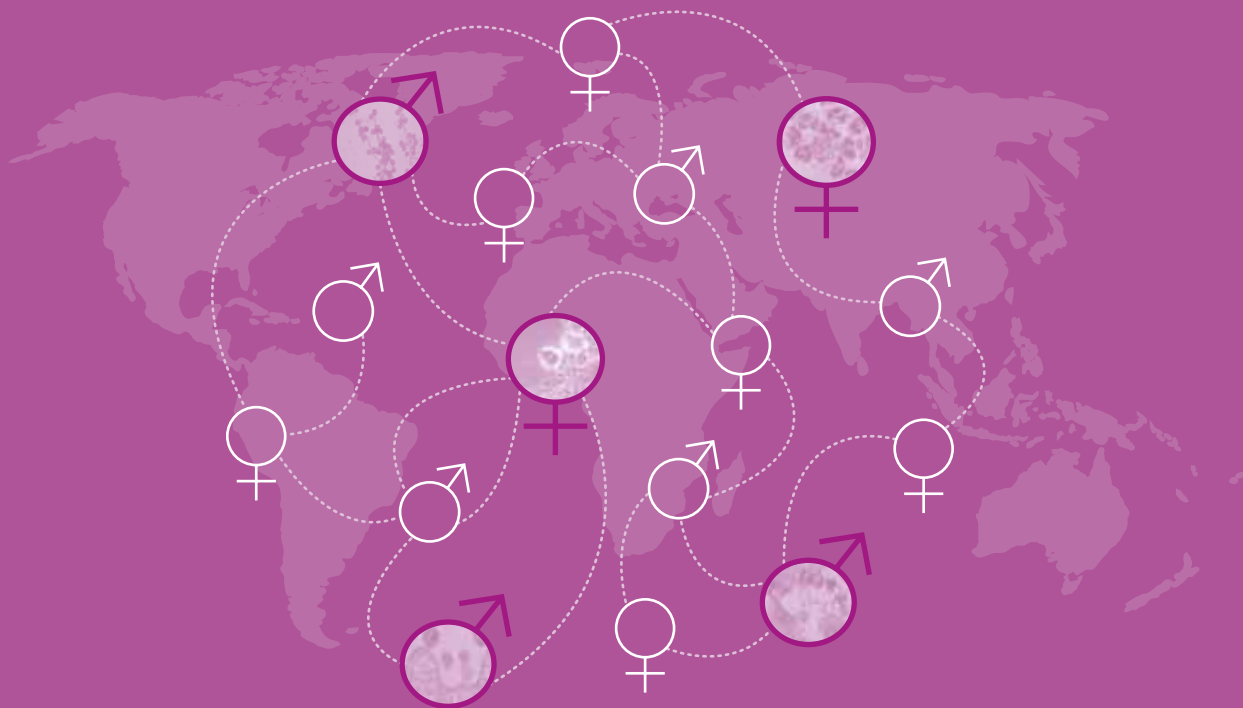


Training Modules for the Syndromic Management of Sexually Transmitted Infections 2nd Edition

Module 2 Introducing STI Syndromic Case Management

Breaking the chain of transmission

Breaking the chain of transmission



World Health
Organization

Module 2

Introducing STI Syndromic Case Management

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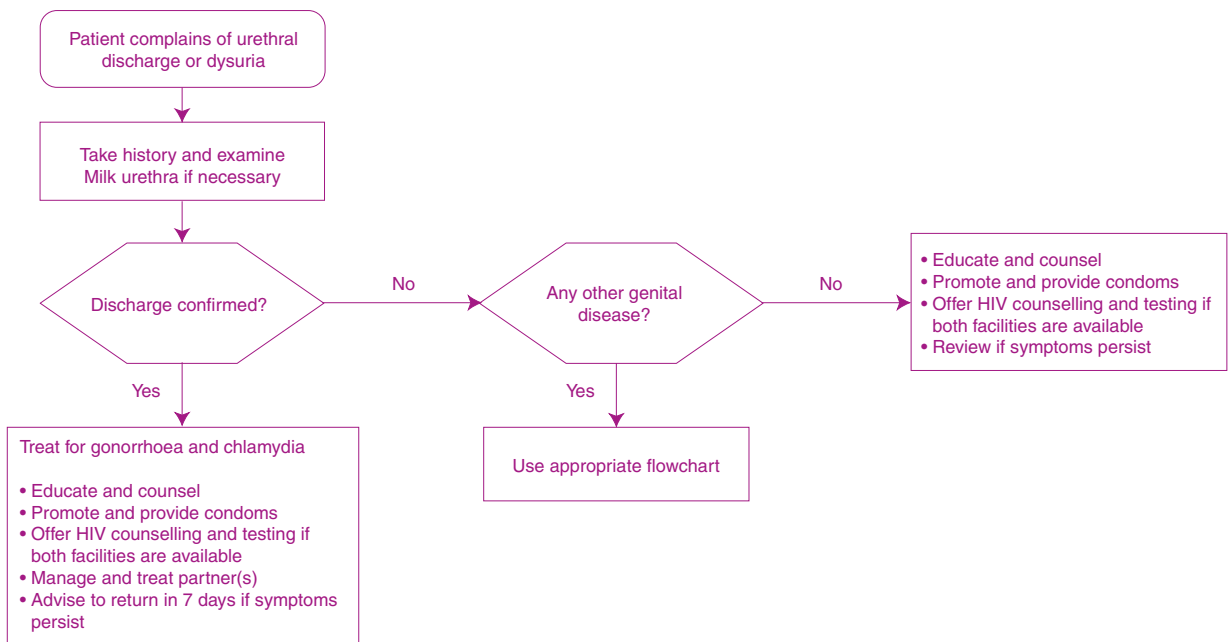
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Introduction

This module introduces you to syndromic case management and its advantages over the classic approaches to the management of sexually transmitted infections (STIs).

Before starting this module, you should already have completed Module 1, so that you are aware of the scale of the STI epidemic and the problems of reducing its transmission.

Module 4 will develop your understanding of the flowcharts much further, by explaining the process of diagnosis and treatment for particular syndromes.



Your learning objectives

By the time you have completed this module and the activities that go with it, you will be able to:

- list a number of problems associated with classic approaches to treating patients with STIs;
- identify the main features of syndromic case management;
- outline various advantages that syndromic case management offers;
- list the steps in using flowcharts to treat patients;
- consider your further learning needs, which will depend on your responsibilities as a member of a health care team.

Resources

Please keep a copy of any local flowcharts nearby when you are studying Section 3 of this module.

Remember: the quality of the syndromic case management approach will depend on you, the service provider.

1: Traditional approaches to STI diagnosis

This section will enable you to list a number of problems associated with classic approaches to treating patients with STIs.

Health-care providers generally use one of two approaches to STI diagnosis:

- *etiological diagnosis*: using laboratory tests to identify the causative agent;
- *clinical diagnosis*: using clinical experience to identify the symptoms typical for a specific STI.

Etiological diagnosis is often regarded as the ideal approach in medicine and clinical diagnosis is the choice of resort when laboratory services are not available. However, in the diagnosis and treatment of STIs, both classic approaches present a number of problems.

The etiological approach

Laboratory testing requires skilled personnel and consistent support and supplies, which are often not available. But even if they are available, is etiological diagnosis always appropriate?

- Treatment does not begin until the results are available, which usually requires patients to revisit the health centre. Infected individuals continue to transmit the infection to others and may be unwilling to return for follow-up.
- Testing facilities are not available at the primary health-care centre, where many people with an STI first seek care.
- Laboratory diagnosis can confirm diagnosis if patients with STIs are referred from primary health-care centres. It is also important for syphilis case-finding in pregnant women, but is cumbersome for diagnosis of some STIs, even when good resources are available:

“For instance, Haemophilus ducreyi, which causes chancroid, is a fastidious bacterium which cannot be easily cultured. Tests for Chlamydia trachomatis are expensive and the collection of specimens is invasive and unpleasant for both men and women. The diagnosis of primary syphilis requires a special microscope and training, and even in the best hands the spirochaete may not be visualized ...

For these reasons ... laboratory support should be confined to situations where it is essential for clinical or programmatic decisions.”

Sexually transmitted diseases: policies and principles for prevention and care. WHO/UNAIDS, 1999.

Clinical diagnosis

Using clinical diagnosis, the clinician treats STIs based on the clinical symptoms and his/her professional experience. However, some STIs cause similar symptoms, so the clinician may pick the wrong one to treat. Mixed infections are common and perhaps the clinician will diagnose only one of them. A patient with multiple infections needs to be treated for each of them. Failure to treat one infection may lead to the development of complications and the continued transmission of that STI.

Summary

Even in a well-structured health system, etiological and clinical diagnoses are problematic. Etiological diagnosis is expensive and time-consuming; it requires special resources and delays treatment although rapid diagnosis and treatment are important. With clinical diagnosis, it is easy to diagnose some STIs incorrectly and also to miss mixed infections.

For some STIs, however, work is in progress to develop diagnostic tests that are valid, quick and affordable. Where these are available, they can be strategically used to assist the syndromic diagnosis.



Activity 1

Do any of these problems with etiological and clinical diagnoses apply in your clinic or health centre? If so, which ones?

What might be the disadvantages of etiological diagnosis for your patients?

You might also like to contrast the disadvantages of etiological diagnosis with its benefits when it is available.

Please discuss these issues with colleagues.

2: Syndromic case management

In this section we introduce you to a third approach to STI treatment known as *syndromic* case management.

How does syndromic case management differ from the two approaches we discussed in Section 1? What features and advantages does it offer? We will answer these questions before explaining in Section 3 how the flowcharts work.

The key features of syndromic case management

The key features of syndromic case management are that it:

- is problem-oriented (it responds to the patient's symptoms);
- is highly sensitive and does not miss mixed infections;
- treats the patient at the *first* visit;
- makes STI care more accessible as it can be implemented at primary health-care level;
- uses flowcharts that guide the health worker through logical steps;
- provides opportunity and time for education and counselling.



Activity 2

Over the next few pages, we explain how these features of syndromic case management can help us attain the goal of rapid and effective treatment of patients with STIs.

For the moment, spend a few minutes noting down any questions or ideas you have about syndromic management.

Identifying the syndromes

A number of different organisms that cause STIs give rise to only a limited number of syndromes. A syndrome is simply a group of the symptoms a patient complains about and the clinical signs you observe during examination.

This table explains the signs and symptoms for the main STI syndromes and their causes.

Syndrome	Symptoms	Signs	Most common causes
Vaginal discharge	Unusual vaginal discharge Vaginal itching Dysuria (pain on urination) Dyspareunia (pain during sexual intercourse)	Abnormal vaginal discharge	VAGINITIS: – Trichomoniasis – Candidiasis CERVICITIS: – Gonorrhoea – Chlamydia
Urethral discharge	Urethral discharge Dysuria Frequent urination	Urethral discharge (if necessary ask patient to milk urethra)	Gonorrhoea Chlamydia
Genital ulcer	Genital sore	Genital ulcer	Syphilis Chancroid Genital herpes
Lower abdominal pain	Lower abdominal pain Dyspareunia	Vaginal discharge Lower abdominal tenderness on palpation Temperature >38°	Gonorrhoea Chlamydia Mixed anaerobes
Scrotal swelling	Scrotal pain and swelling	Scrotal swelling	Gonorrhoea Chlamydia
Inguinal bubo	Painful enlarged inguinal lymph nodes	Enlarged inguinal lymph nodes Fluctuation Abscesses or fistulae	LGV Chancroid
Neonatal conjunctivitis	Swollen eyelids Discharge Baby cannot open eyes	Oedema of the eyelids Purulent discharge	Gonorrhoea Chlamydia

The aim of syndromic management is to identify one of these seven syndromes and manage it accordingly.

Important

This training programme is concerned only with STI syndromes caused by organisms which both respond to treatment and lead to severe consequences if left untreated. Other STI syndromes, such as vesicular lesions (herpes), genital warts and dysuria in women (painful passing urine), are not in the programme.

Syndromic flowcharts

The syndromes are relatively easy to identify and it is possible to devise a flowchart for each one. A flowchart is a diagram or type of map representing steps to be taken through a process of decision-making.

A major benefit of the flowcharts is that, once trained, service providers find them easy to use – so non-STI specialists *at any health facility* are able to manage STI cases.

In turn, this means that:

- you can offer prompt treatment because patients with STIs are treated at their first visit;
- many more patients with STIs have access to treatment;
- there are opportunities for introducing preventive and promotive measures such as education and condom distribution.

Treatment for all the causative agents

While a clinical or etiological diagnosis tries to identify just one causative agent, syndromic diagnosis leads to immediate treatment for *all the most important* causative agents. This is important because mixed infections occur frequently.

This means that, if the necessary drugs are available and affordable, syndromic treatment can quickly render the patient non-infectious.

Here is an example of syndromic diagnosis and treatment in practice.

A patient complains of a discharge from the penis. Upon examination, you notice a discharge from the urethra. The sign and symptom together suggest urethral discharge syndrome.

*Urethral discharge syndrome is commonly caused by gonorrhoea and/or chlamydial infection. Not only can these cause serious complications, but also they can facilitate the transmission and acquisition of HIV. It is therefore essential that we treat the patient for **both**.*

*Such agents as *Ureaplasma urealyticum* and *Trichomonas vaginalis* can also cause urethral discharge syndrome. Should the patient be treated for these causes as well? Not necessarily, because both are less common and neither leads to complications. If symptoms persist in this male patient, you can always treat these infections on follow-up.*

As this example shows, we can use syndromic management to identify the most likely causes of a patient's symptoms and signs and treat the patient for those that have serious complications or sequelae.

Here is another example that you might like to work on.

A young woman complains of a sore. Upon examination you notice an ulcer on the outer labia. This indicates the syndrome of genital ulcer.

There are two main bacterial causes of genital ulcer: chancroid and syphilis.



Question

1. How would you manage the treatment for genital ulcer? Tick the best of these options:
 - a) treat the patient for one cause only, and ask the patient to return if the sore does not get better, so you can treat for the second cause
 - b) treat the patient for both conditions immediately
 - c) refer the patient for an etiological diagnosis.

Please turn to our answers on page 22.



Activity 3

When discussing syndromic diagnosis with any group of people, we find that they tend to raise similar criticisms. Below is a summary of the main ones. Please note down whether you agree or disagree with each one, and why.

The syndromic approach is not scientific.

Syndromic diagnosis is far too simple for a physician to use – it can even be used by nurses.

The syndromic approach fails to make use of a service provider's clinical skills and experience.

It would be better to treat the patient first for the most common cause and then, if the symptoms do not improve, treat for a second cause.

The syndromic approach results in a waste of drugs, because patients are being over-treated.

Good, simple laboratory tests such as Gram stain should be included in STI diagnosis.

Responding to criticisms of the syndromic approach

Below we answer the main criticisms of the syndromic approach. Many of our comments touch on points we have already raised, both in Module 1 and so far in this module, so the activity was partly intended to help you review the arguments – though it adds more detail.

“The syndromic approach is not scientific.”

On the contrary, it is based on a wide range of epidemiological studies in both the industrialized and developing world. This case management approach has been used and adapted in more than 20 countries throughout the world.

Validation studies have compared syndromic and laboratory diagnosis to assess the accuracy of syndromic diagnosis and found their results to be similar, so syndromic diagnosis is accurate, with limitations relating to only one of the syndromes, vaginal discharge, which we will discuss later in this module.

Other studies have thrown light on the possible impact of syndromic case management on the incidence of STIs and HIV in a given population. This was a trial in 1995 in the Mwanza region of the United Republic of Tanzania, which aimed to learn what impact STI case management and treatment-seeking behaviour would have on HIV transmission and STIs in a population. After two years, findings in the trial areas compared with control areas included:

- a reduction of 50% in the prevalence of symptomatic urethritis in men;
- a significant reduction in the prevalence of serological syphilis;
- a 38% reduction in HIV incidence.

***Consultations on STD interventions for preventing HIV:
what is the evidence?
UNAIDS, 2000.***

Another trial, three years later, in the Rakai district of Uganda had different findings but was not about syndromic case management (it took the wider approach of offering home-based treatment to everyone between 15 and 59 years of age regardless of symptoms). This was found to reduce some STIs but had no impact on HIV infection.

As usual, more research is needed, but positive lessons were learnt from these studies.

“Syndromic diagnosis is far too simple for a physician to use – it can even be used by nurses.”

Simplicity does not prevent physicians from using other tools including the thermometer or stethoscope. It is an important advantage that other service providers, in addition to doctors, can use the syndromic approach to make a diagnosis. A streamlined diagnosis and treatment process also allows health workers more time to offer education for behaviour change.

“The syndromic approach fails to make use of a service provider’s clinical skills and experience.”

Many clinicians rely heavily on their own clinical judgement, but a number of studies have shown that clinicians using their judgement get the diagnosis wrong in up to 50% of cases:

“Studies have shown that even highly experienced STD specialists using this system of clinical diagnosis will fail to make the correct diagnosis and/or will miss concurrent infections in a significant number of cases.”

Sexually transmitted diseases: policies and principles of prevention and care. WHO/UNAIDS, 1999.

“It would be better to treat the patient first for the most common cause and then, if the symptoms do not improve, treat for a second cause.”

Many patients required to return to a health centre for treatment do not do so. They may even seek treatment elsewhere. If the first course of treatment is not effective, the patient may continue to transmit the STI – at best for a few days but at worst for years.

“The syndromic approach results in a waste of drugs, because patients are being over-treated.”

In fact studies have shown that the syndromic approach is less expensive than clinical or etiological diagnoses. This is because, in weighing the alternatives, we need to include not only the high cost of etiological diagnosis or wrong clinical diagnosis but also the biological and social costs, including infertility, loss of income, family breakdown and so on.

Over-treatment in syndromic management could be said to be a waste when patients are treated for a syndromic cause which is not the cause of the discharge. This includes, for example, treatment for gonorrhoea and/or chlamydial infection as the causes of vaginal discharge in areas where they are not the predominant cause.

“Good, simple laboratory tests such as Gram stain should be included in STI diagnosis.”

Laboratory diagnosis must never be at the expense of delayed treatment or the risk of patient non-return. It continues to play an important role for selective cases, but is costly and needs external controls to ensure maintenance of the technically demanding procedures.

The vaginal discharge flowchart is the least positive at predicting etiology, especially for populations with lower rates of STIs.

You will learn more about the vaginal discharge flowchart later in this module and in detail in Module 4.

Summary

In this section we have introduced you to the syndromic approach to STI case management and explained why it is so effective. Indeed, even with sophisticated etiological facilities, syndromic diagnosis is a cost-effective approach to reducing the spread of STIs. It is a comprehensive approach to case management:

- offering complete STI care at the patient's first visit;
- treating the patient for all the important causes of the syndrome;
- making diagnosis and treatment widely and rapidly accessible;
- addressing compliance and prevention through education, partner referral and treatment and condom provision and promotion;
- using flowcharts which enable the service provider to identify causes of a given syndrome.

Remember: rapid and effective treatment of people with STIs is the best way to interrupt the cycle of transmission.

3: Using the flowcharts

This section explains what a flowchart is and how to use it. It also suggests a number of exercises for you to familiarize yourself with the process.

For more practical guidance on using each of the flowcharts, you will find Module 4 very helpful. It also provides guidance on the recommended drug treatments.

Please have a copy of all your available national flowcharts with you when you study this section. If there are none available you may use the WHO recommended flowcharts.

What is a flowchart?

A flowchart is a diagrammatic map that guides you through a series of decisions and actions you need to make. Each decision or action is enclosed in a box, with one or two routes leading out of it to another box, with another decision or action.

Upon learning a patient's symptoms, you would turn to the relevant flowchart and work through the decisions and actions it suggests.

Each flowchart is made up of a series of three sorts of step:

- the clinical problem – the patient's presenting symptom at the top – this is the starting point;
- a decision to make, usually by answering "yes" or "no" to a question;
- an action to take: what you need to do (different boxes suggest treatment, education and condom promotion, etc, and patient referral if necessary).

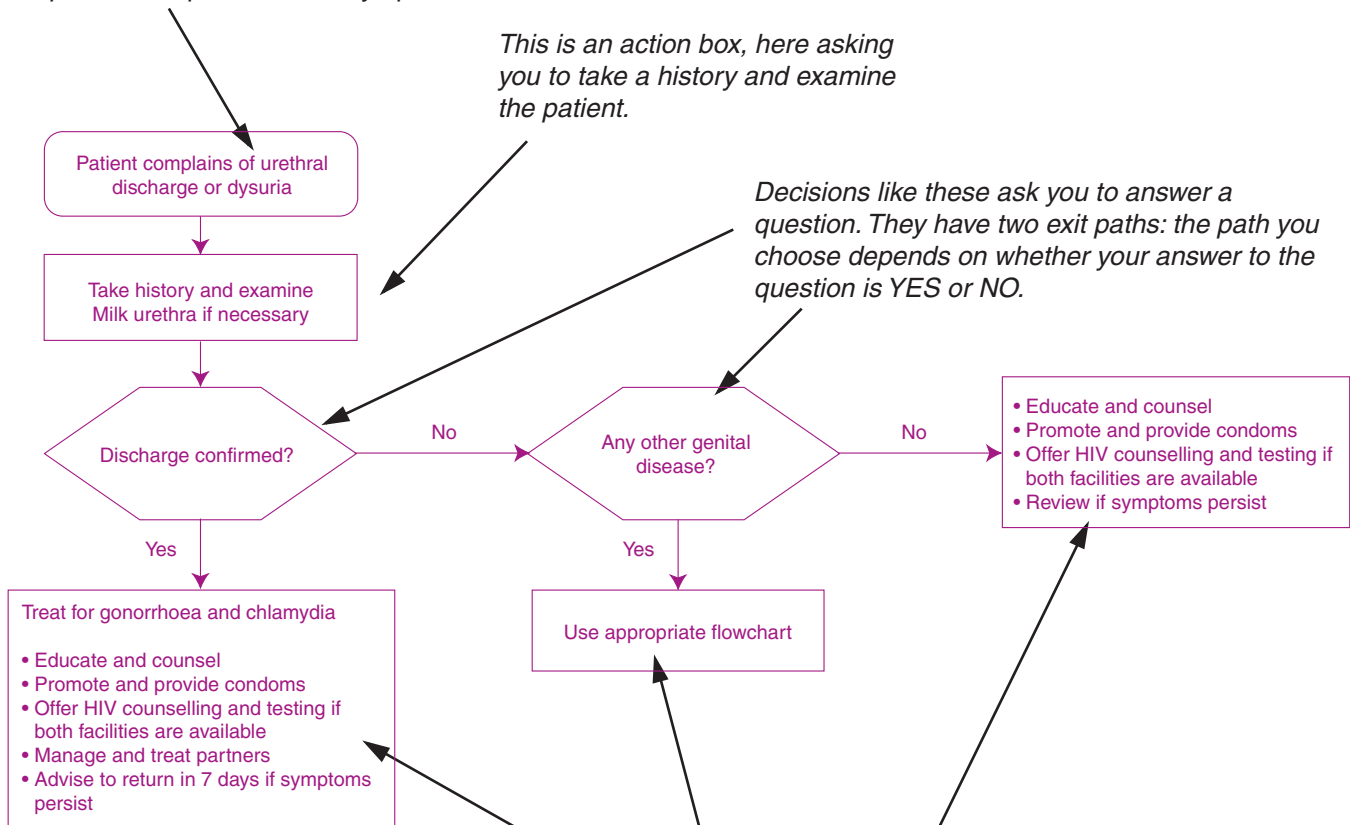
Introducing STI Syndromic Case Management

This is the flowchart for urethral discharge.

This is the starting point: the clinical problem, expressed as a symptom.

This is an action box, here asking you to take a history and examine the patient.

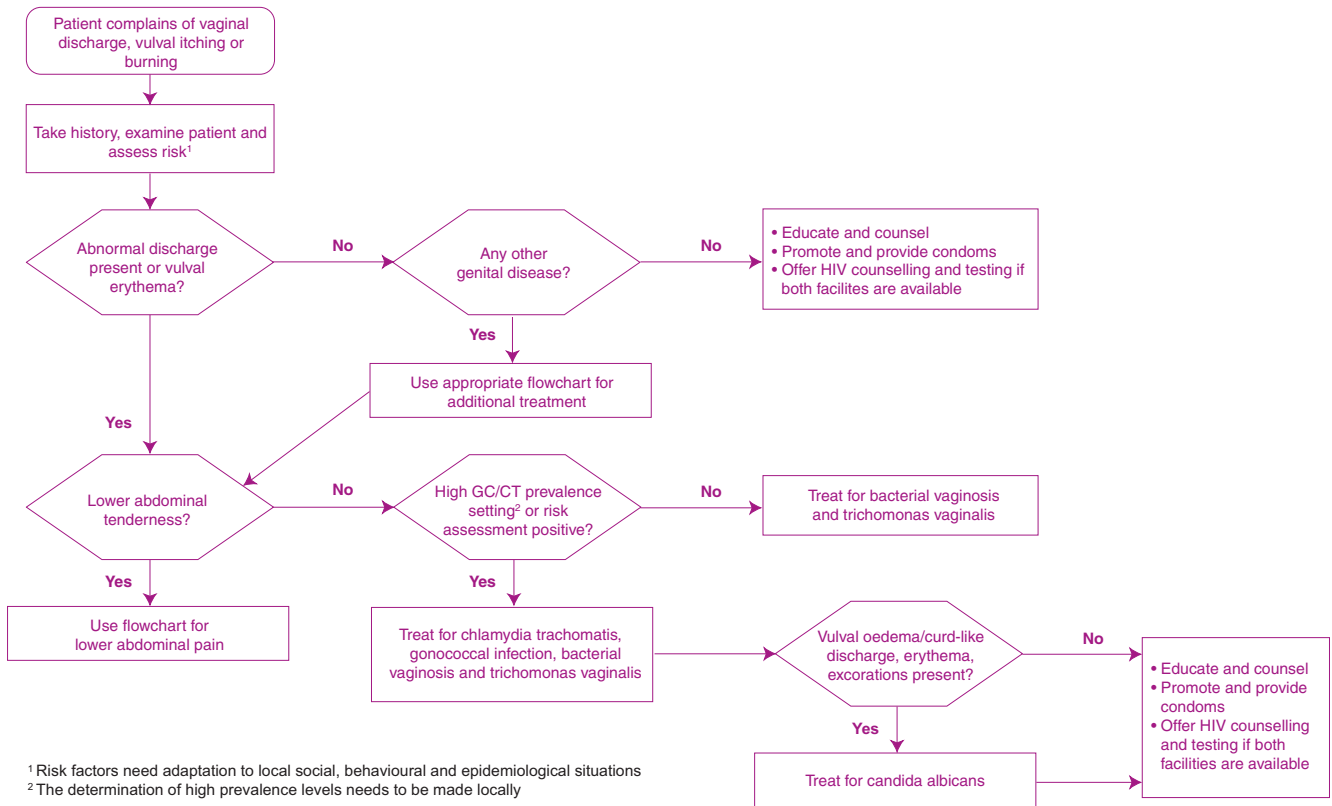
Decisions like these ask you to answer a question. They have two exit paths: the path you choose depends on whether your answer to the question is YES or NO.



Exit boxes like these explain what you need to do.

To use a flowchart, simply start at the clinical problem box and work through step by step until you arrive at an exit box at the end of a branch.

This is the flowchart for vaginal discharge.



This flowchart is more complex in that it asks more questions – but you would work through it in the same way.

We said earlier in this module (on page 12), that this flowchart is not straightforward. No vaginal discharge flowchart is ideal because vaginal discharge indicates vaginal infection but is a poor predictor of cervical infection, especially in adolescent females. For settings where the prevalence of gonorrhoea and/or chlamydia is high in women with vaginal discharge, the flowchart includes these two infections in the treatment. In low prevalence regions, the country may opt to treat for only vaginal infections and leave out cervical infections.

What other predictors of cervical infection are there?

Cervical infection is often associated with a number of demographic and behavioural **risk factors**. *These need adapting to the local situation.* In a number of studies, these are some of the associated factors for cervical infection:

- age below 21 years (or in some situations 25);
- unmarried;
- more than one partner in the last 3 months;
- a new partner in the last 3 months;
- current partner has an STI or has recently started to use condoms.



Activity 4

Please turn to your national flowcharts now and spend a few moments looking through them. Some are more complicated than the ones we have discussed so far, but they work in exactly the same way.



Questions

If you have copies of the flowcharts, use these questions to familiarize yourself with the way they work. (Please ignore any questions which do not relate to locally prevalent etiologies.)

2. A male patient complains that he has a sore penis. Upon examination, you can see no discharge, but there is an ulcer on the penis. The sore is large and there is no history of recurrence.

What flowchart should you use?

For what do you treat this patient?

3. A young woman complains of a pain in her stomach, low down. You take her history and examine her. She tells you that her periods are normal and she has never been pregnant. She has no rebound tenderness but clearly feels pain when you palpate her abdomen.

What flowchart should you use?

And what action do you need to take?

A week later, the same woman returns. She tells you that she feels no better, though she is taking all the tablets you gave her as you suggested. Upon examination, you discover that she has a temperature of 38.2°C.

What action do you now take?

4. A middle-aged man tells you that he has felt pain in his groin for a week or so. Upon examination, you confirm that he has a painful fluctuating mass in the right groin. The patient winces when the mass is touched. There are no ulcers on his penis.

What flowchart should you use?

For what do you treat him?

5. A woman attending the clinic with her four-day-old baby asks you to look at his eyes. You notice that his eyelids are swollen and there is a purulent discharge in both eyes.

What flowchart should you use?

For what do you treat the child?

Who else do you treat, and for what?

6. A young man complains of a swollen scrotum. An examination confirms the swelling but the testis is not rotated or elevated and there is no history of trauma.

What flowchart should you use?

For what do you treat him?

7. A young man tells you shyly that he has a discharge from his penis. You milk the urethra or ask him to milk the urethra; upon doing so, you confirm that there is a slight discharge. There are no other lesions or ulcers.

What flowchart should you use?

For what do you treat the patient?

The answers to these questions are on pages 22–23.

Having completed these simple questions, you already have a good idea about the practical use of the flowcharts in syndromic diagnosis.

At this point in learning about syndromic case management of STIs, many people have questions and concerns. If this applies to you, please use the next activity.



Activity 5

Having almost completed Module 2, note down:

- any questions that you still have about syndromic case management of STIs;
- any problems you anticipate in implementing syndromic case management at your health-care centre.

Review

In this module, we have provided an overview of syndromic case management of people with STIs. You should now be able to:

- list a number of problems associated with classic approaches to treating patients with STIs;
- identify the main features of syndromic case management;
- outline various advantages that syndromic case management offers;
- list the steps in using flowcharts to treat patients;
- consider your further learning needs, which will depend on your responsibilities as a member of a health care team.

You have also begun to familiarize yourself with how the flowcharts work and explored their advantages as well as your questions and concerns.

It is essential to reduce the spread of STIs and the cycle of transmission and reinfection. Syndromic case management can help us do this. This course has been designed to help you provide the best service possible.

Please explore syndromic case management further with your colleagues or supervisor. On the next page you will find some tips to help you become more familiar with the flowcharts and syndromic case management.

Action plan

Below are some tips for your self-development as you continue to study.

1. Make sure you have the STI flowcharts to hand at all times. (Check: a wall-chart or pocket version may be available.)
2. Glance back at any points you noted on page 19. Arrange to discuss them with colleagues or your tutor or supervisor.
3. If you have not already done so, plan the rest of your learning as we described in the Programme Introduction (at the beginning of Module 1). If you are at all unsure about this, discuss with your manager what your responsibilities will be.
4. If one of your colleagues is already using the syndromic approach, try to arrange to observe him or her at work. You might pick up valuable tips to make your own learning easier. (Please remember to ask any patient's permission to observe; respect their right to privacy at all times.)

Answers

1. Well done if you chose b): "Treat the patient for both conditions immediately". Clinically, it is not possible to distinguish the cause of a genital ulcer with any accuracy, so the safest option is prompt treatment for both causative agents, leaving the patient no longer infectious.

Option a): "Treat the patient for one cause only, and ask the patient to return if the sore does not get better" presents problems typical of the clinical approach to diagnosis and treatment. Patients not cured by the first treatment might not return; they may continue to spread the infection. There is a further risk that the patient might seek treatment elsewhere and be managed inadequately.

If you ticked c): "Refer the patient for an etiological diagnosis", remember that we have stressed the many problems that can arise from a delay in treatment – even supposing the necessary tests are available locally.

2. *A male patient complains that he has a sore penis. Upon examination, you can see no discharge, but there is an ulcer on the penis. The sore is large and there is no history of recurrence.*

The correct flowchart to use is the one for genital ulcers.

The patient should be treated for syphilis, chancroid and, depending on local prevalence, herpes.

3. *A young woman complains of a pain in her stomach, low down. You take her history and examine her. She tells you that her periods are normal and she has never been pregnant. She has no rebound tenderness but clearly feels pain when you palpate her abdomen.*

The correct flowchart to use is the one for lower abdominal pain:

- manage for PID;
- review progress in three days;
 - I. if not improved, refer the patient;
if improved, continue treatment; and
 - II. educate and counsel;
 - III. offer HIV counselling and testing if both facilities are available.

You would refer the woman if she returns with no improvement.

4. *A middle-aged man tells you that he has felt pain in his groin for a week or so. Upon examination, you confirm that he has a painful fluctuating mass in the right groin. The patient winces when the mass is touched. There are no ulcers on his penis.*

The correct flowchart to use is the one for inguinal bubo.

You should treat the patient for lymphogranuloma venereum and chancroid. You will notice that there is no treatment for syphilis because there is no ulcer.

5. *A woman attending a clinic with her four-day-old baby asks you to look at his eyes. You notice that his eyelids are swollen and there is a purulent discharge in both eyes.*

For these signs, you would use the flowchart for neonatal conjunctivitis, which tells you to treat the child, the mother and her partner(s) for gonorrhoea and chlamydia.

If there is no improvement in the discharge after three days, you would refer the child.

6. *A young man complains of a swollen scrotum. An examination confirms the swelling but the testis is not rotated or elevated and there is no history of trauma.*

The correct flowchart to use for this patient is the one for scrotal swelling.

The correct treatment is for both gonorrhoea and chlamydia.

7. *A young man tells you shyly that he has a discharge from his penis. You ask him to milk his urethra; upon doing so, you confirm that there is a slight discharge. There are no other lesions or ulcers.*

The correct flowchart to use for this syndrome is the one for urethral discharge.

Treatment should be for both gonorrhoea and chlamydia.

Glossary

AIDS	Acquired immunodeficiency syndrome caused by the human immunodeficiency virus (HIV)
Cervicitis	Inflammation of the cervix, usually caused by gonorrhoea or chlamydia infections
Chlamydial	Caused by chlamydia , as in chlamydial urethritis
Clinical diagnosis	Using clinical experience to establish the cause of an infection or disease
Clinical problem box	The box on a flowchart that states the typical symptom(s) of a particular syndrome
Comprehensive case management	Management of STIs that includes treatment, education, counselling and partner management
Dysuria	Pain on urination
Etiologic/etiological diagnosis	Using laboratory tests or microscopy to identify a causative agent
Etiologies	Causative agents
Fistulae	Abnormal passage between a hollow organ and the skin surface
Fluctuation	Movement of fluid such as pus within a bubo or abscess
Gram stain	A laboratory technique using a staining dye to identify bacteria
Inguinal lymph nodes	Lymph nodes in the groin
Oedema	Swelling which occurs when fluid builds up in body tissues
Ophthalmia neonatorum	Conjunctivitis occurring in a baby less than one month old, usually due to gonorrhoea or chlamydia infection
Palpate/palpation	To examine or feel with the hand
Partner management	Contacting, treating and educating all the sexual partners of a patient treated for STIs

Plasma	Colourless fluid that is part of blood or lymph
Purulent	Discharging pus
Rebound tenderness	One of the signs of peritonitis or an intra-abdominal abscess which you would look for during an examination for the syndrome of lower abdominal pain . The patient will feel severe pain when you press down slowly and gently on a tender area and then suddenly release the pressure
Sign(s)	Indication of the existence of disease or any objective evidence of a disease as is perceptible to the examining health-care provider
Symptom(s)	Any subjective evidence or perception of disease or of a patient's condition
Syndromic case management	The management of a patient whereby a syndrome (a consistent group of symptoms and easily recognized signs) is used as a basis for the treatment of the causative organisms
Testis/testes	Either of the paired egg-shaped glands normally situated in the scrotum, in which the spermatozoa develop
Trauma	Any physical wound or injury, sometimes also used to describe the shock following a wound or injury
Urethra	The duct through which urine is discharged from the bladder
Vesicular lesions	Small blisters which, when occurring on the genitals, are usually indicative of herpes infection

Abbreviations

LGV	lymphogranuloma venereum
PID	pelvic inflammatory disease
RPR	rapid plasma reagin
STD	sexually transmitted disease
STI	sexually transmitted infection
UNAIDS	Joint United Nations Programme on HIV/AIDS
VDRL	Venereal Disease Research Laboratory
WHO	World Health Organization