single-dose or multidose therapy for chlamydia <p>PLUS</p> <ul style="list-style-type: none"> ▪ Therapy for anaerobic infections 	
Coverage	Choose one from each box (= 3 drugs)
Gonorrhoea	ceftriaxone 250 mg by intramuscular injection, or cefixime 400 mg orally as a single dose, or ciprofloxacin^a 500 mg orally as a single dose, or spectinomycin 2 g by intramuscular injection
Chlamydia	doxycycline^b 100 mg orally twice a day for 14 days, or tetracycline^b 500 mg orally 4 times a day for 14 days
Anaerobes	metronidazole^c 400–500 mg orally, twice a day for 14 days

- a. The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.
- b. These drugs are contraindicated for pregnant or breastfeeding women. PID is uncommon in pregnancy – see Chapter 9 for recommendations on management of endometritis and related infections in pregnancy and the postpartum period.
- c. Patients taking metronidazole should be cautioned to avoid alcohol. Metronidazole should also be avoided during the first trimester of pregnancy.

Note: Hospitalization of patients with acute pelvic inflammatory disease should be seriously considered when:

- a surgical emergency, such as appendicitis or ectopic pregnancy, cannot be excluded;
- a pelvic abscess is suspected;
- severe illness precludes management on an outpatient basis;
- the patient is pregnant;
- the patient is an adolescent;
- the patient is unable to follow or tolerate an outpatient regimen; or
- the patient has failed to respond to outpatient therapy.

Treatment table 4. Recommended inpatient treatment for PID

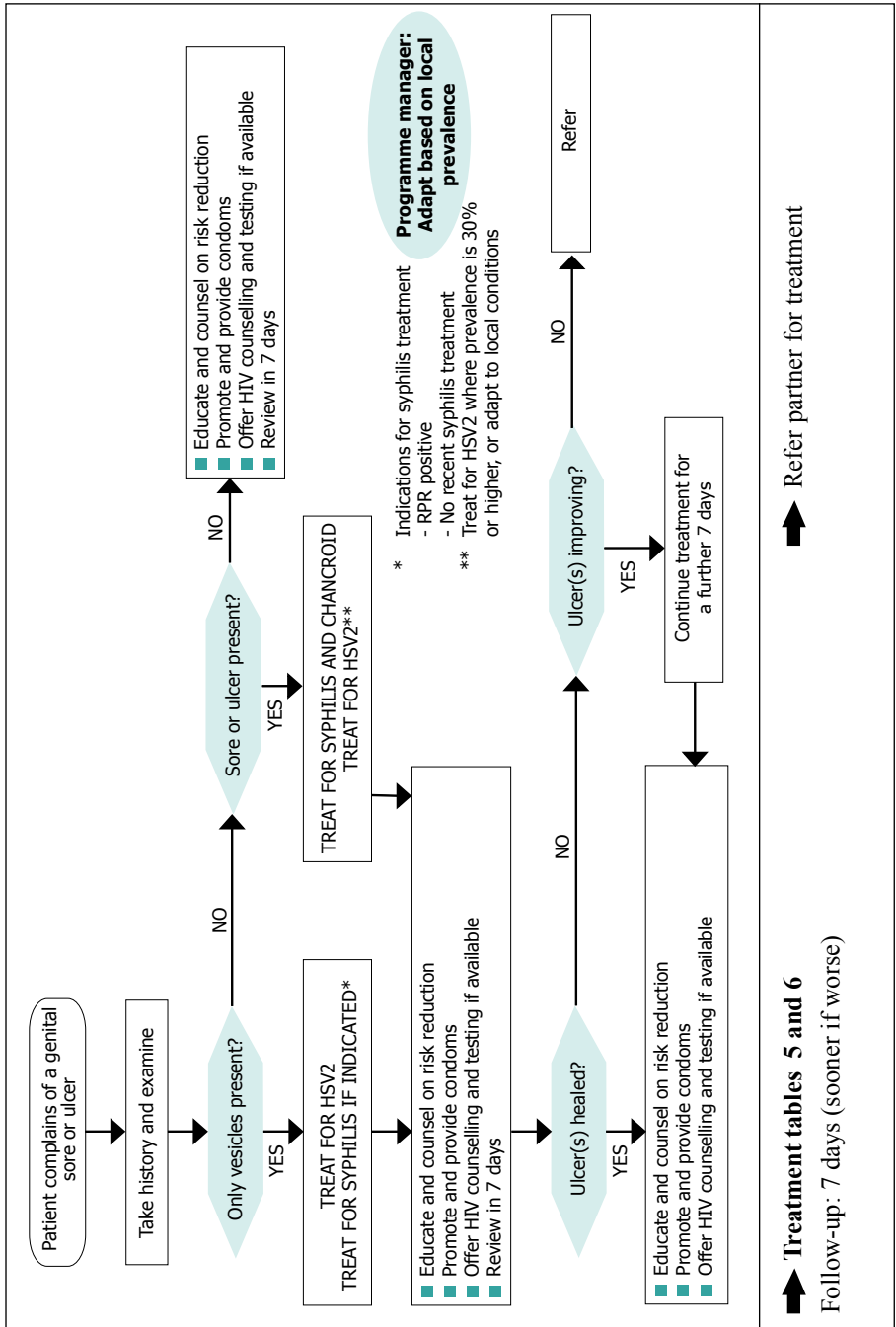
<ul style="list-style-type: none"> ▪ Therapy for gonorrhoea PLUS ▪ Therapy for chlamydia PLUS ▪ Therapy for anaerobic infections 			
Coverage	Option 1	Option 2	Option 3
	Choose one from each box (= 3 drugs), and follow with oral outpatient therapy below	Give both drugs and follow with oral outpatient therapy below	Commonly available. Give all 3 drugs plus oral outpatient therapy below
Gonorrhoea	ceftriaxone 250 mg by intramuscular injection, once a day, or ciprofloxacin ^a 500 mg orally as a single dose, or spectinomycin 2 g by intramuscular injection	gentamicin 1.5 mg/kg of body weight by intravenous injection every 8 hours PLUS clindamycin 900 mg by intravenous injection every 8 hours	ampicillin 2 g by intravenous or intramuscular injection, then 1 g every 6 hours PLUS gentamicin 80 mg by intramuscular injection every 8 hours PLUS metronidazole , 500 mg or 100 ml by intravenous infusion every 8 hours
Chlamydia	doxycycline ^{b,c} 100 mg orally or by intravenous injection, twice a day, or tetracycline ^c 500 mg orally 4 times a day		
Anaerobes	metronidazole 400–500 mg orally or by intravenous injection, twice a day, or chloramphenicol ^c 500 mg orally or by intravenous injection, 4 times a day		
<p>For all three options, therapy should be continued until at least 2 days after the patient has improved and should then be followed by one of the following oral treatments for a total of 14 days: doxycycline^c 100 mg orally twice a day, or tetracycline^c 500 mg orally 4 times a day</p>			

- a. The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.
- b. Intravenous doxycycline is painful and has no advantage over the oral route if the patient is able to take medicine by mouth.
- c. Contraindicated for pregnant or breastfeeding women. PID is uncommon in pregnancy – see Chapter 9 for recommendations on management of endometritis and related infections in pregnancy and the postpartum period.

Follow-up

Outpatients with PID should be followed up no later than 72 hours after starting treatment (24 hours for women with fever) and admitted to hospital if their condition has not improved. Patients should show substantial clinical improvement (absence of fever, reduction in abdominal tenderness, and reduction in uterine, adnexal, and cervical motion tenderness) within 3 days of starting treatment. Patients who do not improve within this period may require hospitalization, additional diagnostic tests, or surgical intervention.

FLOWCHART 3. GENITAL ULCER (FOR BOTH MEN AND WOMEN)



GENITAL ULCER

Genital ulcer disease (GUD) patterns vary in different parts of the world, but genital herpes, chancroid and syphilis are the most common. 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 appropriate to local causes should be given. For example, in areas where both syphilis and chancroid are prevalent, patients with genital ulcers should be treated for both conditions at the time of their initial presentation, to ensure adequate therapy in case they do not come back. In areas where granuloma inguinale (donovanosis) is prevalent, treatment for this should also be included. In many parts of the world, genital herpes has become the most frequent cause of genital ulcer disease. Where HIV infection is prevalent, an increasing proportion of cases of genital ulcer disease is likely to be 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. In places where these drugs are scarce, treatment should be reserved for patients with severe HSV-2 or herpes zoster infection, both of which are often associated with HIV infection (Box 8.1).

Laboratory-assisted differential diagnosis of GUD is rarely helpful at the initial visit and may even be misleading. In areas of high prevalence of syphilis, a person may have a reactive serological test from a previous infection, even when chancroid or herpes is the cause of the present ulcer.

MANAGEMENT OF GENITAL ULCER DISEASE

- Treat for syphilis and chancroid.
- Provide genital herpes management, including HSV-2 treatment, where HSV-2 prevalence is 30% or greater.
- Depending on local epidemiological patterns, add treatment for granuloma inguinale (donovanosis) and/or lymphogranuloma venereum.
- Advise on basic care of the lesion (keep clean and dry).
- Aspirate any fluctuant glands (surgical incision should be avoided).
- Educate and counsel on compliance with treatment and risk reduction.
- Promote and provide condoms.
- Offer HIV serological testing where appropriate facilities and counselling are available.

- Advise the patient to return in 7 days if the lesion is not fully healed, and sooner if the clinical condition becomes worse.
- Assist with partner treatment.

Treatment table 5. Recommended treatment for genital ulcers

<ul style="list-style-type: none"> ▪ Single-dose therapy for syphilis PLUS <ul style="list-style-type: none"> ▪ Single-dose or multidose therapy for chancroid 			
Coverage	First choice Choose one from each box below (= 2 drugs)	Effective substitutes	If patient is pregnant, breastfeeding or under 16 years old Choose one from each box below (= 2 drugs)
Syphilis	benzathine penicillin 2.4 million units by single intramuscular injection Note: patients with a positive syphilis test and no ulcer, administer the same dose at weekly intervals for a total of 3 doses	doxycycline^c 100 mg orally twice a day for 14 days, or tetracycline^c 500 mg orally 4 times a day for 14 days	benzathine penicillin 2.4 million units by single intramuscular injection, or erythromycin^b 500 mg orally 4 times a day for 15 days
Chancroid	ciprofloxacin^a 500 mg orally twice a day for 3 days, or azithromycin 1 g orally as a single dose, or erythromycin^b 500 mg orally 4 times a day for 7 days	ceftriaxone 250 mg as a single intramuscular injection	erythromycin^b 500 mg orally 4 times a day for 7 days, or azithromycin 1 g orally as a single dose, or ceftriaxone 250 mg as a single intramuscular injection

continued overleaf

Treatment table 5. Recommended treatment for genital ulcers (continued)

Additional therapy for HSV-2 where HSV-2 is common (see Flowchart 3).			
Genital herpes	Primary infection acyclovir^c 200 mg orally 5 times a day for 7 days, or acyclovir^c 400 mg orally 3 times a day for 7 days	Primary infection famciclovir^c 250 mg orally 3 times a day for 7 days, or valaciclovir^c 1 g twice a day for 7 days	Use acyclovir only when benefit outweighs risk (see Annex 4). Dosage is the same as for primary infection.
	Recurrent infection acyclovir^c 200 mg orally 5 times a day for 5 days, or acyclovir^c 400 mg orally 3 times a day for 5 days	Recurrent infection famciclovir^c 125 mg orally 3 times a day for 5 days, or valaciclovir^c 500 mg twice a day for 5 days	

- The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.
 - Erythromycin estolate is contraindicated in pregnancy because of drug-related hepatotoxicity; only erythromycin base or erythromycin ethylsuccinate should be used.
 - These drugs are contraindicated for pregnant or breastfeeding women.
- See Treatment table 6 for additional GUD treatment that may be needed in some regions.

Treatment table 6. Recommended additional treatment for genital ulcers

In areas where granuloma inguinale or lymphogranuloma venereum are important causes of genital ulcers, the following treatments can be added (or, in some cases, the treatments given in Treatment table 5 can be chosen to cover these infections)			
Coverage	First choice	Effective substitutes	If patient is pregnant, breastfeeding or under 16 years old
Granuloma inguinale (donovanosis) (treatment should be continued until all lesions have completely epithelialized)	azithromycin 1 g orally as a single dose followed by 500 mg once a day, or doxycycline^a 100 mg orally twice a day	erythromycin^b 500 mg orally 4 times a day, or tetracycline^a 500 mg orally 4 times a day, or trimethoprim (80 mg)/sulfamethoxazole (400 mg) , 2 tablets orally twice a day	azithromycin 1 g orally as a single dose, or erythromycin^b 500 mg orally 4 times a day
Lymphogranuloma venereum	doxycycline^a 100 mg orally twice a day for 14 days, or erythromycin^b 500 mg orally 4 times a day for 14 days	tetracycline^a 500 mg orally 4 times a day for 14 days	erythromycin^b 500 mg orally 4 times a day for 14 days

- These drugs are contraindicated for pregnant or breastfeeding women.
- Erythromycin estolate is contraindicated in pregnancy because of drug-related hepatotoxicity; only erythromycin base or erythromycin ethylsuccinate should be used.

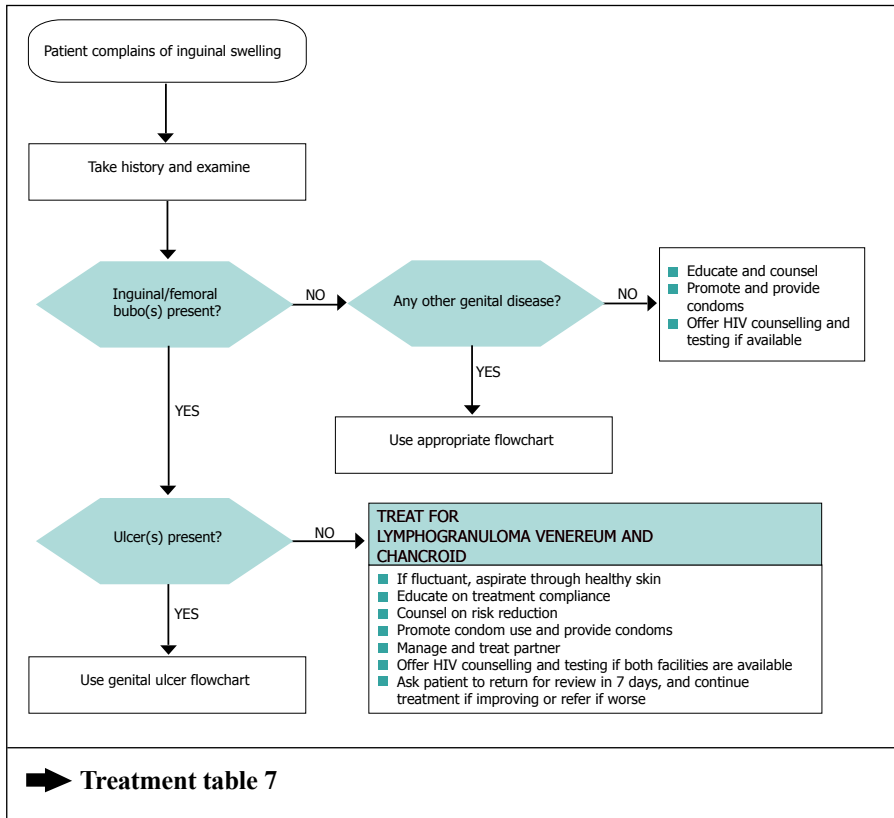
Box 8.1. Genital ulcers and HIV infection

Genital ulcers facilitate the spread of HIV more than other STIs/RTIs. Chancroid, genital herpes and syphilis are common in regions where HIV prevalence is high, and control of these infections is an important component of HIV prevention.

The presence of HIV infection may also change the presentation of genital ulcers making their diagnosis more difficult. Lesions of primary and secondary syphilis may be atypical. Chancroid lesions may be more extensive, and rapidly aggressive lesions have been noted. This reinforces the need for early treatment, especially in HIV-infected individuals. Treatment of genital ulcers is the same for HIV-positive and HIV-negative patients. All patients should be seen one week after starting treatment, and treatment should be continued if significant improvement is not apparent.

Herpes simplex lesions may present as persistent multiple ulcers that require medical attention. Antiviral treatment may reduce symptoms. The nature and purpose of treatment should be properly explained to the patient in order to avoid false expectations of cure.

FLOWCHART 4. INGUINAL BUBO (IN MEN AND WOMEN)



INGUINAL BUBO

Inguinal and femoral buboes are localized 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. Treatment table 7 is for patients with inguinal bubo but without genital ulcer. Non-sexually-transmitted local and systemic infections (e.g. infections of the lower limb) can also cause swelling of inguinal lymph nodes.

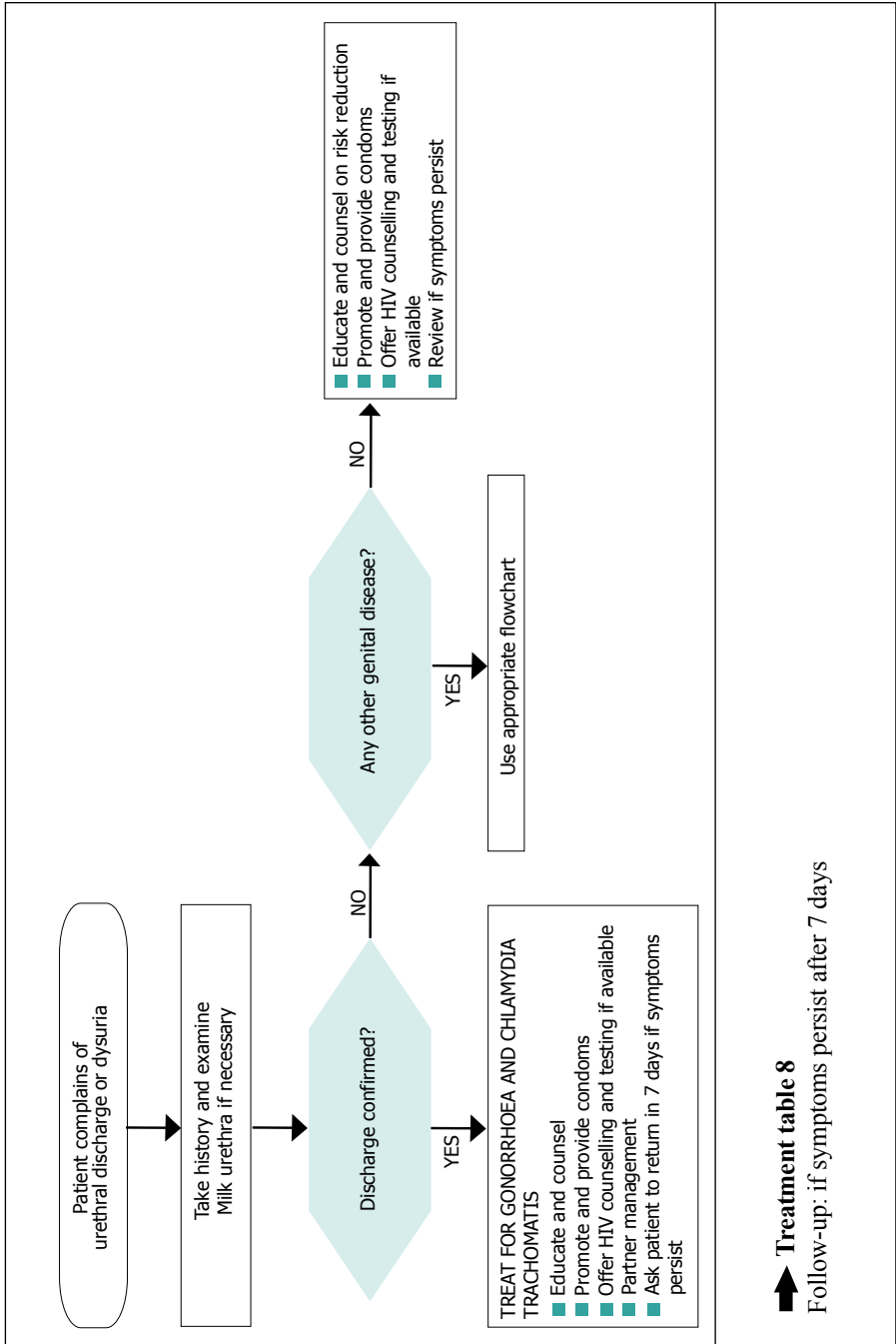
Treatment table 7. Recommended treatment for inguinal bubo

<ul style="list-style-type: none"> ▪ Single-dose or multidose therapy for chancroid PLUS ▪ Multidose therapy for lymphogranuloma venereum (LGV) 			
Coverage	First choice Choose one from each box (= 2 drugs)	Effective substitutes	If patient is pregnant, breastfeeding or under 16 years old
Chancroid	ciprofloxacin ^{a,b} 500 mg orally twice a day for 3 days, or erythromycin ^c 500 mg orally 4 times a day for 7 days	azithromycin 1 g orally as a single dose, or ceftriaxone 250 mg as a single intramuscular injection	erythromycin ^c 500 mg orally 4 times a day for 14 days (covers both chancroid and LGV)
LGV	doxycycline ^a 100 mg orally twice a day for 14 days	tetracycline ^a 500 mg orally 4 times a day for 14 days	

- a. These drugs are contraindicated for pregnant or breastfeeding women.
- b. The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.
- c. Erythromycin estolate is contraindicated in pregnancy because of drug-related hepatotoxicity; only erythromycin base or erythromycin ethylsuccinate should be used.

Note: Some cases may require longer treatment than the 14 days recommended. Fluctuant lymph nodes should be aspirated through healthy skin. Incision and drainage or excision of nodes may delay healing and should not be attempted.

FLOWCHART 5. URETHRAL DISCHARGE (IN MEN)



➡ Treatment table 8

Follow-up: if symptoms persist after 7 days

URETHRAL DISCHARGE

Male patients complaining of urethral discharge or pain on urinating (dysuria) should be examined for evidence of discharge. 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 gonorrhoeae* 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 (Treatment table 2).

Treatment table 8. Recommended treatment for urethral discharge (males only)

<ul style="list-style-type: none"> ▪ Therapy for uncomplicated gonorrhoea PLUS ▪ Therapy for chlamydia 		
Coverage	First choice Choose one from each box below (= 2 drugs)	Effective substitutes
Gonorrhoea	cefixime 400 mg orally as a single dose, or ceftriaxone 125 mg by intramuscular injection	ciprofloxacin ^a 500 mg orally as a single dose, or spectinomycin 2 g by intramuscular injection
Chlamydia	azithromycin 1 g orally as single dose, or doxycycline 100 mg orally twice a day for 7 days	ofloxacin ^{a,b} 300 mg orally twice a day for 7 days, or tetracycline 500 mg orally 4 times a day for 7 days, or erythromycin 500 mg orally 4 times a day for 7 days

a. The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.

b. Ofloxacin, when used as indicated for chlamydial infection, also provides coverage for gonorrhoea.

Epididymitis is an occasional complication of untreated urethral infection. Symptoms are abrupt onset of one-sided testicular pain and swelling (differential diagnosis is also testicular torsion which must be ruled out and which is an emergency).

Scrotal swelling in men under 35 is commonly a complication of RTI and can be treated in the same way as urethral discharge. It is important to recognize 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.

MANAGEMENT OF OTHER STIs/RTIs

Other common STIs/RTIs include anogenital warts, and infestations such as pubic lice and scabies. Available treatments for these conditions can be found in Treatment table 9 and Treatment table 10. See *Guidelines for the management of sexually transmitted infections* (Geneva, World Health Organization, 2001) for more details on management of these and other syndromes.

Treatment table 9. Recommended treatment for anogenital warts

Patient-applied ^a	Provider-administered
podophyllotoxin^b 0.5% solution or gel by a cotton-tipped swab twice a day for 3 days followed by 4 days of no treatment. The cycle can be repeated up to 4 times. The total amount of podophyllotoxin should not exceed 0.5 ml per day.	podophyllin^b 10–25% in compound tincture of benzoin, applied carefully to the warts, avoiding normal tissue. External genital and perianal warts should be washed thoroughly 1–4 hours after application of podophyllin. Podophyllin applied to warts on vaginal or anal epithelial surfaces should be allowed to dry before the speculum is removed. Treatment should be repeated at weekly intervals.
imiquimod^b 5% cream applied with a finger at bedtime, left on overnight, 3 times a week for as long as 16 weeks. (The treatment area should be washed with soap and water 6–10 hours after application.)	trichloroacetic acid (TCA) (80–90%) applied carefully to the warts avoiding normal tissue followed by powdering of the treated area with talc or sodium bicarbonate (baking soda) to remove unreacted acid. Repeat application at weekly intervals.

- a. “Patient-applied”: refers to self-treatment of external anogenital warts that can be identified and reached by the patient. The first treatment must be applied by the prescribing provider.
- b. Should not be used in pregnancy.

Genital warts can also be treated by cryotherapy, electrosurgery or surgical removal. The choice of method will depend on what is available and on the anatomical location of the warts. With all chemical methods, care should be taken to protect healthy tissue. Cervical warts should be managed together with a specialist who can evaluate for cervical dysplasia with Pap smear or other tests. Patients should be advised that warts often reappear even after treatment.

Treatment table 10. Recommended treatment of scabies and pubic lice

Scabies	Pubic lice
<p>lindane^a 1% lotion or cream, applied thinly to all areas of the body from the neck down and washed off thoroughly after 8 hours. Resistance to lindane has been reported in some areas</p>	<p>lindane^a 1% lotion or cream, rubbed gently but thoroughly into the infested area and adjacent hairy areas and washed off after 8 hours; as an alternative, lindane 1% shampoo, applied for 4 minutes and then thoroughly washed off</p>
<p>benzyl benzoate 25% lotion, applied to the entire body from the neck down, nightly for 2 nights; patients may bathe before reapplying the product and should bathe 24 hours after the final application</p>	<p>pyrethrins 1% plus piperonyl butoxide 10% shampoo applied to the infested and adjacent hairy areas and washed off after 10 minutes; re-treatment is indicated after 7 days if lice are found or eggs are observed at the hair–skin junction</p>
<p>permethrin 5% cream applied to the entire body from the neck down, nightly for 3 nights; patients may bathe before reapplying the product and should bathe 24 hours after the final application</p>	<p>permethrin 1% lotion or cream, as for pyrethrins above</p>
<p>crotamiton 10% lotion, applied to the entire body from the neck down, nightly for 2 nights; washed off thoroughly 24 hours after the second application; an extension to 5 nights may be necessary in some geographical locations (crotamiton has the advantage of an antipruritic action)</p>	
<p>sulfur 6% in petrolatum applied to the entire body from the neck down, nightly for 3 nights; patients may bathe before reapplying the product and should bathe 24 hours after the final application</p>	

^a Lindane is not recommended for pregnant or breastfeeding women.

Scabies and pubic lice are easily transmitted between sex partners. They are often transmitted in other ways—through infested bedclothes (fomites) or close body contact—so care must be taken not to stigmatize patients. Especially for people living at close quarters, treatment of the entire household is advised. All clothing, sheets and towels should be washed, preferably in very hot water, and dried well.

STI CASE MANAGEMENT AND PREVENTION OF NEW INFECTIONS

Many of the above conditions are sexually transmitted and additional steps are required for effective management. Prompt and effective management of STIs reduces the chance of complications for the individual and prevents new infections in the community.

STI case management includes more than diagnosis and treatment. Even when STIs are correctly treated, treatment failure or reinfection commonly occurs. Some people stop taking their medicines as soon as they start to feel better; or they fail to arrange for their sex partners to be treated; or they do not use condoms or abstain from sex during treatment. Drug resistance may also be a reason for treatment failure. Good STI management must always address these issues.

TREATMENT COMPLIANCE

For treatment of STI to be effective, a full curative dose must be taken (this is also true for non-sexually transmitted RTI). Single-dose treatments thus have an important advantage over multidose treatments which must be taken over several days.

When single-dose treatment is not available, health care providers should convince patients of the importance of taking all the medicine prescribed. Patients should be told to finish all the medicine even if they feel better after a few days. They should be warned not to share medicines with others or save pills for a later time. Local chemists should be advised not to sell partial doses of antibiotics to patients who cannot afford to purchase a full treatment dose. If treatment is not provided free for patients at the clinic, try to find solutions for patients who cannot afford to purchase the necessary medicines.

Patients should be advised to avoid unprotected sex until they (and any partners) have completed treatment and are free of symptoms. When single-dose treatments are given, they should wait one week. The following is some additional advice related to specific syndromes:

- Patients with ulcers should be re-examined weekly and advised to wait until ulcers have healed (re-epithelialized) before resuming sexual activity.
- Women treated for PID should avoid sexual intercourse during treatment or use condom.
- Women treated for bacterial vaginosis or candidiasis can resume intercourse as soon as they feel comfortable.

COUNSELLING AND EDUCATION ABOUT STI

People may be more likely to adopt safer sexual behaviour following treatment for an STI. Health care providers should thus make the most of each clinic visit as an opportunity to promote prevention. By discussing the likely circumstances in which the STI may have been acquired, patients can be encouraged to consider safer behaviour that might protect them from infection in the future. Counselling on prevention should always include discussion of the complications of STIs—including infertility and increased risk of HIV infection—as well as condom promotion, demonstration of how to put on a condom and advice on safer sex (Chapter 4).

PARTNER MANAGEMENT (NOTIFICATION, REFERRAL AND TREATMENT)

A person who is successfully treated for an STI will experience relief of symptoms, but may return later with a reinfection if sexual partners are not also treated. Such partners may or may not have symptoms and, if untreated, may continue to spread infection to others in the community. It is thus extremely important to find ways to help patients notify their partners and arrange for treatment (partners may include not only current partner(s) but all partners within the last three months).

There are several ways that health care facilities can assist with partner notification:

- Patients can be encouraged to contact their sexual partners themselves. They can be given referral slips for their partners that explain how to arrange a clinic visit. The simplest type of referral slip (see example below) includes information (a diagnosis or code) to indicate the syndrome diagnosed in the index patient (the original patient who had symptoms). Other information that may be useful for monitoring partner referral rates is the record number of the index patient. (Note that any information referring to the index patient should always be coded to protect confidentiality.)
- Clinic or health department staff with special training in contact-tracing techniques can notify partners and arrange for necessary treatment.
- A two-step strategy can be used where patients are first asked to contact partners themselves. If unsuccessful after 1–2 weeks, clinic or health department staff attempt to trace the contact for treatment.
- Regardless of the notification strategy, clinics should ensure that partners have easy access to treatment. This may mean finding ways to avoid long waiting times and waiving normal clinic fees. This is important because many asymptomatic partners are reluctant to wait or pay for services when they feel healthy.

Coupon for a free examination	
Present to clinic	_____
Code	_____
Date	_____

In general, partners should be treated for the same STI as the index patient, whether or not they have symptoms or signs of infection.

Not all RTIs are sexually transmitted, however, and this can complicate matters. Care must be taken not to mislabel or stigmatize someone as having an STI when the diagnosis is not clear. Women with vaginal discharge, for instance, usually have endogenous vaginal infection that is not related to STI. Attempting to notify and treat sexual partners would be both unnecessary (partners do not need treatment) and potentially damaging to their relationship—distrust, violence and divorce are possible consequences of partner notification. Health care providers should therefore be as sure as possible about the presence of an STI before notifying and treating partners, and should recognize that other explanations are possible for most RTI symptoms. Table 8.2 summarizes partner management and counselling messages for common STI/RTI syndromes.

Table 8.2. Partner notification management strategies by syndrome

Syndrome	Possible explanations	Partner management	Treatment tables	Counselling message
Genital ulcer	STI very likely	Treat partners for GUD	5/6	STI prevention counselling
Urethral discharge (men)	STI very likely	Treat partners for cervical infection (gonorrhoea and chlamydia)	2	STI prevention counselling
Lower abdominal pain	PID, often STI. But other genitourinary or gastrointestinal causes possible	Treat partners for urethral discharge (gonorrhoea and chlamydia)	8	Partner treatment a precaution to reduce complications and preserve fertility
Vaginal discharge	Endogenous (non-STI) infection most likely	No partner treatment unless relapse (then give treatment for trichomoniasis)	1	Usually not sexually transmitted

Special care is required in notifying partners of women with lower abdominal pain who are being treated for possible pelvic inflammatory disease. Because of the serious potential complications of PID (infertility, ectopic pregnancy), partners should be treated to prevent possible reinfection. It should be recognized, however, that the diagnosis of PID on clinical grounds is inaccurate, and the couple should be adequately counselled about this uncertainty. It is usually better to offer treatment as a precaution to preserve future fertility than to mislabel someone as having an STI when they may not have one.

Which sexual partners should be notified and offered treatment? This depends on the incubation period of the STI, the duration of symptoms and the stage of disease. General guidelines for some common STI syndromes and specific STIs are presented in Table 8.3.

Table 8.3. Recommended partner treatment schedule

STI/RTI	Treat all partners in past ^a ...	By syndrome
Chancroid	10 days	
LGV	1 month	GUD—3 months
Syphilis—primary	3 months	
Syphilis—secondary	6 months	
Syphilis—latent	1 year	
Gonorrhoea	3 months	Cervical infection or urethral discharge—
Chlamydia	3 months	2 months
Trichomoniasis	Current partner	Vaginal discharge—current partner only if no improvement after treatment. If partner is symptomatic, treat patient and partner using the syndromic approach.
Yeast infection	Current partner	
PID	2 months	Lower abdominal pain—2 months

^a These periods are estimates only and providers should keep an open mind. In most cases where the infection is likely to be sexually transmitted, the last sexual partner should be treated even if the last sexual contact was outside the likely period of infection.

FOLLOW-UP VISITS, TREATMENT FAILURE AND REINFECTION

Are follow-up visits really necessary? It can be useful for health care providers to see some patients again, to find out whether treatment relieved symptoms and achieved a clinical cure. Routine follow-up visits can be an inconvenience for patients, however, and an unnecessary burden on busy clinic staff. Syndromic management provides effective treatment for the most common STIs/RTIs and most patients will get better quickly. It is usually not necessary to have them come back just for a “check up” if they have taken their medicine and are feeling better. However, it is a good idea to advise patients to come back if no improvement is seen after a week of treatment (2–3 days for PID). Patients with genital ulcers should be encouraged to return after 7 days, because ulcers often take longer to heal (treatment should be extended beyond 7 days if ulcers have not epithelialized—formed a new layer of skin over the sore).

When patients with an STI/RTI do not get better, it is usually because of either treatment failure or reinfection. Try to decide which by asking the following questions:

Treatment failure

- Did you take all your medicines as directed?
- Did you share your medicine with anyone, or stop taking medicines after feeling some improvement?

Also consider the possibility of drug resistance. Was treatment based on the national treatment guidelines? Are cases of treatment failure increasing?

Reinfection

- Did your partner(s) come for treatment?
- Did you use condoms or abstain from sex after starting treatment?

Recurrence is also common with endogenous vaginal infections, especially when underlying reasons (douching, vaginal drying agents, hormonal contraceptives) are not addressed. See Chapter 2 for more information on ways to prevent endogenous infections.

Box 8.2 may help you decide what to do in those cases where symptoms do not improve. **Remember, flowcharts are not perfect—some patients may need to be referred.**

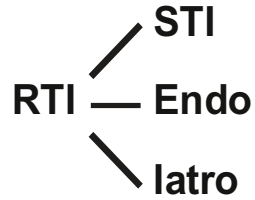
Box 8.2. Treatment failure or reinfection—what to do at the follow-up visit

Syndrome	Follow-up interval	If treatment failure suspected ^a	If reinfection or recurrence is likely ^b
Vaginal discharge	Some improvement usually seen within few days for vaginitis. Symptoms should be gone within one week. Note: BV is often recurrent.	Retreat patient. Re-examine and consider treating for yeast infection or cervical infection if these were not treated at the first visit.	Re-treat patient and treat partner for trichomoniasis. Tell patient with recurrent BV to avoid douching and vaginal drying agents. Pregnancy, diabetes or HIV infection may be factors in repeat yeast infection; antibiotics and, sometimes, oral contraceptive use may also be factors.
Lower abdominal pain	Follow up in 2–3 days (earlier if symptoms get worse). Some improvement usually seen within 1–2 days for PID. It may take a few weeks to feel better (chronic PID may cause pain for years).	Consider hospitalization for intravenous treatment. Extend duration of treatment if improvement but symptoms persist.	Women should be advised to abstain from sex during treatment for acute PID. Partners should be treated for gonorrhoea and chlamydia.

Box 8.2. Treatment failure or reinfection—what to do at the follow-up visit (continued)

Syndrome	Follow-up interval	If treatment failure suspected^a	If reinfection or recurrence is likely^b
Genital ulcer	Improvement usually seen within 1 week for GUD. Complete healing may take a few weeks.	Extend duration of treatment if improvement but symptoms persist. Treatment for other GUD (HSV-2, granuloma inguinale, lymphogranuloma venereum) may be needed.	Partners should be treated for chancroid and syphilis.
Urethral discharge	Rapid improvement usually seen within a few days. Symptoms should be gone within 1 week.	Make sure that treatment for both gonorrhoea and chlamydia was given. If compliance was poor, treat again. Treatment failure unlikely for gonorrhoea if effective single-dose treatment used. In some areas, trichomoniasis is an important cause of urethral discharge → consider treatment.	Partners should be treated for gonorrhoea and chlamydia. Include partner treatment.
Inguinal bubo	Improvement usually seen within 1 week. It may take a few weeks for complete healing.	Follow-up visits every 1–2 days may be needed to drain bubo.	Partners should be treated for chancroid and lymphogranuloma venereum.

- a. For treatment failure, consider re-treatment with another treatment option. Refer if symptoms persist.
- b. For re-exposure during treatment, consider re-treatment with same antibiotics. Refer if symptoms persist.



CHAPTER 9.

STI/RTI COMPLICATIONS RELATED TO PREGNANCY, MISCARRIAGE, INDUCED ABORTION, AND THE POSTPARTUM PERIOD

Key points

- Infection in pregnancy, following miscarriage, induced abortion or in the postpartum period, can be life-threatening and must be managed aggressively and without delay.
- Patients with infectious **complications of induced abortion** (safe or unsafe) should be treated with intravenous fluids and antibiotics, and referred immediately if emergency management cannot be provided on-site.
- Infection in pregnancy can provoke **preterm labour** and serious complications for mother and fetus. Prevention and early management are key to reducing morbidity and mortality.
- Patients with **postpartum infection** should be treated with intravenous fluids and antibiotics, and referred immediately if emergency management cannot be provided on-site.
- **Vaginal discharge** in pregnancy may mask signs of abortion complications, rupture of membranes or postpartum infection. If there is no evidence of blood or amniotic fluid, treatment should be given to cover yeast infection, trichomoniasis and bacterial vaginosis.
- Activities to prevent postpartum infection include prevention and detection of STI/RTI during pregnancy (Chapter 2 and Chapter 3) and good delivery practice.

Chapter 7 discussed STIs/RTIs in the context of routine care of women during pregnancy, childbirth and the postpartum period. This chapter looks at some important STI/RTI-related problems that can occur during or following pregnancy, and addresses the management of infectious complications that can occur in such situations. Management of **miscarriage, complicated induced abortion** (endometritis, septic abortion), and **postpartum infection** (endometritis, puerperal sepsis) is emphasized because these are among the most serious conditions that affect women's health during their reproductive years, and are largely preventable.

While this chapter focuses on STI/RTI management, infection may not be the woman's chief concern or reason for her visit to the clinic. Women with abortion complications or postpartum infection often present with bleeding and pain, and may be in shock. **Other WHO guidelines¹ provide guidance on comprehensive management including assessing and stabilizing patients, and starting intravenous fluids and antibiotics.** Once stabilized, the patient should be referred to a centre that can provide appropriate emergency services.

Advice on preventing infection when performing medical and obstetrical procedures is given in Chapter 2.

INFECTION IN EARLY PREGNANCY

Upper genital tract infection is different in pregnant than in non-pregnant women. Women with pre-existing pelvic inflammatory disease have difficulty becoming pregnant—acute infection in the uterus interferes with fertilization and implantation of the ovum, while established PID may cause scarring, infertility and ectopic pregnancy. Almost all infections that do occur develop during the pregnancy itself, usually because of some event that disrupts the body's normal defences.

Most infectious complications of early pregnancy are related to spontaneous or induced abortion. **Spontaneous abortion** (or miscarriage) is common in the first trimester and usually resolves without complication. **Induced abortion** is also common and risk of infection is high when it is performed in unsafe conditions. Spontaneous or induced abortion is **incomplete** when tissue remains inside the uterus, and infection may develop if any remaining products of conception are not removed.

¹ *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice.* Geneva, World Health Organization, 2003, and

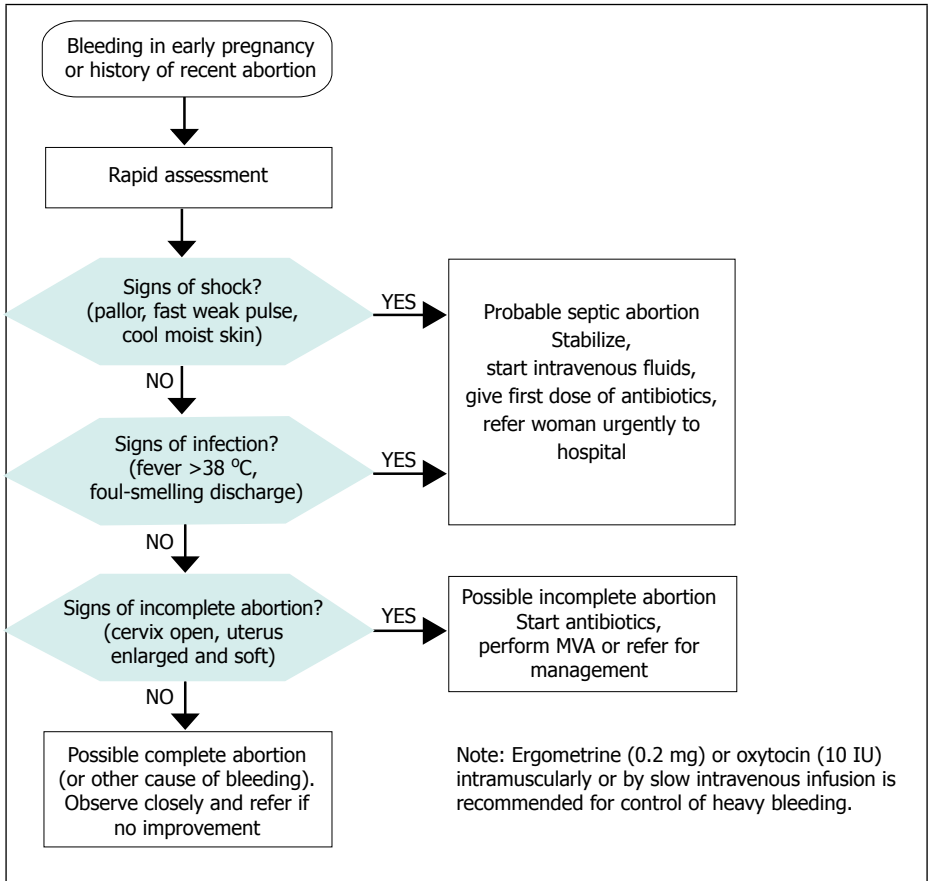
Managing complications in pregnancy and childbirth: a guide for midwives and doctors. Geneva, World Health Organization, 2000.

Such details are not always apparent when a woman seeks medical care for abortion complications. In fact, women with problems following induced abortion may not mention having had a procedure, especially in places where abortion is illegal. They may simply complain of spontaneous bleeding or other problems instead. Health care providers should thus have a high index of suspicion and manage possible infection following abortion based on objective signs, regardless of history.

MANAGEMENT OF POSTABORTION COMPLICATIONS

The treatment of complicated abortion includes stabilization of the patient, removal of remaining products of conception from the uterus, and administration of intravenous or intramuscular antibiotics (Flowchart 6, Treatment table 11). Abortion complications can be life-threatening and timely assessment and management are critical. A rapid assessment—short history, vital signs, general examination and abdominal and genital examination—should be performed and emergency treatment started. Women with signs of shock should be stabilized with intravenous fluids. All women with signs of shock or infection in early pregnancy should be given the first dose of antibiotics intravenously or intramuscularly, and referred immediately to a facility that can provide appropriate management, including safe evacuation of the uterine contents.

FLOWCHART 6. POSSIBLE COMPLICATIONS OF ABORTION



➡ Treatment table 11

For information on manual vacuum aspiration (MVA) and other methods of uterine evacuation, see reference below. All women who undergo MVA should be followed closely to detect signs of possible infection early. The publication below also indicates appropriate stabilizing fluids and recommended antibiotics.

Follow-up at: 24–72 hours (sooner if worse)

For more information, see: *Managing complications in pregnancy and childbirth: a guide for midwives and doctors*. Geneva, World Health Organization, 2000.

INCOMPLETE ABORTION AND RISK OF INFECTION

Bleeding in early pregnancy may indicate that abortion is threatened, in progress or incomplete, or may be a sign of ectopic pregnancy or other problem. Signs of incomplete abortion are a soft, enlarged uterus and open cervical os. Abdominal pain frequently precedes or accompanies abortion, postabortion infection and ectopic pregnancy. Severe pain without bleeding may be a sign of ectopic pregnancy.

The treatment of incomplete abortion involves removal of remaining products of conception. This can be safely performed using manual vacuum aspiration (MVA) or other methods. If there are signs of infection, women should be treated with antibiotics (see Chapter 3). All other women should be counselled to come back immediately if any signs of infection appear.

Women with light bleeding and no signs of shock or infection should be further evaluated if they do not improve in the next few days.

INFECTION IN LATE PREGNANCY

After the first trimester, infection of the vagina, cervix, and fetal membranes or amniotic fluid (chorioamnionitis) is a common cause of spontaneous abortion, rupture of membranes, preterm labour and stillbirth. The same vaginal, cervical and exogenous organisms (gonococci, chlamydia, bacteria associated with bacterial vaginosis, trichomonas, group B streptococci) may be involved in postabortion infection, chorioamnionitis, and postpartum and neonatal infections. Some of these infections often follow vaginal examination or other procedures, which should be avoided in late pregnancy unless necessary. Prevention of these complications also includes detection and treatment of STIs/RTIs during antenatal visits where possible (Chapter 3).

INFECTION AND RUPTURE OF MEMBRANES

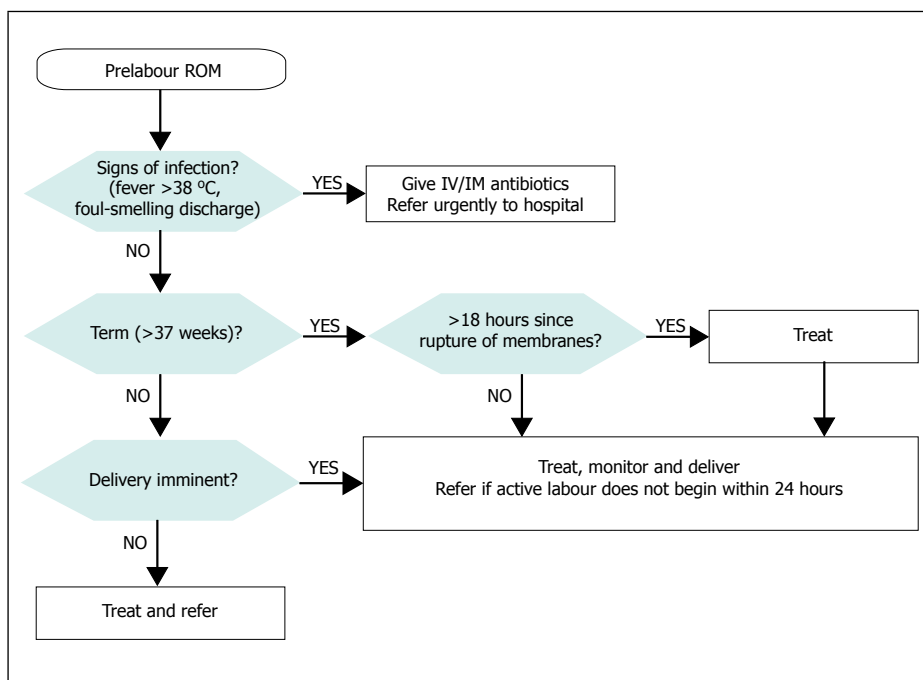
Infection may cause rupture of membranes (ROM) or follow it. All women—whether at term or preterm—with ROM and any signs of infection (fever, increased white blood cells, increased C-reactive protein or foul-smelling discharge) should be given antibiotics intravenously or intramuscularly (Flowchart 7) and urgently referred for care.

When membranes rupture at term, labour usually begins within 24 hours. Women without signs of infection can be observed. If labour does not begin within 24 hours, the woman should be referred to a facility where labour can be safely induced. To further reduce the risk of infection:

- Avoid vaginal examinations once the membranes have ruptured.
- If labour has not begun within 18 hours, give antibiotics (Treatment table 12) to reduce the risk of infection before and after delivery.

When membranes rupture before term, complications—preterm delivery, low birth weight, and perinatal morbidity and mortality—are more common. When ROM occurs before onset of labour, management should take into account the health of the mother, gestational age and viability of the fetus, and available options for intervention. Flowchart 7 summarizes the management of women with prelabour rupture of membranes.

FLOWCHART 7. PRELABOUR RUPTURE OF MEMBRANES



➡ Treatment table 12

Consider immediate referral or hospitalization.

Refer also to *Managing complications in pregnancy and childbirth: a guide for midwives and doctors*. Geneva, World Health Organization, 2000.

In choosing the antibiotics to treat infection in a woman with a viable pregnancy, the risks and benefits should be carefully weighed. Antibiotics that may be harmful to the fetus should be avoided where possible (see Annex 4). If infection is severe, however, the priority should be to give effective antibiotic treatment.

Prevention of infection in late pregnancy and preterm delivery should include interventions throughout the pregnancy to prevent and detect STI/RTI. Where feasible, screening for common STIs/RTIs implicated in prelabour ROM and other adverse pregnancy outcomes is recommended at the first antenatal visit, and again later in pregnancy for women at high risk of preterm labour (see Chapter 3). The importance of primary prevention of STI/RTI to a healthy pregnancy should be emphasized to women and their partners.

INFECTION FOLLOWING CHILDBIRTH

POSTPARTUM ENDOMETRITIS AND PUERPERAL SEPSIS

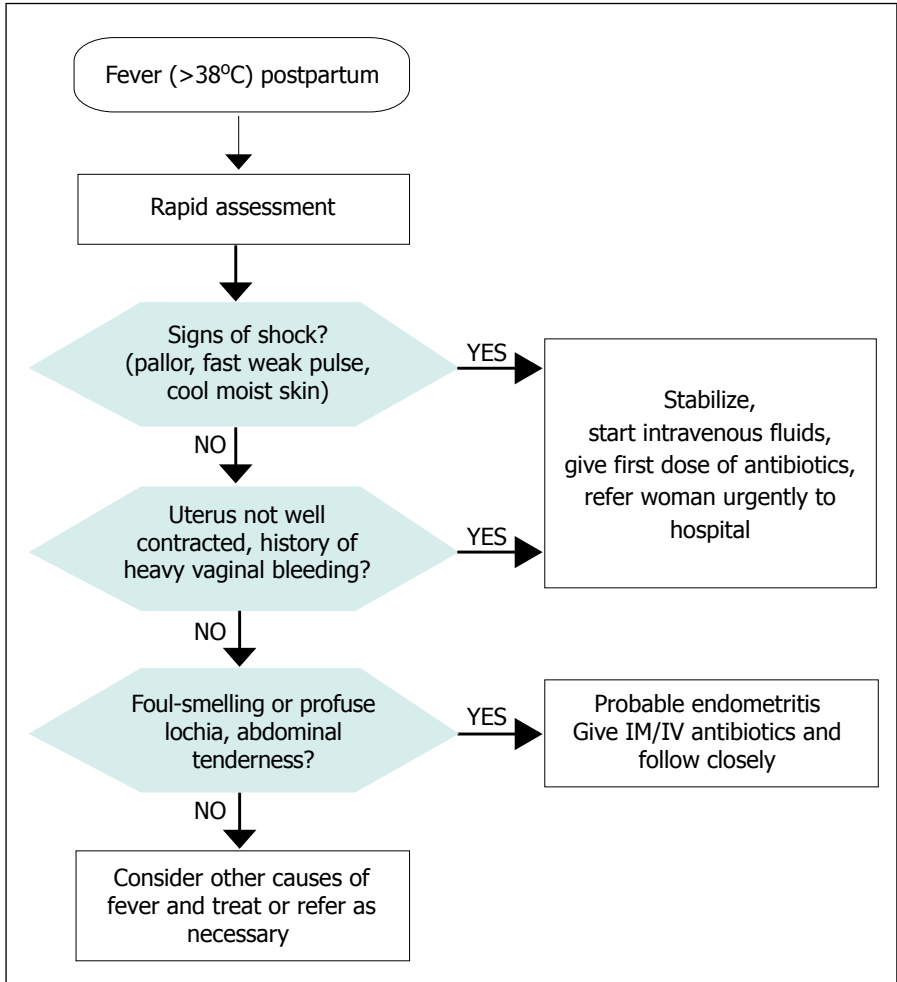
Postpartum endometritis (uterine infection) and puerperal sepsis are common causes of maternal morbidity and mortality respectively and are largely preventable with good antenatal care, delivery practices and postpartum care. When care is delayed or inadequate, however, infection can progress quickly to generalized sepsis, which can result in infertility, chronic disability and even death.

Postpartum endometritis is commonly caused by gonococci, chlamydia, anaerobic bacteria, Gram-negative facultative bacteria, and streptococci. In developed countries, most postpartum infections are related to caesarean section. Elsewhere, postpartum endometritis more often follows vaginal delivery. Early postpartum endometritis occurs within the first 48 hours, and late infection between 3 days and 6 weeks following delivery. Aggressive treatment should be given for all postpartum infections (for complete management, see *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice*, Geneva, World Health Organization, 2003).

Women with signs of infection immediately postpartum should be stabilized, given a first dose of antibiotics intravenously (or intramuscularly) and referred urgently to hospital.

Flowchart 8 outlines the management of women presenting with fever between 24 hours and 6 weeks postpartum.

FLOWCHART 8. POSTPARTUM INFECTION



➔ Treatment table 11

Follow-up: 24–72 hours (see patient sooner if worse and/or consider immediate referral or hospitalization).

Refer also to *Managing complications in pregnancy and childbirth: a guide for midwives and doctors*. Geneva, World Health Organization, 2000.

Activities to prevent postpartum infection include prevention and detection of STI/RTI during pregnancy (Chapter 2 and Chapter 3) and good delivery practice. See the WHO publications: *Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice*, Geneva, World Health Organization, 2003 or *Managing complications in pregnancy and childbirth: a guide for midwives and doctors*, Geneva, World Health Organization, 2000 for guidelines on prevention and comprehensive management of postpartum complications.

Treatment table 11. Antibiotic regimens for treatment of infection following miscarriage, induced abortion or delivery (septic abortion, postpartum endometritis)

Option 1	Option 2	Option 3	Option 4
Commonly available, least expensive. Give all 3 drugs	Choose one drug from each box (= 3 drugs)	Give both drugs	Choose one drug from each box (= 3 drugs)
ampicillin 2 g intravenously or intramuscularly, then 1 g every 6 hours	ceftriaxone 250 mg by intramuscular injection, once a day	clindamycin 900 mg by intravenous injection, every 8 hours	ciprofloxacin^b 500 mg orally, twice a day, or spectinomycin 1 g by intramuscular injection, 4 times a day
gentamicin 80 mg intramuscularly every 8 hours	doxycycline 100 mg orally or by intravenous injection, twice a day, or tetracycline 500 mg orally 4 times a day	gentamicin 1.5 mg/kg of body weight by intravenous injection every 8 hours	doxycycline 100 mg orally or by intravenous injection, twice a day, or tetracycline , 500 mg orally, 4 times a day
metronidazole^a 500 mg orally or by intravenous infusion every 8 hours	metronidazole^a 400–500 mg orally or by intravenous injection, twice a day, or chloramphenicol 500 mg orally or by intravenous injection, 4 times a day		metronidazole^a 400–500 mg orally or by intravenous injection, twice a day, or chloramphenicol 500 mg orally or by intravenous injection, 4 times a day
For all regimens, therapy should be continued for 2 days after the patient is fever free.			

- a. Patients taking metronidazole should be counselled to avoid alcohol.
- b. The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.

Treatment table 12. Antibiotic regimens for treatment of infectious complications with viable pregnancy (chorioamnionitis, rupture of membranes)

Option 1 – safest for fetus when there are no signs of maternal infection	Option 2 – best coverage when maternal signs of infection (fever, foul-smelling discharge) are present
Oral/intramuscular combination that is safe in pregnancy Choose one from each box (= 3 drugs)	Commonly available, least expensive. Give all 3 drugs until delivery. If woman delivers vaginally, discontinue all antibiotics after delivery. If delivery is by Caesarean section, continue antibiotics until she is fever free for 48 hours
cefixime 400 mg orally as a single dose, or ceftriaxone 125–250 mg by intramuscular injection	ampicillin 2 g intravenously or intramuscularly, then 1 g every 6 hours
erythromycin ^a 500 mg orally 4 times a day for 7 days, or azithromycin 1 g orally as a single dose	gentamicin 80 mg intramuscularly every 8 hours
metronidazole ^b 2 g orally as a single dose	metronidazole ^b 500 mg orally or by intravenous infusion every 8 hours

- a. Erythromycin estolate is contraindicated in pregnancy because of drug-related hepatotoxicity; only erythromycin base or erythromycin ethylsuccinate should be used. Note that oral erythromycin alone has been shown to decrease preterm birth in women with preterm, prelabour rupture of membranes in Europe (where gonorrhoea is uncommon). Since gonorrhoea is resistant to erythromycin in many areas, addition of cefixime or ceftriaxone is recommended where gonorrhoea is common.
- b. Patients taking metronidazole should be counselled to avoid alcohol.

VAGINAL DISCHARGE IN PREGNANCY AND THE POSTPARTUM PERIOD

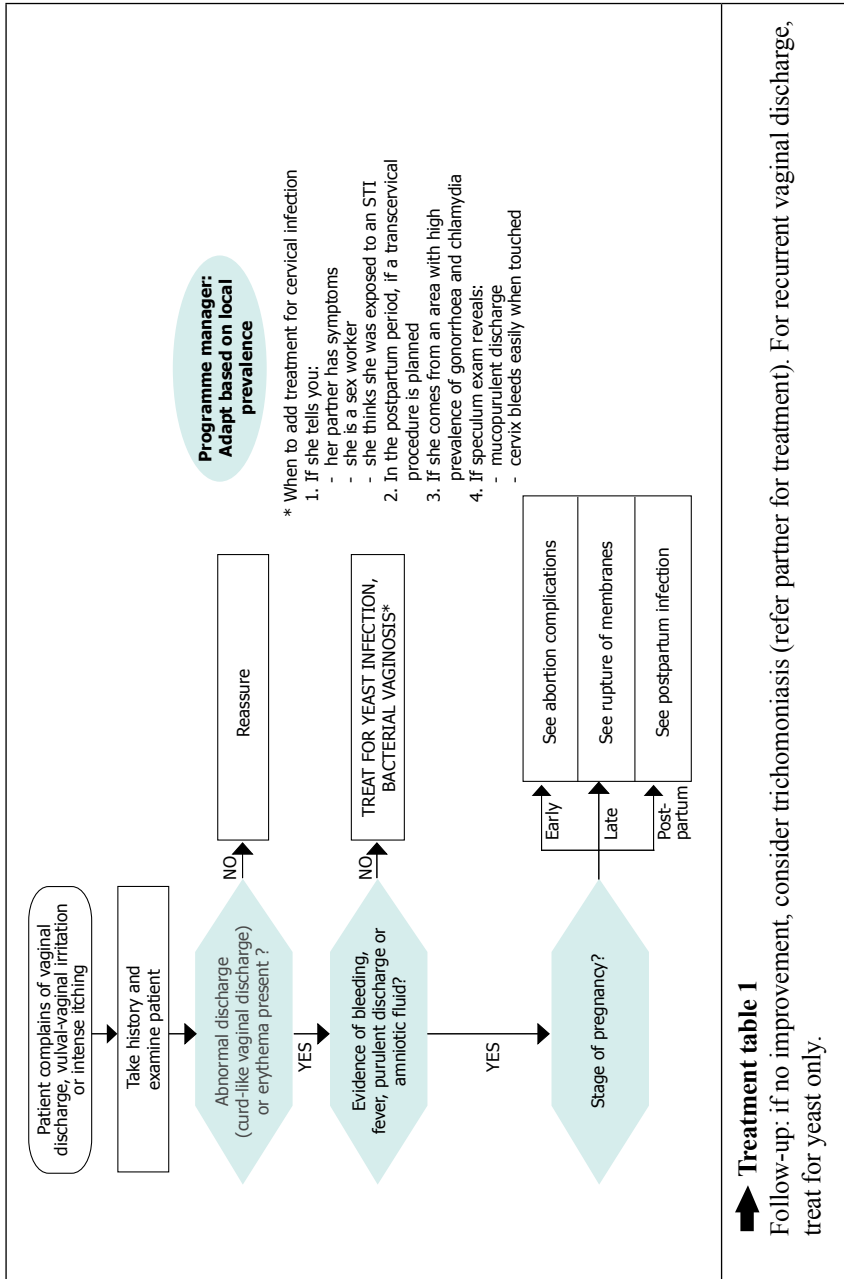
Vaginal discharge as a symptom or sign of RTI presents different challenges during pregnancy, because physiological changes during pregnancy can affect the normal microbiological environment (flora) of the vagina. For example, discharge may be more abundant and yeast infection is more common. Women with vaginal discharge should be carefully questioned and examined to make sure that the discharge is not an early sign of a more serious problem. For example:

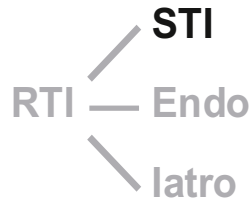
- In early pregnancy, discharge may mask spotting or light bleeding that could indicate ectopic pregnancy, threatened abortion, or cervical cancer.
- A watery discharge in late pregnancy could be amniotic fluid from ruptured membranes.

A careful history and examination will usually provide clues that will help distinguish simple vaginitis from more serious conditions. When discharge is accompanied by bleeding, fever, abdominal pain or amniotic fluid leakage, the patient should be managed or referred for possible sepsis.

If pregnancy complications have been ruled out, all women with vaginal discharge should be treated for bacterial vaginosis, trichomoniasis and yeast infection. Yeast infection is very common during pregnancy and is often recurrent, so if a woman comes back with the same symptoms, she should be treated for yeast infection only.

FLOWCHART 9. VAGINAL DISCHARGE IN PREGNANCY AND POSTPARTUM PERIOD





CHAPTER 10. SEXUAL VIOLENCE

Key points

- Sexual violence is common but is **frequently not talked about** by the person concerned—health care workers should maintain a high index of suspicion. They should ask about experience of sexual violence or abuse.
- Clinic **policies and practice guidelines** should be developed in accordance with local legal requirements.
- Women or children who have been sexually abused may need **shelter and legal protection**. Psychosocial management includes **counselling and supportive services**, which should be available on-site or by referral.
- Medical management includes prevention of pregnancy and infection, in addition to care of injuries. **STI prophylaxis and emergency contraception** should be available.
- **Forensic examination** should be available to document evidence if the person chooses to take legal action. Staff should be trained in how to take forensic specimens, or referral links should be made.
- **Referral** should be available if services cannot be provided on-site.

Sexual violence is defined as “*any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic women’s sexuality, using coercion, threats of harm or physical force, by any person regardless of relationship to the victim, in any setting, including but not limited to home and work*”¹.

Sexual violence is common. Both males and females are vulnerable in childhood, but women are much more at risk in adolescence and adulthood. Box 10.1 gives some information on the occurrence of sexual violence.

Box 10.1. Sexual violence—some statistics

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.

STI has 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 non-specific complaints or requesting a check-up—assuming that the health care provider will notice anything abnormal that needs treatment.

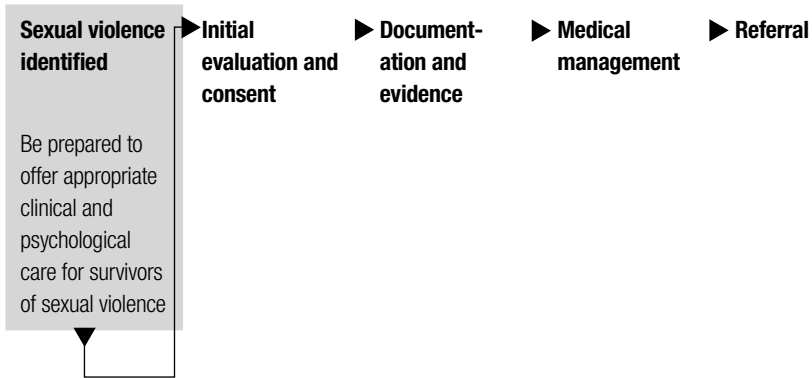
This chapter cannot cover all the medical, social and legal aspects of sexual violence that should be addressed. Rather, it focuses on recommendations for preventing direct adverse consequences of sexual assault, particularly STI and pregnancy. The resources listed in Annex 6 provide guidance for establishing services and protocols for comprehensive care of survivors of sexual violence and examples of screening protocols that can be used to identify those exposed to gender-based violence.

World Report on violence and Health. Geneva, World Health Organization, 2002.

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 local 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 crisis situations. 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.

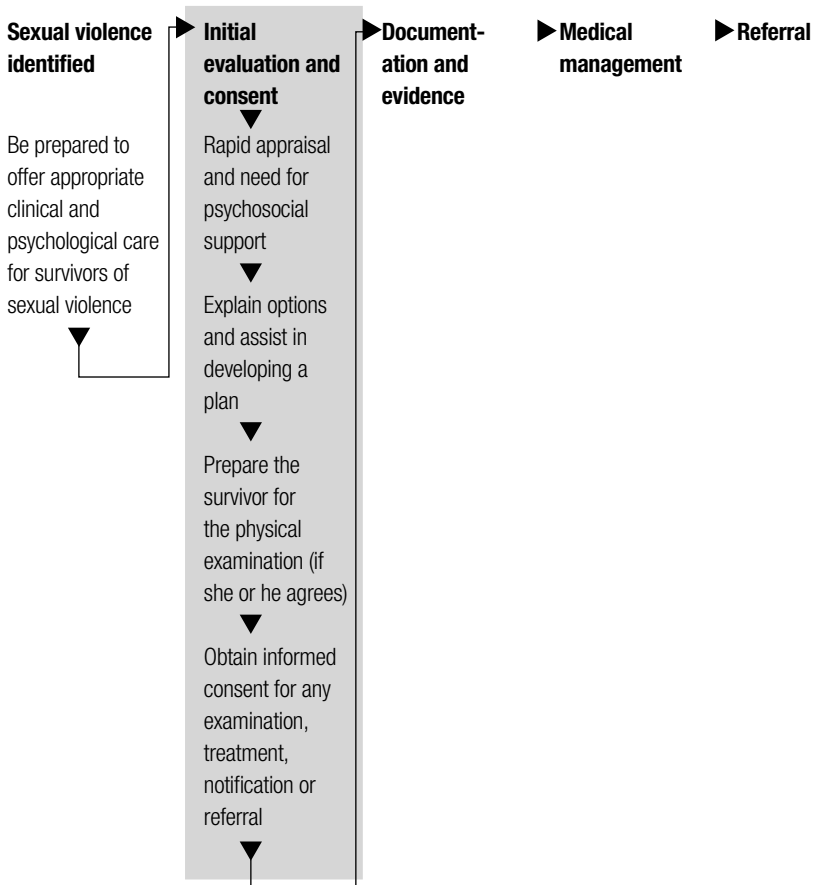
Step 1: Be prepared



The following services should be available, on-site or through referral, for patients who have experienced sexual violence:

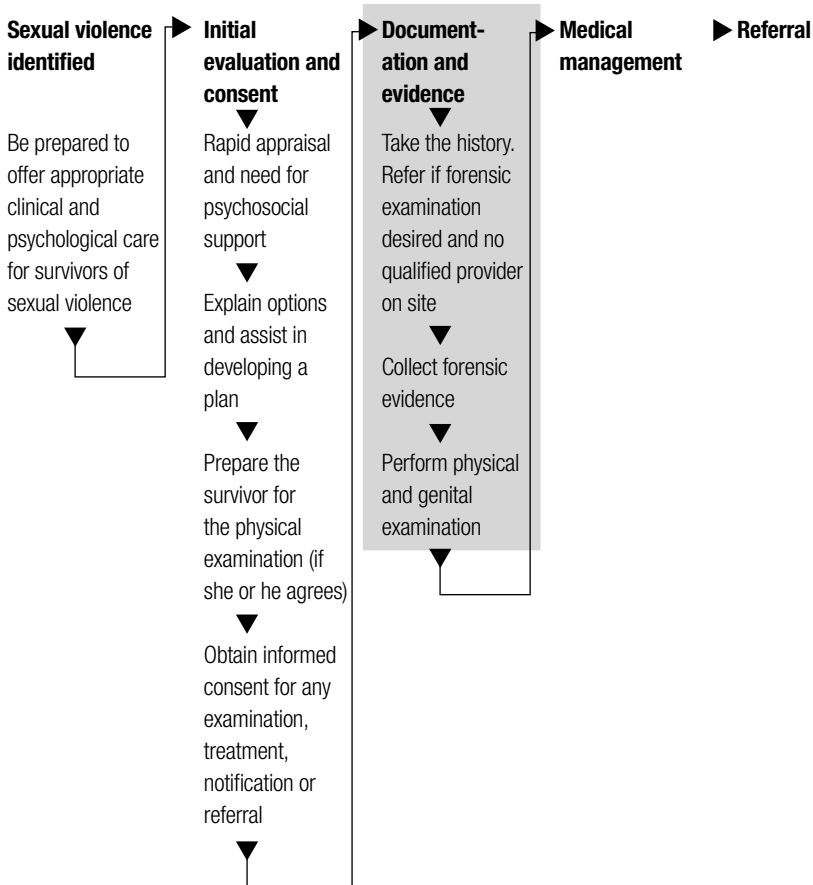
- essential medical care for any injuries and health problems;
- collection of forensic evidence;
- evaluation for STI and preventive care;
- evaluation of pregnancy risk and prevention, if necessary;
- psychosocial support (both at time of crisis and long-term);
- follow-up services for all of the above.

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, local guidelines may dictate how to manage the person—usually parental consent is required. **If at all possible, do not deny adolescents immediate access to medical services.**

Where facilities or referral for a more complete examination are not available, the following **minimal** information should be collected: date and time of assault; date and time of examination; patient's statement; and 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.

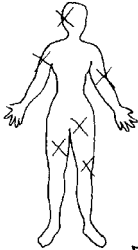
Clinic Report

Date: _____

Time: _____

Patient's Statement: _____

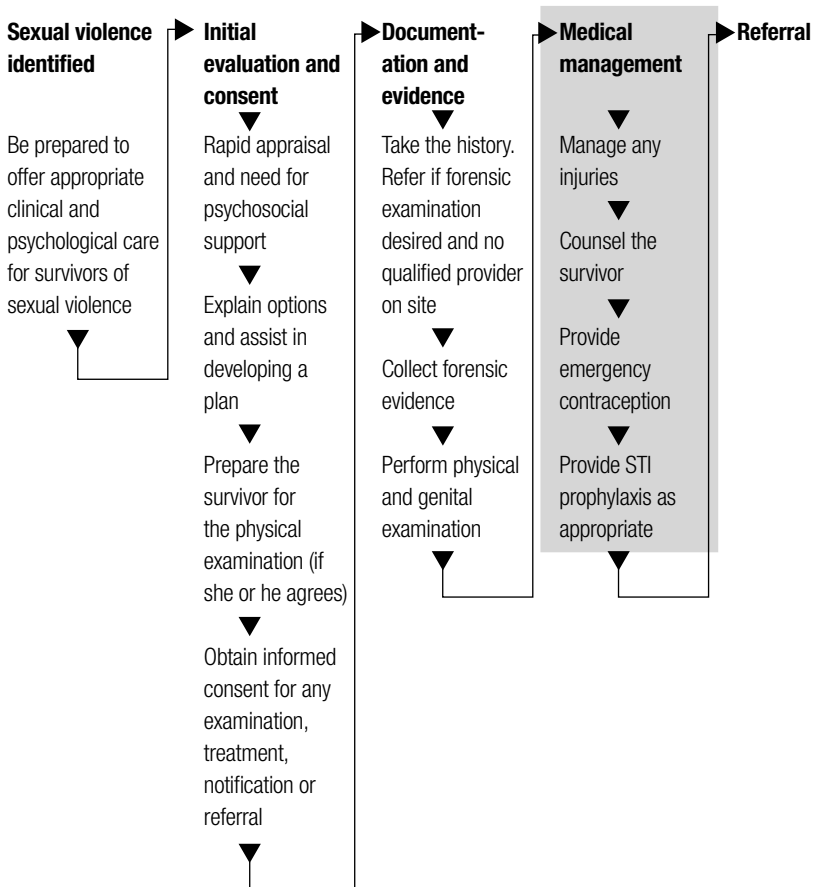
Exam: _____



The diagram shows a simple outline of a human figure from the front. There are 'X' marks on the head, both shoulders, both upper arms, and both lower legs, indicating areas of injury or 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



The medical management of the survivor includes treatment of any injuries sustained in the assault, and initial counselling. Emergency contraception and STI prophylaxis should be offered early to survivors of sexual violence. 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.

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. Several regimens exist—using levonorgestrel or combined oral contraceptive pills (see Box 6.2).

A second option for emergency contraception is insertion of a copper-bearing IUD within 5 days of the rape. This will prevent more than 99% of pregnancies. The IUD may be removed during the woman's next menstrual period or left in place for continued contraception. If an IUD is inserted, make sure to **give full STI treatment** as recommended in Treatment table 13.

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.

POSTEXPOSURE PROPHYLAXIS OF STI

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 table 13 lists options that are effective whether taken soon after exposure or after the appearance of symptoms.

Treatment table 13. STI presumptive treatment options for adults

Coverage	Option 1 All single dose, highly effective. Choose one from each box (= 3 or 4 drugs) ^a	Option 2 Effective substitutes – possible resistance in some areas, or require multiple dosage	If patient is pregnant, breastfeeding or under 16 years old Choose one from each box (= 3 or 4 drugs) ^a
Syphilis	benzathine penicillin 2.4 million units by single intramuscular injection	doxycycline^c 100 mg orally twice a day for 14 days (in case of penicillin allergy only)	benzathine penicillin 2.4 million units by single intramuscular injection
Gonorrhoea/ chancroid	cefixime 400 mg orally as a single dose, or ceftriaxone 125 mg by intramuscular injection	ciprofloxacin^d 500 mg orally as a single dose, or spectinomycin 2 g by intramuscular injection	cefixime 400 mg orally as a single dose, or ceftriaxone 125 mg by intramuscular injection
Chlamydia/ lymphogranuloma venereum	azithromycin 1 g orally as single dose	doxycycline^c 100 mg orally twice a day for 7 days, or tetracycline^c 500 mg orally 4 times a day for 7 days	azithromycin 1 g orally as single dose, or erythromycin 500 mg orally 4 times a day for 7 days
Trichomoniasis	metronidazole^b 2 g orally as a single dose	tinidazole^e 2 g orally as a single dose	metronidazole^b 2 g orally as a single dose, or 400–500 mg 3 times a day for 7 days

- 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.
- c. These drugs are contraindicated for pregnant or breastfeeding women.
- d. The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.
- e. Patients taking tinidazole should be cautioned to avoid alcohol.

Additional antibiotic treatments for gonorrhoea are given in Annex 3.

Treatment for possible STI in children is similar to that for adults. Recommended dosages are given in Treatment table 14.

Treatment table 14. STI presumptive treatment options for children

Coverage	All single-dose antibiotics are highly effective. Choose one from each box (= 3 or 4 drugs) ^b	Older children and adolescents
Syphilis	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	>45 kg, use adult protocol
Gonorrhoea^a/ chancroid	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	>45 kg, use adult protocol
Chlamydia/ lymphogranuloma venereum	erythromycin 12.5 mg/kg of body weight orally 4 times a day for 7 days	12 years or older, use adult protocol
Trichomoniasis	metronidazole^c 5 mg/kg of body weight orally 3 times a day for 7 days	12 years or older, use adult protocol

- a. Additional antibiotic treatments for gonorrhoea are given in Annex 4.
- b. If erythromycin is chosen for syphilis, then only 3 drugs should be used for children.
- c. Patients taking metronidazole should be cautioned to avoid alcohol.

Postexposure 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 postexposure 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 local prevalence of HIV and other factors (trauma, other STI exposure) that could influence transmission. If the person decides to take PEP, two or three antiretroviral drugs are usually given for 28 days.

Prophylactic immunization against hepatitis B

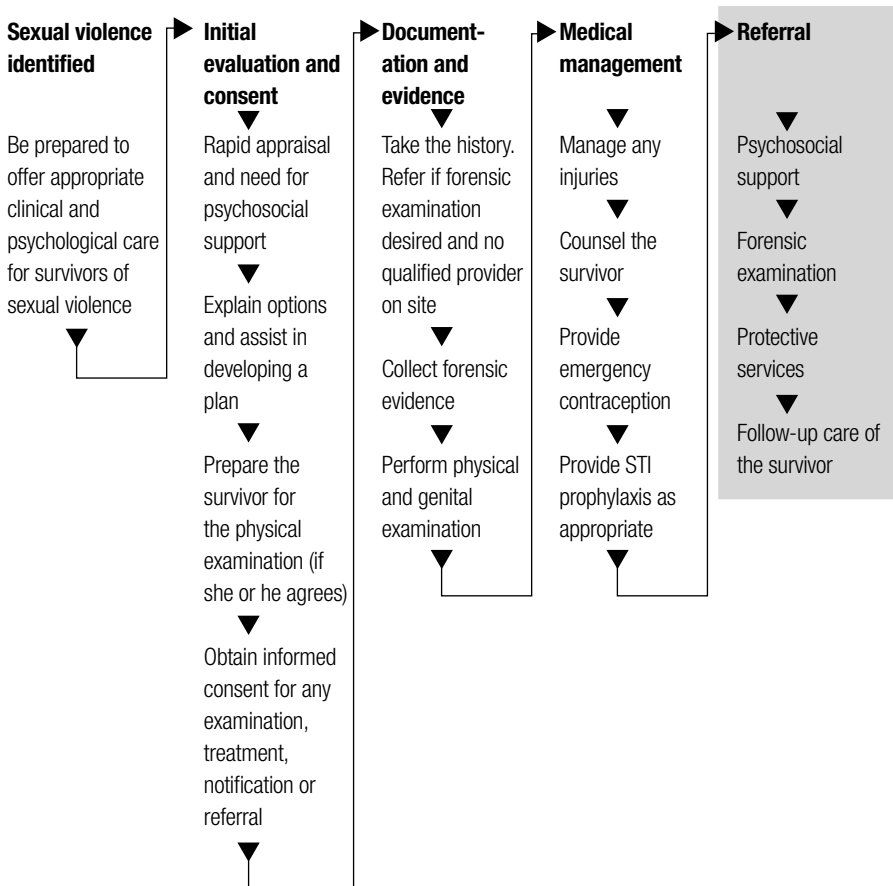
Hepatitis B virus (HBV) is easily transmitted through both sexual and blood contact. Several effective vaccines exist although they are expensive and require refrigeration. If HBV vaccine is available, it should be offered to survivors of rape within 14 days if possible. Three intramuscular injections 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 immunization 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.

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.

ANNEXES

Annex 1. Clinical skills needed for STI/RTI management

Annex 2. Disinfection and universal precautions

Annex 3. Laboratory tests for RTI

Annex 4. Medications

Annex 5. STI/RTI reference table

Annex 6. Additional resources and suggested reading

ANNEX 1. CLINICAL SKILLS NEEDED FOR STI/RTI MANAGEMENT

Contents

- History-taking
- Common STI/RTI symptoms
- Examining patients

HISTORY-TAKING

Because of the stigma associated with STI/RTI, patients are often reluctant to talk about their condition. To make patients feel more comfortable during the history-taking and examination, health care providers should be interested and sympathetic, not distracted or judgemental.

- **W**elcome your patient.
- **E**ncourage your patient to talk.
- **L**ook at your patient.
- **L**isten to your patient.

A sexual history can provide useful information for guiding decisions about STI/RTI management, or additional examinations or tests that might benefit the patient. In a private place where no one else can hear, the patient should be asked about:

- the reason for her or his visit;
- social history, including factors that may increase STI/RTI risk;
- medical history, including any medications or drug allergies;
- previous pregnancies, last menstrual period, menstrual pattern, contraception;
- sexual history, including any behaviour that may suggest increased risk;
- symptoms related to the present complaint;
- symptoms of STI/RTI.

COMMON STI/RTI SYMPTOMS

Many patients with an RTI complain of symptoms associated with specific syndromes. Health care providers can use the syndrome algorithms in Chapter 8 and Chapter 9 for guidance on management.

Women	Men	Syndrome
Vaginal discharge that is abnormal in colour, odour, amount or consistency. Itching or irritation of the vulva or vagina.		Vaginal discharge (Flowcharts 1 and 9)
	Urethral discharge Painful urination (dysuria)	Urethral discharge (Flowchart 5)
Lower abdominal pain		Lower abdominal pain (Flowchart 2)
Genital ulcers, sores or blisters		Genital ulcer (Flowchart 3)
Swelling, lumps or ulcer in the groin area		Inguinal bubo (Flowchart 4)

Other symptoms and signs that may suggest RTI or may influence management are outlined below:

- Painful urination (dysuria) in women may indicate a vaginal or cervical infection, or urinary tract infection (UTI). If vaginal discharge is also present, use the vaginal discharge flowchart. If not, examination or tests for cervical infection or UTI may be needed.
- Signs of infection accompanied by a missed period (amenorrhoea) or irregular bleeding may indicate pregnancy. Women should be managed according to the appropriate flowchart in Chapter 9.
- Discharge, sores or warts in and around the anus can be caused by many of the STIs that cause genital infection. Treatment is the same as for genital infection.
- Ulcers and other lesions in and around the mouth may be signs of syphilis or herpes.
- Throat infection (pharyngeal gonorrhoea) is also possible. Single-dose treatment with ceftriaxone (125 mg), cefixime (400 mg), ciprofloxacin (500 mg), or ofloxacin (400 mg) is recommended (see Treatment table 8).

EXAMINING PATIENTS¹

Patients should be examined in the same conditions of privacy as those in which the history was taken. Patients should feel comfortable that no one will walk into the room while they are undressing or lying on the examination table. When examining patients of the opposite sex, it is usually advisable to have an assistant of the same sex as the patient present.

All examinations should begin with a general assessment, including vital signs and inspection of the skin, to detect signs of systemic disease. It is beyond the scope of these guidelines to cover all aspects of the physical examination.

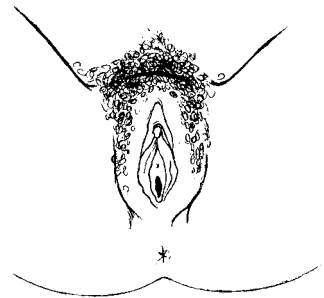
There are three components to the female genital examination, depending on available equipment and supplies.

- external genital examination;
- speculum examination;
- bimanual examination.

THE EXTERNAL GENITAL EXAMINATION FOR WOMEN

Before you start:

- Ensure that the examination can be conducted in privacy.
- Ask the woman to pass urine.
- Wash your hands well with clean water and soap.
- Ask the woman to loosen her clothing. Use a sheet or clothing to cover her.
- Have her lie on her back, with her heels close to her bottom and her knees up. Explain what you are about to do.
- Put a clean glove on the hand you will put inside the vagina.



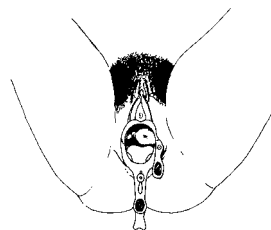
Carry out the examination in good light. Look at the outside genitals including perineum and anus—using the gloved hand to gently touch the woman, look for lumps, swelling, unusual discharge, sores, tears and scars around the genitals and in between the skin folds of the vulva.

¹ Much of this section is adapted from Burns et al. *Where women have no doctor*. Berkeley, CA, USA, Hesperian Foundation, 1997.

Signs to look for when doing an external examination	Management
Discharge and redness of the vulva are common signs of vaginitis. When the discharge is white and curd-like, yeast infection is likely.	Vaginal discharge, Flowchart 1 (for pregnant women, Flowchart 9)
Ulcers, sores or blisters.	Genital ulcer, Flowchart 3
Swelling or lumps in the groin (inguinal lymphadenopathy).	Inguinal bubo, Flowchart 4

How to do a speculum examination

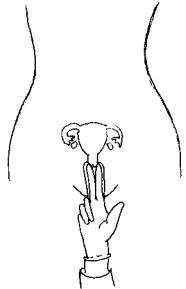
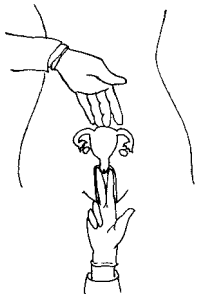
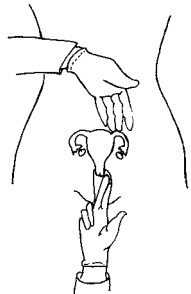
- Be sure the speculum has been properly disinfected or sterilized before you use it (see Annex 2). Wet the speculum with clean warm water or a lubricant, if available, before inserting it.
- Insert the first finger of your gloved hand in the opening of the woman's vagina (some clinicians use the tip of the speculum instead of a finger for this step). As you put your finger in, push gently downward on the muscle surrounding the vagina. Proceed slowly, waiting for the woman to relax her muscles.
- With the other hand, hold the speculum blades together between the pointing finger and the middle finger. Turn the blades sideways and slip them into the vagina. Be careful not to press on the urethra or clitoris because these areas are very sensitive. When the speculum is halfway in, turn it so the handle is down. Note: on some examination couches, there is not enough room to insert the speculum handle down—in this case, turn it handle up.
- Gently open the blades a little and look for the cervix. Move the speculum slowly and gently until you can see the cervix between the blades. Tighten the screw (or otherwise lock on the speculum) so it will stay in place.
- Check the cervix, which should look pink, round and smooth. There may be small yellowish cysts, areas of redness around the opening (cervical os) or a clear mucoid discharge; these are normal findings. Look for signs of cervical infection by checking for yellowish discharge or easy bleeding when the cervix is touched with a swab. Note any abnormal growths or sores.
- Notice if the cervical os is open or closed, and whether there is any discharge or bleeding. If you are examining the woman because she is bleeding from the vagina after birth, induced abortion or miscarriage, look for tissue coming from the opening of the cervix.



- To remove the speculum, gently pull it towards you until the blades are clear of the cervix. Then bring the blades together and gently pull back, turning the speculum gently to look at the walls of the vagina.
- Be sure to disinfect your speculum after each examination.

Signs to look for when doing a speculum examination	Management
Vaginal discharge and redness of the vaginal walls are common signs of vaginitis. When the discharge is white and curd-like, yeast infection is likely.	Vaginal discharge, Flowchart 1 (for pregnant women, Flowchart 9)
Ulcers, sores or blisters.	Genital ulcer, Flowchart 3
If the cervix bleeds easily when touched or the discharge appears mucopurulent with discoloration, cervical infection is likely.	Treatment table 2
If you are examining the woman after birth, induced abortion or miscarriage, look for bleeding from the vagina or tissue fragments and check whether the cervix is normal.	Complications of abortion, Flowchart 6
Tumours or other abnormal-looking tissue on the cervix.	Refer for Pap smear or cytology

How to feel the reproductive parts inside the abdomen: bimanual examination

- Test for cervical motion tenderness. Put the pointing finger of your gloved hand in the woman's vagina. As you put your finger in, push gently downward on the muscles surrounding the vagina. When the muscles relax, put the middle finger in too. Turn the palm of your hand up.
 - Feel the opening of her womb (cervix) to see if it is firm and round. Then put one finger on either side of the cervix and move the cervix gently while watching the woman's facial expression. It should move easily without causing pain. If it does cause pain (you may see her grimace), this sign is called cervical motion tenderness, and she may have an infection of the womb, tubes or ovaries. If her cervix feels soft, she may be pregnant.
 - Feel the womb by gently pushing on her lower abdomen with your outside hand. This moves the inside parts (womb, tubes and ovaries) closer to your inside hand. The womb may be tipped forward or backward. If you do not feel it in front of the cervix, gently lift the cervix and feel around it for the body of the womb. If you feel it under the cervix, it is pointed back.
 - When you find the womb, feel for its size and shape. Do this by moving your inside fingers to the sides of the cervix, and then "walk" your outside fingers around the womb. It should feel firm, smooth and smaller than a lemon.
 - If the womb feels soft and large, she is probably pregnant.
 - If it feels lumpy and hard, she may have a fibroid or other growth.
 - If it hurts when you touch it, she may have an infection inside.
 - If it does not move freely, she could have scars from an old infection.
 - Feel the tubes and ovaries. If these are normal, they will be hard to feel. If you feel any lumps that are bigger than an almond or that cause severe pain, she could have an infection or other emergency. If she has a painful lump, and her period is late, she could have an ectopic pregnancy and **needs medical help** right away.
 - Move your finger and feel along the inside of the vagina. Make sure there are no unusual lumps, tears or sores.
 - Have the woman cough or push down as if she were passing stool. Watch to see if something bulges out of the vagina. If it does, she could have a fallen womb or fallen bladder (prolapse).
- 

- When you are finished, clean and disinfect your glove if it will be reused. Wash your hands well with soap and water.

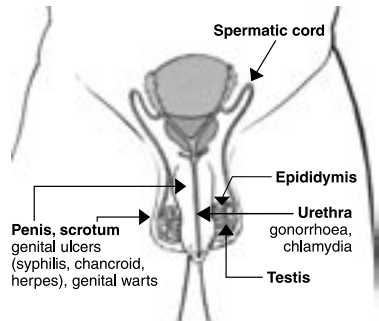
Signs to look for when doing a bimanual examination	Management
Lower abdominal tenderness when pressing down over the uterus with the outside hand.	Use the lower abdominal pain flowchart (Flowchart 2) if any tenderness is detected on abdominal or bimanual examination.
Cervical motion tenderness (often evident from facial expression) when the cervix is moved from side to side with the fingers of the gloved hand in the vagina.	
Uterine or adnexal tenderness when pressing the outside and inside hands together over the uterus (centre) and adnexae (each side of uterus).	
Any abnormal growth or hardness to the touch.	Refer for Pap smear or cytology

SYMPTOMS AND SIGNS OF RTIs IN WOMEN

Syndrome	Symptoms	Signs
Vaginitis (Flowchart 1)	Vaginal discharge that is abnormal in colour, odour, amount or consistency. Itching or irritation of the vulva or vagina.	Vulvovaginal redness Vaginal discharge seen on external or speculum examination
Cervicitis (Treatment table 2)	Usually none. Sometimes burning on urination or spotting of blood after intercourse	Mucopurulent cervical discharge Cervical bleeding to touch
Lower abdominal pain (Flowchart 2)	Lower abdominal pain Pain on intercourse	Lower abdominal tenderness on abdominal examination Cervical motion tenderness on bimanual examination Uterine or adnexal tenderness on bimanual examination
Genital ulcer (Flowchart 3)	Genital ulcers, sores or blisters	
Inguinal bubo (Flowchart 4)	Swelling, lumps or ulcers in the groin area	

EXAMINING A MALE PATIENT

- Wash your hands before the examination and put on clean gloves.
- Tell the patient what you are going to do as you do each step of the examination.
- Ask the patient to stand up and lower his underpants to his knees. Some providers prefer the man to lie down during the examination.
- Palpate the inguinal region (groin) looking for enlarged lymph nodes and buboes.
- Palpate the scrotum, feeling for the testis, epididymis, and spermatic cord on each side.
- Examine the penis, noting any rashes or sores.
- Ask the patient to pull back the foreskin if present and look at the glans penis and urethral meatus.
- If you do not see any obvious discharge, ask the patient to milk the urethra.
- Ask the patient to turn his back to you and bend over, spreading his buttocks slightly. This can also be done with the patient lying on his side with the top leg flexed up towards his chest.
- Examine the anus for ulcers, warts, rashes, or discharge.
- Wash your hands following the examination.
- Record findings, including the presence or absence of ulcers, buboes, genital warts, and urethral discharge, noting colour and amount.



SIGNS TO LOOK FOR WHEN EXAMINING MEN

Signs to look for	Management
Urethral discharge	Urethral discharge, Flowchart 5
Ulcers, sores or blisters	Genital ulcer, Flowchart 3
Swelling or lumps in the groin (inguinal lymphadenopathy) and swelling of testicles.	Inguinal bubo, Flowchart 4

ANNEX 2. DISINFECTION AND UNIVERSAL PRECAUTIONS

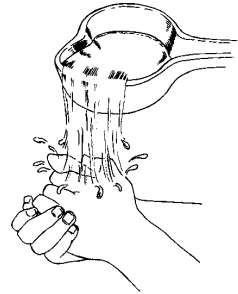
Contents

- Preventing infection in clinical settings
- High-level disinfection: three steps
- Universal precautions

PREVENTING INFECTION IN CLINICAL SETTINGS¹

Wash your hands before and after caring for another person. It is the most important way to kill germs on your skin. You need to wash your hands even more thoroughly and for a longer time:

- before and after helping someone give birth;
- before and after touching a wound or broken skin;
- before and after giving an injection, or cutting or piercing a body part;
- after touching blood, urine, stool, mucus, or fluid from the vagina;
- after removing gloves.



Use soap or other disinfectant to remove dirt and germs. Count to 30 as you scrub your hands all over with the soapy lather. Use a brush or soft stick to clean under your nails. Then rinse, using running water. Do not reuse water.

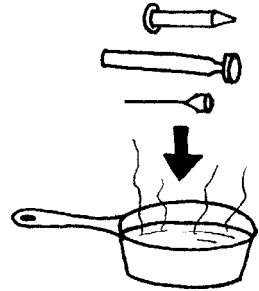
Disinfect or sterilize equipment and instruments. Cleaning instruments and equipment to get rid of nearly all the germs is called high-level disinfection. Instruments must first be washed and then disinfected if they are to be used to:

- cut or pierce skin;
- give an injection;
- cut the cord during childbirth;
- examine the vagina, especially during or after childbirth, a miscarriage, or an induced abortion.
- perform any transcervical procedure.

¹ Adapted from Burns et al. *Where women have no doctor*. Berkeley, CA, USA, Hesperian Foundation, 1997.

HIGH-LEVEL DISINFECTION: THREE STEPS¹

1. Soaking. Soak instruments for 10 minutes. If possible, use a 0.5% solution of bleach (chlorine) (see below). Soaking instruments in bleach solution will help protect you from infection when cleaning them. If you do not have bleach, soak your instruments in water.
2. Washing. Wash all instruments with soapy water and a brush until each one looks very clean, and rinse them with clean water. Be careful not to cut yourself on sharp edges or points. Wear gloves when washing instruments; if possible, use heavy gloves.
3. Disinfecting. Steam or boil the instruments for 20 minutes.
 - To steam them, you need a pot with a lid. The water does not need to cover the instruments, but use enough water to keep steam coming out of the sides of the lid for 20 minutes. Do not overload. No instruments should protrude above the rim of the pot.
 - To boil them, you do not need to fill the whole pot with water. But you should make sure the water covers everything in the pot for the entire time. Put a lid on the pot.
 - For both steaming and boiling, start timing the 20 minutes after the water with the instruments is fully boiling. Do not add anything new to the pot once you begin to count.



How to make a disinfection solution of 0.5% bleach

- If the label on your bleach says:
 - 2% available chlorine —use 1 part bleach to 3 parts water
 - 5% available chlorine —use 1 part bleach to 9 parts water
 - 10% available chlorine —use 1 part bleach to 19 parts water
 - 15% available chlorine —use 1 part bleach to 29 parts water
- Mix just enough solution for one day. Do not use it again the next day. It will no longer be strong enough to kill germs.

¹ Adapted from Burns et al. *Where women have no doctor*. Berkeley, CA, USA, Hesperian Foundation, 1997.

UNIVERSAL PRECAUTIONS¹

The same precautions against spreading infection —universal precautions —should be used with all patients whether they appear sick or well, and whether or not you know their HIV or other infection status.

A number of RTIs can be spread from patient to health care provider or to other patients if basic precautions are not followed. Hepatitis B and C viruses and HIV are incurable infections that are easily transmitted by reuse of contaminated sharps. Because RTIs are often asymptomatic, it is not possible to know which patients have an infection. For this reason, universal precautions should be followed for all patients regardless of known or suspected infection status.

Use precautions with every person you see. Every time you have to cut the skin or touch body fluids, follow the advice below. This includes any time you must give an injection, stitch skin or tissue, help with childbirth, or examine a woman's vagina.

If you follow these rules, there is no risk of spreading infection from one person to others, or of being infected yourself.

- Avoid touching body fluids, such as blood, vomit, stool and urine.
- Do not share anything that touches blood. This includes razors, needles, any sharp instruments that cut the skin, and toothbrushes. If you must share such things, disinfect them before another person uses them.
- Keep wounds covered with a clean bandage or cloth.
- Use gloves or a piece of plastic to handle dirty bandages, cloths, blood, vomit or stool.
- Wash your hands with soap and water after changing dirty bedding and clothes.
- Keep bedding and clothing clean. This helps keep sick people comfortable and helps prevent skin problems. Handle clothing or sheets stained with blood, diarrhoea or other body fluids carefully. Separate from other laundry for washing. Dry laundry thoroughly in the sun if possible or iron after drying.

¹ Adapted from Burns et al. *Where women have no doctor*. Berkeley, CA, USA, Hesperian Foundation, 1997.

ANNEX 3. LABORATORY TESTS FOR RTI

Contents

- Interpreting syphilis test results
- Clinical criteria for bacterial vaginosis (BV)
- Wet mount microscopy
- Gram stain microscopy of vaginal smears
- Use of Gram stain for diagnosis of cervical infection

Rapid Plasma Reagin (RPR) Laboratory tests

Perform RPR test and respond to results:

Seek consent.

Explain procedure.

Use a sterile needle and syringe. Draw up 5 ml of blood from a vein. Put in a plain test tube.

Let test tube sit 20 minutes to allow serum to separate. (Or centrifuge 3–5 minutes at 2000–3000 rpm). In the separated sample, serum will be on top.

Use sampling pipette to withdraw some of the serum. Take care not to include any red blood cells from the lower part of the separated sample.

Hold the pipette vertically over a test card circle. Squeeze teat to allow one drop (50 µl) of serum to fall onto a circle. Spread the drop to fill the circle using a toothpick or other clean spreader.

Important: Several samples may be done on one test card. Be careful not to contaminate the remaining test circles. Use a clean spreader for every sample. Carefully label each sample with a patient name or number

Attach dispensing needle to a syringe. Shake antigen.* Draw up enough antigen for the number of tests done (one drop per test).

Holding the syringe vertically, allow exactly one drop of antigen to fall onto each test sample. Do not stir.

Rotate the test card smoothly on the palm of the hand for 8 minutes.** (Or rotate on a mechanical rotator.)

Interpreting results

After 8 minutes rotation, inspect the card in good light. Turn or tilt the card to see whether there is clumping (reactive result). Most test cards include negative and positive control circles for comparison.

Example test card



1. Non-reactive (no clumping or only slight roughness)—Negative for syphilis

2. Reactive (highly visible clumping)—Positive for syphilis

3. Weakly reactive (minimal clumping)—Positive for syphilis

NOTE: Weakly reactive can also be more finely granulated and difficult to see than this illustration

* Make sure antigen was refrigerated (not frozen) and has not expired.

** Room temperature should be 22.8°C–29.3°C

If RPR positive:

- Determine if the woman and her partner have received adequate treatment.
- If not, treat woman and partner for syphilis with benzathine penicillin.
- Treat newborn with benzathine penicillin.
- Follow-up newborn in 2 weeks.
- Counsel on safer sex.

INTERPRETING SYPHILIS TEST RESULTS

Syphilis tests detect antibodies, which are evidence of current or past infection.

Syphilis tests are not needed to diagnose patients with genital ulcers (who should be managed using Flowchart 3 on page 117).

Non-treponemal tests (such as RPR and VDRL) are the preferred tests for screening. These tests detect almost all cases of early syphilis, but false positives are possible. RPR can be performed without a microscope.

Treponemal tests, such as *Treponema pallidum* haemagglutination test (TPHA), fluorescent *Treponema* antibody absorption test (FTA-Abs), microhaemagglutination

assay for antibodies to *Treponema pallidum* (MHA-TP), if available, can be used to confirm non-treponemal test results.

Quantitative RPR titres can help evaluate the response to treatment.

The following table can be used to interpret syphilis test results.

Note: where additional tests are not available, **all patients with reactive RPR or VDRL should be treated.**

Interpreting serological test results

	RPR	RPR titre	TPHA
Active infection	+	>1:8	+
Latent syphilis	+	Often <1:4	+
False positive	+	Usually <1:4	-
Successful treatment	+ or -	2 titres decrease (e.g. from 1:16 to 1:4)	+

CLINICAL CRITERIA FOR BACTERIAL VAGINOSIS (BV)

BV can be diagnosed using simple clinical criteria with or without the aid of a microscope.	
Collect specimen	Note colour and consistency of discharge. Take a sample of discharge from the side walls or deep in the vagina where discharge pools (or use discharge remaining on speculum). Touch pH paper to discharge on swab or speculum and note pH.
Prepare slide	Place specimen on a glass slide. Add a drop of 10% potassium hydroxide and note any odour.
What to look for	The diagnosis of BV is based on the presence of at least 3 of the 4 following characteristics <ul style="list-style-type: none"> ▪ Homogeneous white-grey discharge that sticks to the vaginal walls ▪ Vaginal fluid pH >4.5 ▪ Release of fishy amine odour from the vaginal fluid when mixed with 10% potassium hydroxide (positive whiff test) ▪ “Clue cells” visible on microscopy
Important	Look for evidence of other vaginal or cervical infections—multiple infections are common.

WET MOUNT MICROSCOPY

Direct microscopic examination of vaginal discharge can aid in diagnosis of yeast infection (<i>Candida albicans</i>), bacterial vaginosis and trichomoniasis.	
Collect specimen	Take a sample of discharge with a swab from the side walls or deep in the vagina where discharge accumulates.
Prepare slide	Mix specimen with 1 or 2 drops of saline on a glass slide and cover with a coverslip.
What to look for	<p>Examine at 100X magnification and look for typical jerky movement of motile trichomonads.</p> <p>Examine at 400X magnification to look for yeast cells and trichomonads.</p> <p>To make identification of yeast cells easier in wet mount slides, mix the vaginal swab in another drop of saline and add a drop of 10% potassium hydroxide to dissolve other cells.</p>
Important	Look for evidence of other vaginal or cervical infections—multiple infections are common.

GRAM STAIN MICROSCOPY OF VAGINAL SMEARS

Collect specimen	A Gram stain slide can be prepared at the same time as the wet mount by rolling the swab on a separate slide.
Prepare slide	<ol style="list-style-type: none"> 1. Heat fix. 2. Stain with crystal violet (60 seconds) and rinse. 3. Stain with iodine (60 seconds) and rinse. 4. Decolorize with acetone-ethanol for few seconds (until the liquid runs clear). 5. Stain with safranin (60 seconds) and rinse. 6. Gently blot dry and examine under oil immersion (1000X).
What to look for	<ol style="list-style-type: none"> 1. Lactobacilli only—normal 2. Mixed flora, mainly lactobacilli with a few short rods (cocci) —considered normal 3. Presence of clue cells; mixed flora, mainly <i>Gardnerella</i>-like and anaerobic bacteria with a few lactobacilli—treat for BV 4. Presence of clue cells; mixed flora of Gram-positive, Gram-negative and Gram-variable rods; no lactobacilli—treat for BV
Important	Look for evidence of other vaginal or cervical infections—multiple infections are common.

USE OF GRAM STAIN FOR DIAGNOSIS OF CERVICAL INFECTION

1. The Gram stain method is not recommended for the diagnosis of cervical infection. Its usefulness in detecting *Neisseria gonorrhoeae* or suggesting *Chlamydia trachomatis* in women is limited even where well-trained technicians are available.
2. The costs associated with the method, including the cost of maintaining microscopes, outweigh the benefits in terms of improved quality of care.

ANNEX 4. MEDICATIONS

Contents

- Medications in pregnancy
- Antibiotic treatments for gonorrhoea

MEDICATIONS IN PREGNANCY¹

During pregnancy, the mother and the fetus form one biological unit, and the health of the fetus depends on the health of the mother. It is important to treat the mother whenever needed, while protecting the unborn baby to the greatest possible extent.

Drugs can have harmful effects on the fetus at any time during pregnancy. During the first trimester, drugs may produce congenital malformations (teratogenesis); the greatest risk is between the third and the eleventh week of pregnancy. Few drugs have been shown conclusively to be teratogenic in humans but no drug is safe beyond all doubt in early pregnancy.

Drugs should be prescribed for a pregnant woman only if the expected benefits to her are thought to be greater than the risk to the fetus. All drugs should be avoided, if possible, during the first trimester. Drugs that have been used extensively in pregnancy and appear to be usually safe should be prescribed in preference to new or untried drugs and the smallest effective dose should be used. The following list includes information about use of some common drugs in pregnancy. Absence of a drug from the list does not imply that it is safe.

¹ *Thirteenth WHO model list of essential drugs*. Geneva, World Health Organization, 2003.

DRUG SAFETY IN PREGNANCY

acyclovir	Not known to be harmful; limited absorption from topical preparations
amoxicillin	No evidence of teratogenicity
ampicillin	Not known to be harmful
azithromycin	Limited data in pregnancy; use only if potential benefit outweighs risk.
benzathine benzylpenicillin	Not known to be harmful
benzylpenicillin	Not known to be harmful
cefixime	Single dose of cefixime is considered safe in pregnancy
ceftazidime	Not known to be harmful
ceftriaxone	Not known to be harmful
chloramphenicol	Third trimester: neonatal “grey baby” syndrome
ciprofloxacin	Avoid—arthropathy in animal studies; safer alternatives available
clindamycin	Not known to be harmful
clotrimazole	Not studied in first trimester. Used vaginally during second and third trimester not shown to cause birth defects.
cloxacillin	Not known to be harmful
doxycycline	Contraindicated in pregnancy and breastfeeding: First trimester: effects on skeletal development in animal studies Second and third trimesters: dental discoloration in children; maternal hepatotoxicity with large parenteral doses
erythromycin	Not known to be harmful
famciclovir	Animal studies did not show any risk for fetus—use only when potential benefit outweighs risk
fluconazole	Avoid in first trimester—multiple congenital abnormalities reported with long-term high doses
gentamicin	Second and third trimesters: auditory or vestibular nerve damage; risk probably very small, but use only if potential benefit outweighs risk (if given, monitoring of serum gentamicin concentration essential)
metronidazole	First trimester: avoid Second and third trimesters: avoid high-dose regimens (>1g)

nystatin	No information available, but absorption from gastrointestinal tract negligible
ofloxacin	Avoid—arthropathy in animal studies; safer alternatives available
podophyllum resin	Avoid—neonatal death and teratogenesis have been reported
streptomycin	Second and third trimesters: auditory or vestibular nerve damage; avoid unless essential (if given, monitoring of serum streptomycin concentration essential)
sulfamethoxazole + trimethoprim	First trimester: theoretical teratogenic risk (trimethoprim is a folate antagonist) Third trimester: neonatal haemolysis and methaemoglobinaemia; suggestion of increased risk of kernicterus in neonates appears to be unfounded
tinidazole	Manufacturer advises to avoid in first trimester Second and third trimesters: avoid high-dose regimens (>1g)
tetracycline	Contraindicated in pregnancy and breastfeeding: First trimester: effects on skeletal development in animal studies Second and third trimesters: dental discoloration in children; maternal hepatotoxicity with large parenteral doses
trimethoprim	First trimester: theoretical teratogenic risk (folate antagonist)
valaciclovir	Animal studies did not show any risk for fetus—use only when potential benefit outweighs risk;
vancomycin	Use only if potential benefit outweighs risk—monitoring of plasma vancomycin concentration essential to reduce risk of fetal toxicity
zidovudine and other antiretrovirals	Avoid if possible in first trimester; benefit of treatment considered to outweigh risk in second and third trimesters

ANTIBIOTIC TREATMENTS FOR GONORRHOEA

WHO recommended treatments for urogenital and rectal gonorrhoea			
	Dosage	Safe in pregnancy?	Resistance
cefixime	400 mg orally as a single dose	Yes	No
ceftriaxone	125 mg by intramuscular injection	Yes	No
ciprofloxacin^a	500 mg orally as a single dose	No	Extensive quinolone resistance in parts of the WHO South-East Asia and Western Pacific Regions
spectinomycin	2 g by intramuscular injection	Yes	No
Other effective treatments for urogenital and rectal gonorrhoea			
cefotaxime	1 g by intramuscular injection	Yes	No
ceftizoxime	1 g by intramuscular injection	Yes	No
cefuroxime	1.5 g by intramuscular injection	Yes	No
levofloxacin^a	250 mg orally as a single dose	No	Extensive quinolone resistance in parts of the WHO South-East Asia and Western Pacific Regions
norfloxacin^a	400 mg orally as a single dose	No	
ofloxacin^a	400 mg orally as a single dose	No	
trimethoprim/sulfamethoxazole	80/400 mg orally, 10 tablets as a single dose each day for 3 days	No	Resistance in many regions

^a The use of quinolones should take into consideration the patterns of *Neisseria gonorrhoeae* resistance, such as in the WHO South-East Asia and Western Pacific Regions.

Treatment of gonorrhoea: 30 regimens, involving 21 antimicrobial drugs have been shown to be effective for rectal and urogenital infections. Few regimens have been shown to be highly effective against pharyngeal infections. Among those antimicrobial agents available for the treatment of uncomplicated gonococcal infections, ceftriaxone (125 mg), cefixime (400 mg), ciprofloxacin (500 mg), and ofloxacin (400 mg) appear to offer the best balance of proven efficacy and safety.

ANNEX 5. STI/RTI REFERENCE TABLE

STI/RTI	Etiological agent	Acute manifestations	Possible complications	Effect on pregnancy and newborn
Sexually transmitted infections				
Gonorrhoea	<i>Neisseria gonorrhoeae</i>	In women: cervicitis, urethritis In men: urethritis	In women: pelvic inflammatory disease (PID), infertility, ectopic pregnancy, chronic pelvic pain In men: epididymitis, prostatitis, urethral strictures In both women and men: disseminated gonococcal infection, arthritis, endocarditis, meningitis	Pregnancy: spontaneous abortion, postpartum endometritis, prelabour rupture of membranes, preterm delivery Newborn: ophthalmia neonatorum
Chlamydial infection	<i>Chlamydia trachomatis</i>	In women: cervicitis, urethritis In men: urethritis	In women: PID, infertility, ectopic pregnancy, chronic pelvic pain In men: epididymitis, prostatitis, urethral strictures In both women and men: disseminated gonococcal infection, arthritis, endocarditis, meningitis	Pregnancy: preterm delivery Newborn: low birth weight, conjunctivitis, pneumonia, otitis
Trichomoniasis	<i>Trichomonas vaginalis</i>	In women: vaginitis In men: urethritis	In women: not known In men: prostatitis, urethral strictures, possibly infertility	Pregnancy: prelabour rupture of membranes, preterm delivery, post-caesarean endometritis Newborn: transient vaginal infection

STI/RTI	Etiological agent	Acute manifestations	Possible complications	Effect on pregnancy and newborn
Syphilis	<i>Treponema pallidum</i>	In both women and men: painless oral and anal genital ulcers, secondary (disseminated) syphilis: skin rash, malaise, headaches, muscle aches, weight loss, low-grade fever	In both women and men: neurological, cardiovascular and other systemic complications resulting from tertiary (late) syphilis	Pregnancy: spontaneous abortion, postpartum endometritis, prelabour rupture of membranes, preterm delivery Newborn: congenital infection abnormalities
Chancroid	<i>Haemophilus ducreyi</i>	In both women and men: genital ulcer (often painful), painful inguinal adenitis	In women: rectovaginal fistula, inguinal abscess In men: inguinal abscess	None known
Lymphogranuloma venereum (LGV)	<i>Chlamydia trachomatis</i>	In both women and men: small, painless genital ulcer, non-specific urethritis, acute lymphadenitis with bubo formation In women: cervicitis	In both women and men: fistulas, rectal strictures, genital elephantiasis	None known
Donovanosis	<i>Klebsiella granulomatis</i>	In both women and men: genital ulcer (could be cervical lesion in women)	In both women and men: pseudoelephantiasis, stenosis of the urethra, anus or vagina (in women)	None known
Genital herpes	Herpes simplex virus (HSV)	In both women and men: multiple vesicle lesions, ulceration, pain, itching, dysuria	In both women and men: aseptic meningitis, transverse myelitis, disseminated infections	Pregnancy: dissemination of infection (especially if acquired in the third trimester), spontaneous abortion, preterm delivery Newborn: neonatal herpes, encephalitis, disseminated infection, skin, eye, and mouth infection

STI/RTI	Etiological agent	Acute manifestations	Possible complications	Effect on pregnancy and newborn
Genital warts/ cervical lesions	Human papilloma virus (HPV)	In both women and men: genital and anal warts In women: squamous intraepithelial lesions of the cervix	In women: cervical cancer, vaginal and vulvar carcinoma, anal carcinoma In men: penile and anal carcinoma	Pregnancy: not known Newborn: laryngeal papillomatosis
Hepatitis B	Hepatitis B virus (HBV)	In both women and men: acute hepatitis	In both women and men: chronic hepatitis, cirrhosis, liver cancer	Pregnancy: not known Newborn: perinatal hepatitis B
HIV/AIDS	Human immunodeficiency virus (HIV)	In both women and men: headache, muscle ache, sore throat, fever, and swollen lymph nodes	In both women and men: AIDS	Pregnancy: possible increased progression of AIDS Newborn: perinatal transmission of HIV
Non-sexually transmitted infections in women				
Bacterial vaginosis	<i>Gardnerella vaginalis</i> , anaerobic bacteria, genital mycoplasma, streptococci	Vaginitis	Increased risk of PID (postabortion)	Pregnancy: preterm delivery, prelabour rupture of membranes, chorioamnionitis, postpartum endometritis Newborn: low birth weight
Vulvovaginal candidiasis	<i>Candida albicans</i>	Vaginitis	None known	Pregnancy: increased susceptibility to <i>Candida</i> Newborn: neonatal thrush

ANNEX 6. ADDITIONAL RESOURCES AND SUGGESTED READING

Adolescent friendly health services: an agenda for change. Geneva, World Health Organization, 2002.

Burns A et al. *Where women have no doctor.* Berkeley, CA, USA, Hesperian Foundation, 1997.

Cervical cancer screening programmes. Managerial guidelines. Geneva, World Health Organization, 1992.

Clinical guides for the management of pregnant women with HIV infection. Geneva, World Health Organization, 2004.

Clinical management of survivors of rape: a guide to the development of protocols for use in refugee and internally displaced person situations. Geneva, World Health Organization, 2001.

Comprehensive reproductive health and family planning training curriculum. Reproductive health training module 12: prevention and management of reproductive tract infections. Watertown, MA, USA, Pathfinder International, 2000.

Dallabetta G, Laga M, Lamptey P, eds. *Control of sexually transmitted diseases: a handbook for the design and management of programs.* Research Triangle Park, NC, USA, AIDSCAP, Family Health International, 1996.

Evaluation of the 100% condom programme in Thailand. Geneva, Joint United Nations Programme on HIV/AIDS, 2000.

Global prevalence and incidence of selected curable sexually transmitted diseases: overview and estimates. Geneva, World Health Organization, 2001.

Guidelines for the management of sexually transmitted infections. Geneva, World Health Organization, 2003.

Managing complications in pregnancy and childbirth: a guide for midwives and doctors. Geneva, World Health Organization, 2000.

Medical eligibility criteria for contraceptive use Third edition. Geneva, World Health Organization, 2004.

Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice. Geneva, World Health Organization, 2003.

Protocols for the medical management of persons who experienced sexual violence. Geneva, World Health Organization, 2003.

Scaling up antiretroviral therapy in resource-limited settings: guidelines for a public health approach. Geneva, World Health Organization, 2002.

Selected practice recommendations for contraceptive use. Second edition. Geneva, World Health Organization, 2004.

The decision-making tool for family planning clients and providers. Geneva, World Health Organization (in press).

Van Dyck E, Meheus ZA, Piot P. *Laboratory diagnosis of sexually transmitted diseases.* Geneva, World Health Organization, 1999.

Women's health exchange, Issue No 10. Berkeley, CA, USA, Hesperian Foundation, 2002.

World report on violence and health. Geneva, World Health Organization, 2002.

GLOSSARY¹

Adnexae: ovaries, fallopian tubes and supporting structures.

Algorithm: a sequence of logical steps that should be taken when dealing with a given task.

Birth plan: a plan for giving birth that takes into account the woman's or couple's preferences as well as special circumstances and possible complications or emergency situations.

Clue cells: vaginal cells covered with bacteria; commonly present in women who have a vaginal infection.

Complicated abortion: spontaneous or induced abortion that results in complications, such as infection or bleeding.

Curd-like vaginal discharge: whitish vaginal discharge, like cottage cheese; common in yeast infection.

Dilatation and curettage: a technique that may be used for induced abortion. It involves stretching the cervical channel and scraping the interior of the uterine cavity to remove products of conception.

Dry sex: a sexual practice that involves penetrative vaginal sex where the woman has a dry vagina. Sometimes herbs are used to increase the dryness. Dry sex increases the risks of sexually transmitted infections, including HIV.

Dual method use: using a barrier method for protection against sexually transmitted infection and another method for contraception.

Dual protection: prevention of both STI/HIV infection and unwanted pregnancy. This can be achieved by the correct and consistent use of condoms alone or by the simultaneous use of two methods, one of which must be a condom.

Dual risk: risk of both pregnancy and STI/HIV.

Dyspareunia: painful intercourse.

Dysuria: difficult or painful urination.

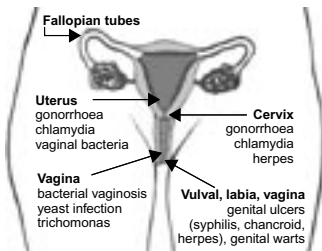
Ectopic pregnancy: a pregnancy in which the fertilized egg implants outside of the uterus, and the placenta and fetus begin to develop there. The most common site is within a fallopian tube.

Epididymitis: inflammation of the epididymis; occasional complication of untreated urethral infection.

¹ The definitions given here apply to terms as used in this publication; they are not necessarily applicable in other contexts.

Epithelialize: to become covered with epithelial tissue (to heal).

Female reproductive tract: includes vulva, vagina, uterine cavity and the fallopian tubes (see figure).



Forensic examination: examination to look for evidence that can later be used in legal proceedings; should be done by specially trained professional.

Health care providers: individuals who are trained to provide various health services.

HIV voluntary counselling and testing (VCT): counselling prior to HIV test, testing itself, and post-test counselling conducted when results of the test are given to the patient.

Incidence rate: the number of new cases of a disease in a defined population over a specified period of time.

Index patient: the original patient diagnosed for a particular infection.

Induced abortion: intentional termination of pregnancy prior to fetus reaching the state of viability by mechanical (surgical) means or by drugs.

Infertility: inability to conceive; usually assumed to exist if pregnancy is not achieved after 12 months of regular sexual intercourse, without the use of any form of birth control.

Infestation: development of a pathogenic agent on the body, e.g., body lice.

Integrated services: availability of multiple health services—for instance, family planning and STI treatment—through a single facility or at a single visit.

Integration: incorporation of other services into already existing services.

Lochia: postpartum discharge which is often blood-stained, but not foul-smelling.

Lower genital tract infection: includes vaginal and cervical infection.

Manual vacuum aspiration (MVA): a technique for evacuating the contents of the uterus through use of a specially designed hand-held syringe.

Medical eligibility criteria: criteria for a woman's eligibility to use a contraceptive method, based on the relative health risks and benefits of using such a method for a woman with a given condition.

Milking: checking for penile discharge by placing the fingers of one hand several centimetres behind the scrotum and bringing them upward and forward towards the base of the penis.

Morbidity: a state of disease.

Mother-to-child transmission (MTCT): transmission of HIV from an infected mother to her infant during pregnancy, labour or after delivery through breast milk.

Outpatient: a patient who receives treatment without being hospitalized.

Parenteral therapy: therapy given by some other means than through the gastrointestinal tract; usually refers to drugs given intravenously, intramuscularly or subcutaneously.

Pathogen: a microorganism, such as a bacterium, that lives on and feeds from a host and causes disease.

Postabortion: period of time that immediately follows abortion, usually no longer than 2 weeks.

Postabortion care: care given to manage complications of abortion. Key elements include emergency treatment of abortion complications, family planning counselling and services, and links to comprehensive reproductive health services.

Postpartum: the first 6 weeks after childbirth.

Preferred method: contraceptive method that patient thinks she would like to use.

Prelabour rupture of membranes: rupture of membranes before labour has begun. (1) Preterm—when fetus is immature <37 weeks (2) Term—when fetus is mature >37 weeks.

Presumptive treatment: treatment with a full curative dose of drugs (e.g., antibiotics) based on assumption that person is infected, not on evidence of the disease.

Preterm rupture of membrane: rupture of membranes before 37 weeks of gestation (before pregnancy is carried to term).

Prevalence rate: the number of cases of a disease existing in a given population at a specific point or period of time.

Primary infertility: infertility in a couple that has never conceived.

Prophylactic treatment: often refers to a partial dose of drugs (in comparison to the full curative dose) that may prevent a process than can lead to disease.

Prophylaxis: prevention of disease or of a process that can lead to disease.

Screening: examination of usually symptom-free individuals to detect those with signs of a given disease.

Secondary infertility: infertility in a couple that has previously conceived at least once.

Sepsis: presence of pathogenic organisms or their toxins in the blood.

Serial monogamy: situation in which a person has a series of consecutive sexual relations of various durations, such that he or she has multiple partners over time, but never more than one partner at any single point in time.

Sexual violence: any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic women's sexuality, using coercion, threats of harm or physical force, by any person regardless of relationship to the victim, in any setting, including but not limited to home and work.

Signs: abnormalities indicative of disease identified by health care provider on examination of the patient.

Spontaneous abortion: abortion that was not artificially induced; miscarriage.

Swab: a rolled piece of cotton or gauze attached to the end of a stick or clamp, used for applying medications or collecting biological samples from a surface.

Symptom: abnormal phenomenon experienced by patient and indicative of disease.

Teratogenicity: the ability to cause defects in a developing fetus—a potential side-effect of many drugs.

Transcervical procedure: any procedure that requires passage of an instrument or device through the cervix into the uterus (e.g. IUD insertion, MVA, endometrial biopsy).

Transmission: passage of disease-causing microorganisms from one person to another.

Upper genital tract infection: includes infection of endometrium, fallopian tubes, ovaries and surrounding tissues.

For more information, please contact:
Department of Reproductive Health and Research
World Health Organization, Avenue Appia 20
CH-1211 Geneva 27, Switzerland
Fax: +41 22 791 4189 / 4171
E-mail: reproductivehealth@who.int
Internet address: www.who.int/reproductive-health



World Health Organization



Reproductive Health and Research

ISBN 92 4 159265 6

