SEXUALLY TRANSMITTED INFECTIONS

OBJECTIVES

- 1. Recognize that sexually transmitted infections (STIs) are caused by awide array of organisms.
- 2. Describe the different routes of transmission of common STIs.
- 3. Recognize the epidemiology of STIs in KSA.
- 4. Communicate properly with a patient presenting with a suspected STI.
- 5. Apply the medical knowledge to properly take history, examine, orderand interpret laboratory tests, manage, and counsel a patient presentingwith urethral or vaginal/endocervical discharge.
- 6. Apply the medical knowledge to properly take history, examine, orderand interpret laboratory tests, manage, and counsel a patient presentingwith a genital ulcer.
- 7. Apply the medical knowledge to properly take history, examine, orderand interpret laboratory tests, manage, and counsel a patient presentingwith an anogenital wart.
- 8. Recognize latent syphilis and able to order screening tests for it.
- 9. Recognize the common complications of common STIs.
- 10. Discuss the natural history of HIV, interpret the results of HIV tests, andmanage a patient with a positive result.
- 11. Manage a spouse of a patient who is HBsAg +ve.

QUISTIONS !

- What is the most common organism responsible for NGU (Nongonococcal urethritis) is:

- A- Neisseria Gonorrhoeae

- B-Bacterial Vaginosis

- C- Chlamydia Trachomatis

- D-Treponema Pallidum

- What is the treatment of patient with symptoms of urethritis who have laboratory evidence of gonococcal infection?

- A-Ceftriaxone 250 mg + doxycycline 100 mg

- B-Azithromycin 1 gram + Ceftriaxone 250 mg

- C-doxycycline 100 mg + Azithromycin 500 mg

- D-Ceftriaxone 500 mg

- During her first prenatal visit, a woman asks why she is being screened for syphilis. Which of the following is the best response by the healthcare provider?

- A-“If you have the infection, the safest time to treat is during the first trimester”

- B-“Syphilis can be transferred from you to your baby through the placenta”

- C-“We must report all cases of syphilis to to ministry of health”

- D-“If you test positive you may need to be admitted to the hospital for care”

- When Follow up should be scheduled after the initial visit for STI patient?
- A-within 1 week
- B- 2-3 weeks
- C- 4-6 weeks
- D- 8-12 weeks

- A patient who is positive for HBsAg asked you is it safe to have sexual intercourse with their partner who has an anti-HBs level of 5 milli-international units/mL. Which of the following is an appropriate response?

- A) You can have safe sexual intercourse without the need for a condom

- B) You can have safe sexual intercourse but with the use of a condom

- C) You can't have safe sexual intercourse even with the use of a condom

- D) You can have safe sexual intercourse once you take antiviral therapy

EPIDEMIOLOGY OF STI

- There are a lot of infections that are considered STIs!
- More than 30 different bacteria, viruses and parasites are known to be transmitted through sexual contact.

Bacteria	Chlamydia Trachomatis
	Neisseria Gonorrhoeae
	Bacterial Vaginosis
	Treponema Pallidum
	Chlamydia trachomatis serovars L1, L2, or L3 (Lymphogranuloma Venereum LGV)
Viruses	HIV
	Hepatitis B
	Hepatitis A
	Hepatitis C
	Human papilloma virus (HPV)
	Herpes simplex virus (1&2)
	Molluscum contagiosum

Parasite	Trichomonas Vaginalis
	Sarcoptes scabiei (scabies)
Insect	Pediculosis pubis (lice)

https://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-(stis)

ROUTES OF STIS TRANSMISSION.

- STIs can be transmitted through vaginal, anal, oral, and skin contact.

STI	Transmission
HPV	transmitted through direct contact with infected skin or mucosa.
Herpes Simplex 1- 2	occurs via oral-oral, oral-genital, or genital-genital contact, as well as contamination of skin abrasions with infected oral secretions.
Chlamydia	Hetero- and homo-sexual intercourse
Neisseria gonorrhoeae	Hetero- and homo-sexual intercourse and oral-genital contact
Hepatitis B	Hetero- and homo-sexual intercourse

HIV* *HIV transmission is less among circumcised males.	
Sexual exposure	**Risk per 10,000 exposures to an infected source (risk)**
Receptive anal intercourse	138 (1/72)
Insertive anal intercourse	১১ (১/৯০০)
Receptive penile-vaginal intercourse	৫ (১/১২৯০)
Insertive penile-vaginal intercourse	৪ (১/২৯০০)
Receptive or insertive penile-oral intercourse	০-৪

EPIDEMIOLOGY OF STIS IN KSA.

- A glimpse about the epidemiology of STIs in KSA.

Table 1. Total number and annual incidence of sexually transmitted infections per 100,000 population in Saudi Arabia from 2005 to 2012.

Infection	Total number of infections (%)	Annual incidence of infection per 100,000 population
Nongonococcal urethritis	35,613 (51.7)	25.4
Trichomoniasis	12,679 (18.4)	9.1
HIV	9,843 (14.3)	7.0
Syphilis	1,769 (2.6)	1.3
Human papillomavirus (genital warts)	4,018 (5.8)	2.9
Neisseria gonorrhoeae	3,006 (4.4)	2.1
Genital herpes	1,508 (2.2)	1.1
Chancroid	450 (0.7)	0.3
Total	**68,886**	**92.1**

*Nongonococcal urethritis (NGU): Urethral inflammation that is not the result of infection with *Neisseria gonorrhoeae*.

https://wwwn.cdc.gov/nndss/conditions/nongonococcal-urethritis/case-definition/1996/

- This table is from a retrospective analysis of the annual STI cases as obtained from the Ministry of Health (MOH) KSA, from 2005 to 2012. The data are based on the annual registry statistics of adults with STIs as obtained from the Department of Preventive Medicine, the main source of data.

https://jidc.org/index.php/journal/article/view/27580336

INCUBATION PERIODS OF COMMON STI

- What are the incubation periods of common sexually transmitted infections?

Infection	**Incubation Period**
Chlamydia trachomatis	Men: 5-10 days women: 7-14 days
N. Gonorrhea	Men: 4-8 days Women 10 days
Trichomonas vaginalis	4-28 days
HSV	2-7 days
Primary Syphilis	7 to 90, median is 21 days

ASYMPTOMATIC STI

- for common sexually transmitted infections, what is the percentage of asymptomatic infection?

Infection	Percentage of asymptomatic infection	
	Men	Women
Chlamydia trachomatis	৬০%	৫৯%
N. Gonorrhea	৪০%	৬০%
Trichomonas vaginalis	৬৯%	৬০-৫৯%
HSV	৬৯-৫০%	

HISTORY TAKING

HISTORY APPROACH OF STI

- How to communicate properly with a patient presenting with a suspected STI?
- Explain the rationale for some of the questions asked.
- Using clear and understandable language which both the clinician and patient are comfortable (for example: you can use slang).
- Awareness of the signs of anxiety and distress from the patient.
- Recognizing non-verbal cues from the patient.

- What would be the chief complaint of a patient with a possible STI?
- complaints where an STI is very likely (top of the differential diagnosis):

1-Urethral discharge (in men) or vaginal/endocervical discharge (in women) (urethritis/vaginitis or cervicitis):

-Most common cause is NGU.

-The most common organism responsible for NGU is chlamydia thachomatis, followed by Mycoplasma genitalium.

-Another common organism responsible for NGU is trichomonas vaginalis.

-Also neisseria gonorrhoeae is a common cause for urethral/vaginal discharge (gonococcal urethritis).

-Please note that vaginal discharge can be caused by non-sexually transmitted infections such as bacterial vaginosis and vulvovaginal candidiasis and other non-infectious causes such as: -use of spermicides and soap on genital area, might irritate the urethra causing non-infectious urethritis.

-repeated vigorous stripping or milking of the urethra, which might irritate the urethra causing non-infectious urethritis.

- The patient tells you that he/she has a urethral or vaginal discharge, what should be your next questions?

1-Consistency of the discharge: can range from mucoid or watery to frankly purulent, and can be associated with mucus threads.

2-Amount: copious or scant (Sometimes the discharge is so scant that patient only notice stained underwear in the morning).

3-Timing: may be present throughout the day or may be scanty and only present on the first morning void.

4-Smell: odorless or malodorous.

5-Associated symptoms in both genders: dysuria, polyurea,

6-Associated symptoms in males: testicular pain or swelling.

7-Associated symptoms in females: vaginal pruritus, intermenstrual or post coital bleeding or menorrhagia.

- **2-Ulcer in the sexual contact area:**

-The majority of genital ulcers are caused by sexually transmitted infections (STIs), although there are noninfectious etiologies that should be considered once STIs have been ruled out.
-The most common STI cause is herpes simplex viruses (HSV) 1 or 2.
-Syphilis caused by Treponema pallidum.
-lymphogranuloma venereum (LGV) caused by L1, L2, and L3 serovars of Chlamydia trachomatis.
-chancroid caused by Haemophilus ducreyi.
-genital ulcers increase the risk of acquiring HIV.

- **The patient tells you that he/she has a genital ulcer, what should be your next questions?**

-The number of lesions.
-Whether the lesions are painful, Painful ulcers tend to be more typical of HSV and chancroid, while ulcers associated with syphilis, LGV are usually painless.
-The presence of swelling in the inguinal area (lymphadenopathy). -constitutional symptoms.
-Associated symptoms:
-Dysuria: A complaint of dysuria may be due to the anatomic location of a genital ulcer, and painful urination may be the chief complaint in a female with an ulcerative labial or urethral lesion, or in a male with an ulcer at the urethral meatus or on the glans. Dysuria may also suggest a concurrent diagnosis of a sexually transmitted urethritis like NGU or Gonorrhea.
-Are the ulcers recurrent? A history of recurrent ulcers would suggest HSV infection.
-If the ulcers are recurrent are they proceeded by any prodromal symptoms such as local mild tingling or shooting pains in the buttocks, legs, and hips.

- **3-Anogenital warts (condyloma acuminate):**
- -External anogenital warts are typically found on the vulva, penis, groin, perineum, anal skin, perianal skin, and/or suprapubic skin
- -The warts are typically asymptomatic (painless) but occasionally can be pruritic.
- **What is the organism responsible for anogenital warts?**
- Anogenital warts are caused by genital HPV which are divided into low-risk and high-risk types based upon associated risk for cancer in any body area. There are more than 200 types of HPV, The low-risk types HPV 6 and/or HPV 11 are detected in around 90% of anogenital warts.
- It is important to ensure privacy and confidentiality to the patient during history taking of a patient with a suspected STI.

- **Associated symptoms you should ask a patient with a genital discharge, ulcer, or wart (please note that if the patient present with the following symptoms as his/her chief complaint, don't forget adding STIs it to your differential) :**
- 1-dysurea.
- 2-lower abdominal/pelvic/peri anal/anal/inguinal/penile/scrotal pain. 3-Scrotal/inguinal swelling.
- 4-Dysparunia (in females).
- 5-Post coital and intermenstrual bleeding (suggestive of cervicitis). 6-rectal discharge or bleeding
- 7-fever.

- **What is the 5Ps mnemonic that you should ask any patient with a suspected STI?**
- The Five P's:
  Partners, Practices, Prevention of Pregnancy, Protection from STDs, and Past History of STDs

What should ask in social history in a patient with a suspected STI?

-Married or single?

-History of sexual contact in the last 90 days? If yes marital or extra-marital? When did it exactly happen? (in order to determine the incubation period). How many partners? Homosexual, heterosexual, or both? Sites of sexual contact (oral, genital, rectal). Was protection used or not?

-Does the partner have a known STI?

-Travel history: visiting suspicious places (massage parlors, night clubs...etc) or dealing with suspicious people (private dancers, sex workers).

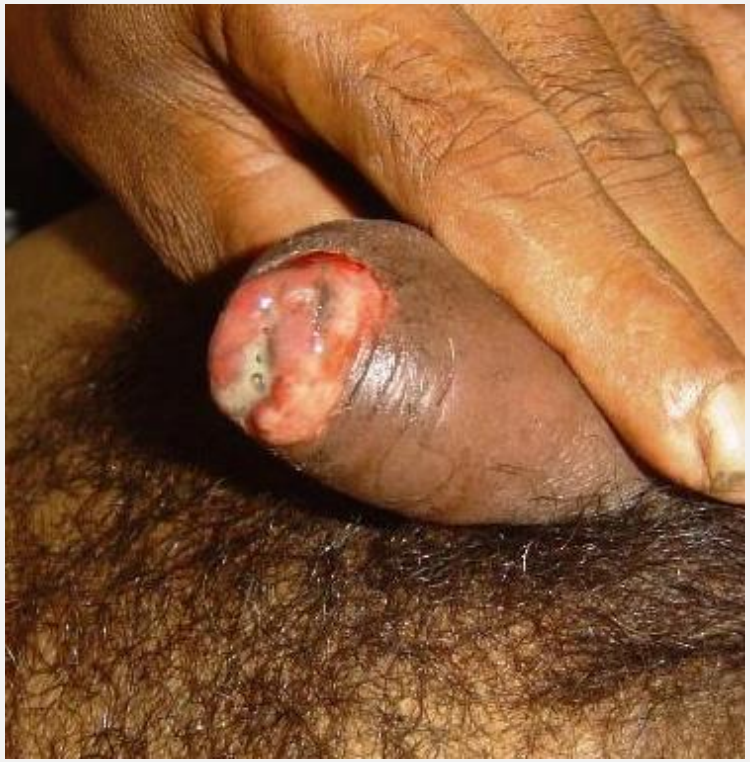
-Use of alcohol or illicit drugs.

- **Why Drug history is important in a patient with a suspected STI?**
- Patients should be questioned about medication use since reactions to medications, systemically or locally (eg, over-the-counter products such as antibacterial ointments), may cause genital ulcers.
- **What should ask in the past medical history in a patient with a suspected STI?**
- Past history of other STIs and prior STI testing.
- **Don’t forget to ask female patients about their last menstrual period.**

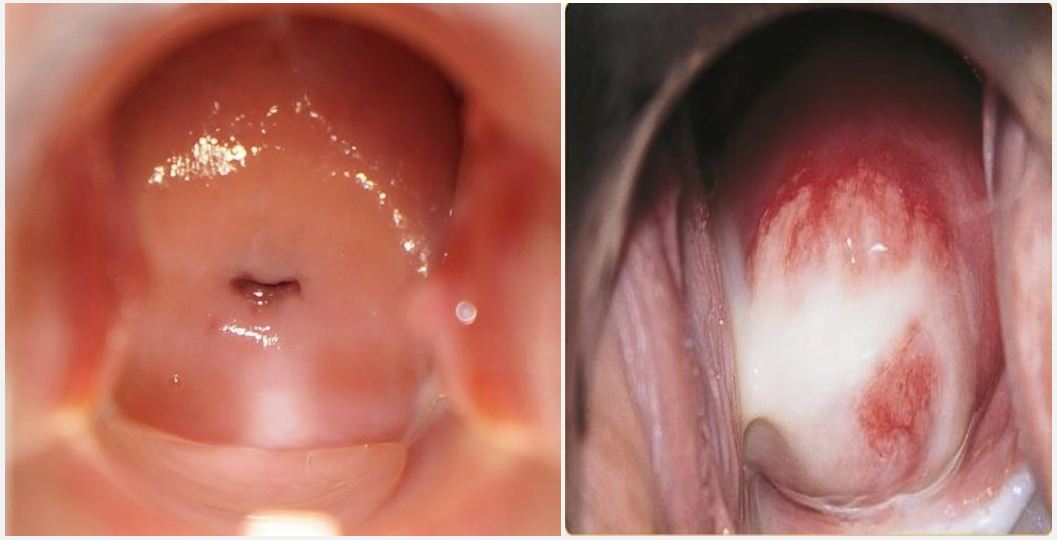
PHYSICAL EXAMINATION

EXAMINATION OF URETHRAL/VAGINAL OR CERVICAL DISCHARGE

- In men:
- May only be evident after ”stripping” or “milking”.
- Mucopurulent or purulent discharge confirms urethritis diagnosis in a symptomatic male patient.
- Check the scrotum for signs of complications such as epididymitis.
- Digital rectal examination should be done in those who have symptoms that may indicate underlying prostatitis.

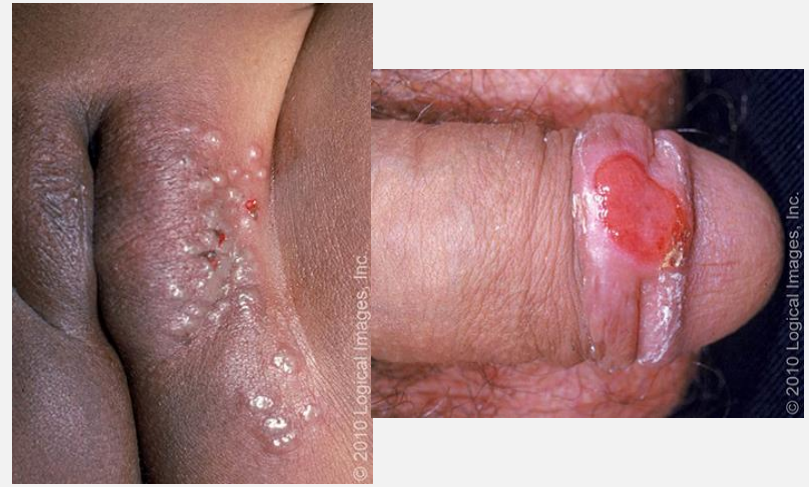


- In women:
- Gonorrhea and chlamydia usually affect the cervix.
- You should look for swelling, erythema and mucopurulent discharge at the cervical opening.
- Induction of endocervical bleeding in cervicitis.



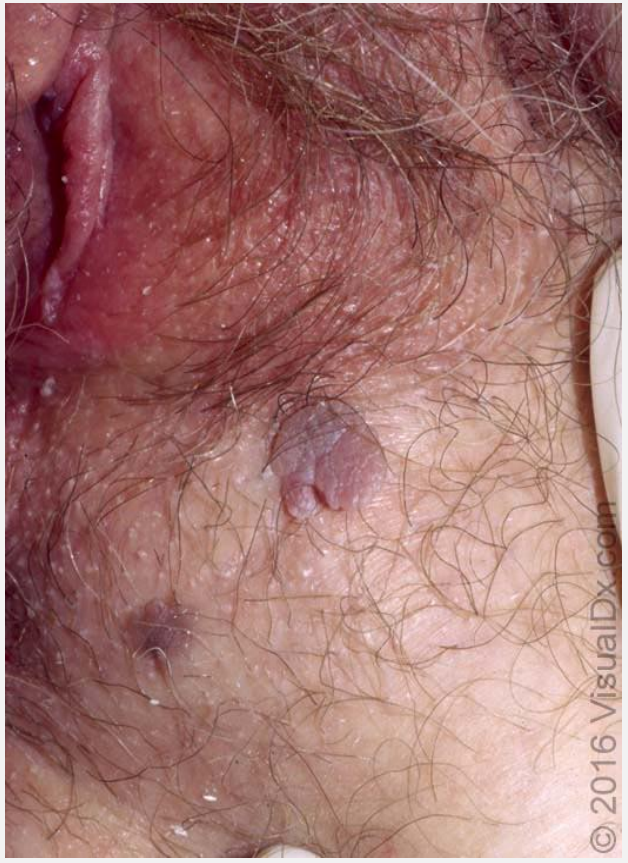
EXAMINATION OF GENITAL ULCER

- The number and appearance of lesions can help with the diagnosis.
- Herpetic lesions can begin as one or a group of vesicles.
- Syphilitic lesions is commonly a single well-circumscribed painless ulcer (chancre).
- You should examine the inguinal lymph nodes for lymphadenopathy and tenderness.



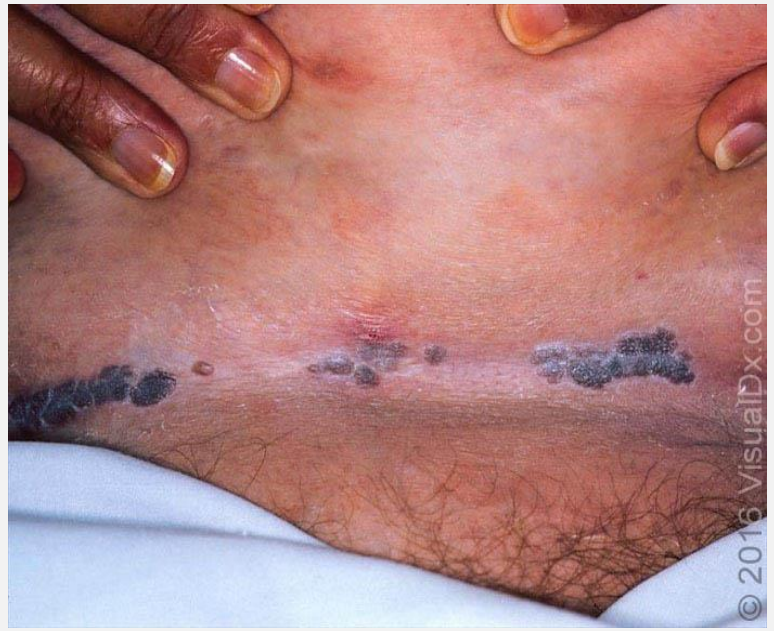
EXAMINATION OF ANOGENETIAL WARTS

- Anogenital warts can be single or multiple.
- The shape can be flat, dome-shaped, pedunculated amongst other various shapes.
- The surface can be smooth, verrucous, or lobulated.
- The color can be white, erythematous, skin colored, violaceous, brown or hyperpigmented.
- They are usually soft to palpation and can range in the diameter from 1mm to several centimeters.



WHAT IS THE DIFFERENTIAL DIAGNOSIS OF GENITAL WARTS?

- Common benign papular cutaneous condition (seborrheic keratosis, acrochordon, or pearly penile papules… etc.)
- STDs (Condyloma latum of secondary syphilis, and molluscum contagiosum)
- Inflammatory conditions (lichen nitidus and papulosquamous lesions of lichen planus)
- Premalignant or malignant disorders (Bowenoid papulosis, and giant condyloma acuminatum)



ARE HISTORY AND PHYSICALEXAMINATION ENOUGH TO DETERMINE THE ETIOLOGY OF A GENITAL ULCER?

- No, because it may lead to a false diagnosis and treatment.
- The symptoms, signs and appearance my vary due to individual pathogens and a presence of a coinfection.
- Immunocompromised patients may have atypical presentations, such as a widespread and severe disease.

INVESTIGATIONS

What should be your general approach to testing in a patient with a genital ulcer?

- Patients should be tested for common STIs regardless of the clinical presentation, Patients with an ulcerative sexually transmitted infection (STI) are at increased risk for coinfection with other STIs.
- Thus, individuals should also be tested for HIV, gonorrhea, and chlamydia. Also, testing for hepatitis B and hepatitis C may also be considered.
- Some patients may have a known cause for their STI (eg, they know the infection their partner has or have recurrent herpes simplex virus [HSV] infection). For such patients, we still test for other common STIs because more than one infection may be present.

What if initial testing for STI causes of genital ulcer came back negative?

- if initial testing for STIs is negative test for non-sexually transmitted infections and noninfectious causes.

What should be included in the baseline testing of a patient with a genital ulcer or urethral/vaginal discharge?

- Patients who present with genital ulcers should undergo testing for common causes of genital ulcers, such as HSV 1&2 and syphilis.
- Patients who present with urethral/vaginal or endocervical discharge should undergo testing for common causes of urethritis/vaginitis or cervicitis such as chlamydia and gonorrhea.
- as well as other STIs (eg, HIV, hepatitis B, and hepatitis C).

What tests can you order for a patient presenting with urethral/vaginal discharge?

1-Gram stain and culture of urethral (men), endocervical swab:

- -The Gram stain should be examined for the presence of WBCs (specifically polymorphonuclear neutrophils [PMNs]) and any organisms.
- -The presence of PMNs without any visible organisms is consistent with NGU, whereas gonococcal urethritis may be diagnosed by the demonstration of gram-negative intracellular or extracellular diplococci in the urethral exudate.
- -A Gram stain has low sensitivity in women compared with men due to the possible presence of other nonpathogenic gram-negative diplococci in cervical secretions.

What tests can you order for a patient presenting with urethral/vaginal discharge?

2- In men First-void or first-catch urine:

- -First-void urine: the initial portion of the first urinary stream after awakening.
- -First-catch urine: the initial portion of any urinary stream. (ideally at least one hour after the previous micturition).
- -both can be examined using the following:
- -dipstick: positive leukocyte esterase (this is diagnostic of urethritis).
- -microscopy: the presence of ≥10 WBC/hpf (this is diagnostic of urethritis).
- -nucleic acid amplification testing (NAAT) for identification of the causative organism(can detect: n. gonorrhea, chlamydia t., trichomonas vaginalis, Mycoplasma genitalium, and ureaplasma urealyticum) , There are several ways of amplification including polymerase chain reaction (PCR), strand displacement assay (SDA), or transcription mediated assay (TMA).

What tests can you order for a patient presenting with urethral/vaginal discharge?

3- in women self- or clinician-collected vaginal swab or a clinician-collected endocervical swab or a urine sample (urine sample NAAT is less sensitive in women) can be examined for:

-nucleic acid amplification testing (NAAT) for identification of the causative organism.

Why is it important to identify the organism causing the urethral/vaginal discharge?

- -for accurate diagnosis and notification to ministry of health in order to monitor the epidemiology of STIs.
- -for partner treatment.

What tests can you order to diagnose herpes simplex 1 or 2?

- 1-the lesion should be swabbed and directly tested for HSV. Nucleic acid amplification methods (NAATs), including polymerase chain reaction (PCR) assays, are now commercially available and are the test of choice, as they have a higher sensitivity than culture or direct immunofluorescent antibody testing.
- 2-If HSV PCR is not available, a viral culture of the base of the ulcer can be obtained. If a vesicle is present, vesicular fluid is preferred because of its higher diagnostic yield.

What are the types tests done to screen for or diagnose syphilis?

There are serological tests and Direct methods:

- Direct methods such as Darkfield microscopy and direct fluorescent antibody (DFA) testing, they are not routinely available in clinical settings because these methods require special equipment to perform the test, as well as considerable experience and expertise to properly interpret the results.
- Serological tests which are divided into:
- 1-nontreponemal tests: rapid plasma reagin (RPR) test and the Venereal Disease Research Laboratory (VDRL) test.
- 2-treponemal test: Treponema pallidum hemagglutination assay (TPHA), T. pallidum enzyme immunoassay (TP-EIA), and Fluorescent treponemal antibody absorption (FTA-ABS)

What is the difference between treponemal and non-treponemal tests?

- -Nontreponemal tests determine the presence of a nontreponemal antibody directed against cardiolipin antigens.
- -Treponemal tests are based on the detection of treponemal antibody—the antibody that attacks T. pallidum, the spirochete that causes syphilis—in the blood.

In a patient with a suspected primary syphilis (chancre) which type of test should I order and why?

- -The definitive method for diagnosing syphilis is visualizing the *Treponema pallidum* bacterium via darkfield microscopy of a swab from the ulcer. This technique is rarely performed today.
- -Serologic testing to diagnose syphilis should include the use of both nontreponemal and treponemal tests. Either type of test can be used as the initial screening test (please note that treponemal tests Becomes reactive earlier in primary syphilis than nontreponemal tests). Confirmatory testing using the other type is necessary due to the potential for a false positive screening test result.
- **-in other words if you use nontreponemal for screening, confirm with treponemal and vice versa.**

Which type of serological syphilis tests can be used to follow up response to treatment?

- Nontreponemal test antibody titers might correlate with disease activity and are used to follow treatment response.

What if both nontreponemal and treponemal tests came back negative in a patient suspected to have primary syphilis?

- - If there is a high clinical suspicion for primary syphilis, treat the patient and repeat serologic testing at a later time point (eg, two to four weeks later) in order to confirm the diagnosis.

stage	symptoms	occurrence
primary	chancre (painless ulcer), regional lymphadenopathy	7 to 90, median is 21 days
secondary	rash and flu-like symptoms, meningitis, headache, uveitis, retinitis, condyloma lata, mucus lesions, alopecia if primary syphilis is untreated 25% will develop 2ry syphilis.	• 2 weeks to 3 months following exposure • 1-8 weeks following resolution of chancre (primary syphilis)
Latent	asymptomatic	Occur any time between 2ry and 3ry syphilis
Tertiary	neurologic, cardiovascular, and other complications 25-40% of untreated patients with syphilis will develop 3ry syphilis.	may appear at any time from 1 to 30 years after primary infection

When can we say a patient has latent syphilis?

- -Patients without a past diagnosis of syphilis who have both a reactive nontreponemal test (eg, rapid plasma reagin) **and** a reactive treponemal test
- - Patients with a prior history of syphilis (1ry or 2ry) who have a current nontreponemal test titer that demonstrates a fourfold or greater increase from the last nontreponemal test titer.

Latent syphilis is classified into 2 types, what are they and what is the difference between them?

- early latent syphilis
  - asymptomatic syphilis acquired within preceding year
  - infectious
- late latent syphilis
  - asymptomatic phase of syphilis acquired > 1 year previously
  - not thought to be infectious

I am not sure from history and clinical examination that the wart is caused by HPV, what should I do to confirm the diagnosis?

- Excise the wart and biopsy it to confirm the diagnosis and rule out malignancy

- **Women with reproductive potential and an STI should undergo pregnancy testing.**

TREATMENT OF SEXUAL TRANSMITTED INFECTION

TREATMENT FOR STI CAUSING URETHRITIS/VAGINITIS OR CERVICITIS

-In patients with symptoms of urethritis/vaginitis or cervicitis who have laboratory evidence of gonococcal infection or high clinical suspicion of gonococcal infection (eg, known or suspected *N. gonorrhoeae* exposure, extramarital sex), treatment for *N. gonorrhoeae* is indicated.

a- For patients with gonococcal infections, dual therapy with ceftriaxone plus azithromycin is recommended at the following doses:

- Ceftriaxone 250 mg intramuscular in a single dose for treatment of gonococcal infection

PLUS

- Azithromycin (1 gram in a single oral dose) for possible additional activity against *N. gonorrhoeae* and for treatment of potential chlamydia coinfection

- b- Treatment for NGU(non-gonococcal urethritis), in which there is no microscopic, laboratory, or clinical evidence of *N. gonorrhoeae*, is usually targeted against *C. trachomatis* as the most likely pathogen. First-line treatment for chlamydia is either a single oral dose of azithromycin (1 gram)* or a course of doxycycline (100 mg orally twice daily for seven days).

EMPIRIC TREATMENT FOR GENITAL ULCER

You should consider empiric treatment for a patient presenting with a genital ulcer If :

- A known exposure to an STI; the choice of agent depends upon the pathogen.

- Genital ulcers suggestive of HSV, since antiviral therapy can lessen the severity and duration of symptoms compared with untreated disease.

- Genital ulcers suggestive of syphilis (single or painless ulcer) in patients who are at high risk for infection, such as:

• Sexually active men who have sex with men (MSM)

• Commercial sex workers
• Individuals who exchange sex for drugs

• HIV patients

Infection	Medication	Dose	Frequency	Duration	Route	Note
Syphilis	penicillin G benzathine	2.4 million units	One dose		IM	-Don't forget to order serological tests prior to giving therapy, use nontreponemal tests to follow up response.
HSV 1&2	acyclovir	400 mg	three times daily	7-10 days	Oral	-Ideally antiviral therapy should be started ASAP after lesion appearance & within 72 hours. -Antivirals will decrease duration and severity of symptoms.
	famciclovir	250 mg	three times daily			
	valacyclovir	1000 mg	twice daily			

TREATMENT OPTIONS FOR ANOGENITAL WARTS

First-line patient-applied therapies include:

- Topical Imiquimod.
- Topical Podophyllotoxin

First-line clinician-administered therapies include:

- Cryotherapy
- Surgical removal (excision, electrosurgery, or laser)

PREVENTION

Behavior:

- 1-abstinence: it is the only way to avoid STIs 100%.
- 2-condom use reduce STI transmission significantly but not 100% effective.
- 3-avoiding alcohol and illicit drug use: These affects mental status and might lead to risky sexual practices.
- 4-Avoid suspicious places during travel, massage parlors, night clubs, sex workers…ect

Vaccines:

- 1-Hepatitis A & B.
- 2-HPV vaccine.

Instruction:

- Avoid sexual contact at least for 7 days after starting treatment and until symptoms have resolved.

PARTNER MANAGEMENT

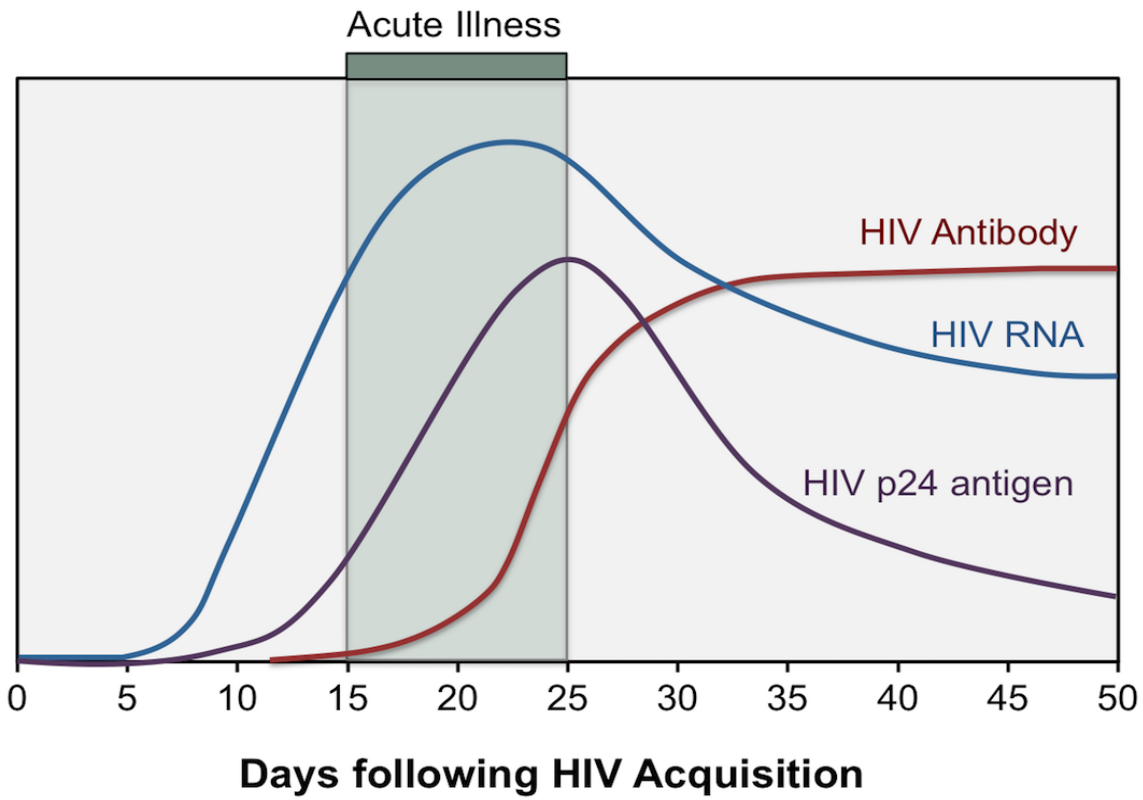
- -All individuals who have had sexual contact with patients diagnosed with N. gonorrhoeae, or C. trachomatis within the 60 days prior to the diagnosis should be evaluated and treated if appropriate.
- -Contacts of a patient with primary syphilis within the preceding 90 days, even if their serologic test for syphilis is negative.
- -Contacts of a patient with chancroid within the preceding 10 days.
- -No need to empirically treat contacts of patients with genital herpes simplex virus (HSV). However, such patients should be counseled and educated about the symptoms and presentation of HSV. Type-specific antibody testing (IgM & IgG) can be offered to contacts to assess their HSV status and potential risk for HSV transmission.

FOLLOW UP

- Follow up should be scheduled within 1 week of the initial visit:
- To check for resolution of symptoms
- To see results of tests.

HIV AND HEPATITIS B

NATURAL HISTORY OF HIV



- **What is the window period in HIV infection?**
- Time between infection and development of anti-HIV antibodies; when serologic tests (ELISA, Western blot) are negative.

INDICATIONS FOR HIV TESTING

- In KSA it is part of **pre-marital screening** and some **pre-employment screening** (for e.g. Health care providers)
- In case of **suspected exposure and a symptomatic manifestations** of an early HIV infection (fever, lymphadenopathy, sore throat, rash, myalgia/arthralgia, diarrhea, weight loss, and headache) also called (retroviral syndrome):perform the most sensitive screening immunoassay available (ideally, a combination antigen/antibody immunoassay) in addition to an HIV virologic (viral load) test using PCR.
- In case of **suspected exposure and no symptoms** (this is the common scenario)

HIV TESTING

Anti-HIV antibodies detectable after a median of 3 weeks, virtually all by 3 months (therefore 3 months window period).

- **Initial Screening Test**

(3rd generation antibody test): enzyme linked immunosorbent assay (ELISA) detects serum antibody to HIV; sensitivity >99.5%

increasingly, combination p24 antigen/HIV antibody tests (4th generation) used for screening; improved sensitivity in early or acute infection and sensitivity/specificity approach 100% for chronic infection.

- **Confirmatory test:**

if positive screen, an HIV-1/HIV-2 antibody differentiation using western blot or line immunoassay is performed; specificity >99.99%

	ELISA (3RD OR 4TH GEN)	CONFIRMATORY TEST (WESTERN BLOT OR LINE IMMUNOASSAY)	VIRAL LOAD	INTERPRETATION
Scenario 1	negative	No need	No need if the patient is asymptomatic	HIV negative
Scenario 2	positive	Negative or intermediate	Negative	-If the patient is at low risk for HIV, he or she should be reassured that HIV infection is very unlikely. -if the patient is not at low risk or you are not sure about his risk level repeat viral load after 1-2 weeks
Scenario 3	positive	Negative or intermediate	Weakly positive (RNA level <1000 copies/mL)	may rarely represent a false positive viral test and the viral load test should be immediately repeated on a new blood specimen
Scenario 4	Positive	Negative or intermediate	positive	HIV positive
Scenario 5	Positive	Positive	Not needed for diagnosis	HIV positive

What about rapid HIV screening tests?

- Rapid HIV screening tests are designed to provide results in less than 20 minutes. Although these tests can be performed in the laboratory (using serum or plasma), they can also be performed in community-based settings supervised by trained personnel, or at home, using whole blood or oral secretions.
- The accuracy of most rapid tests is quite high (>99% sensitivity and specificity) for patients with chronic infection.
- In one study, rapid antibody tests missed approximately 12 percent of acute HIV infections.
- In addition, testing on oral fluids appears to be less sensitive than testing on finger stick blood samples.

How to manage a patient with a positive HIV screening test?

- Breaking bad news.
- MOH notification.
- Referral to infectious diseases specialist.
- Screening of sexual contacts and family member.

HEPATITIS B

A patient who is a HBsAg +ve married or planning to marriage came to you asked you is it safe to have sexual intercourse with his/her partner?

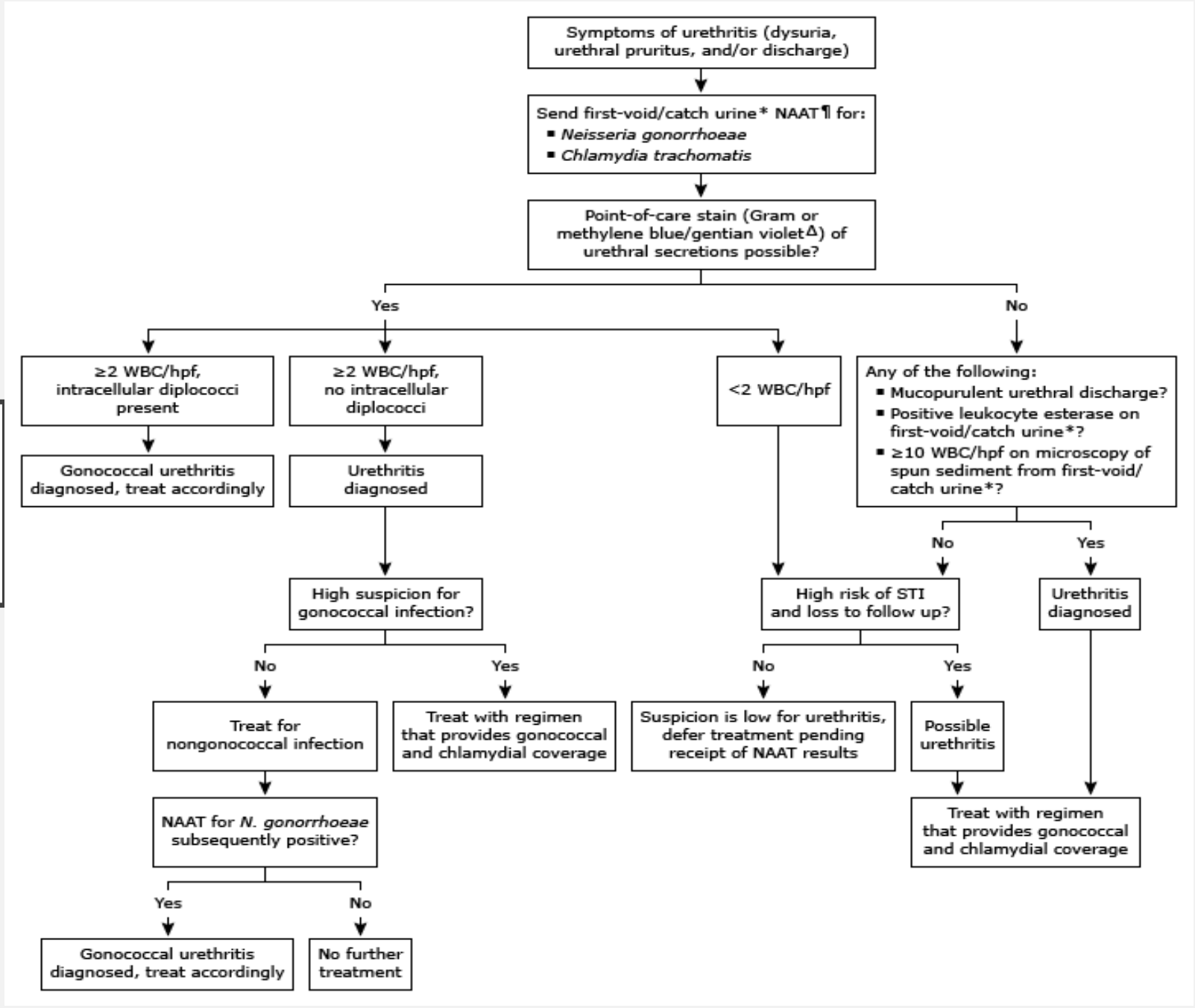
- Yes, people who are HBsAg +ve can have sexual intercourse with their partners.
- If the partner is immune they can have normal sexual intercourse without need for condom.
- If the partner is not immune: they can have sexual intercourse using condom.
- -the partner should receive a hepatitis B vaccination series (3 doses at 0, 1 month, & 6 months), then 1-2 months after finishing the series he/she should be tested for immunity against Hep B, if immune they can have intercourse without condom.

When we say the patient is immune after vaccination?

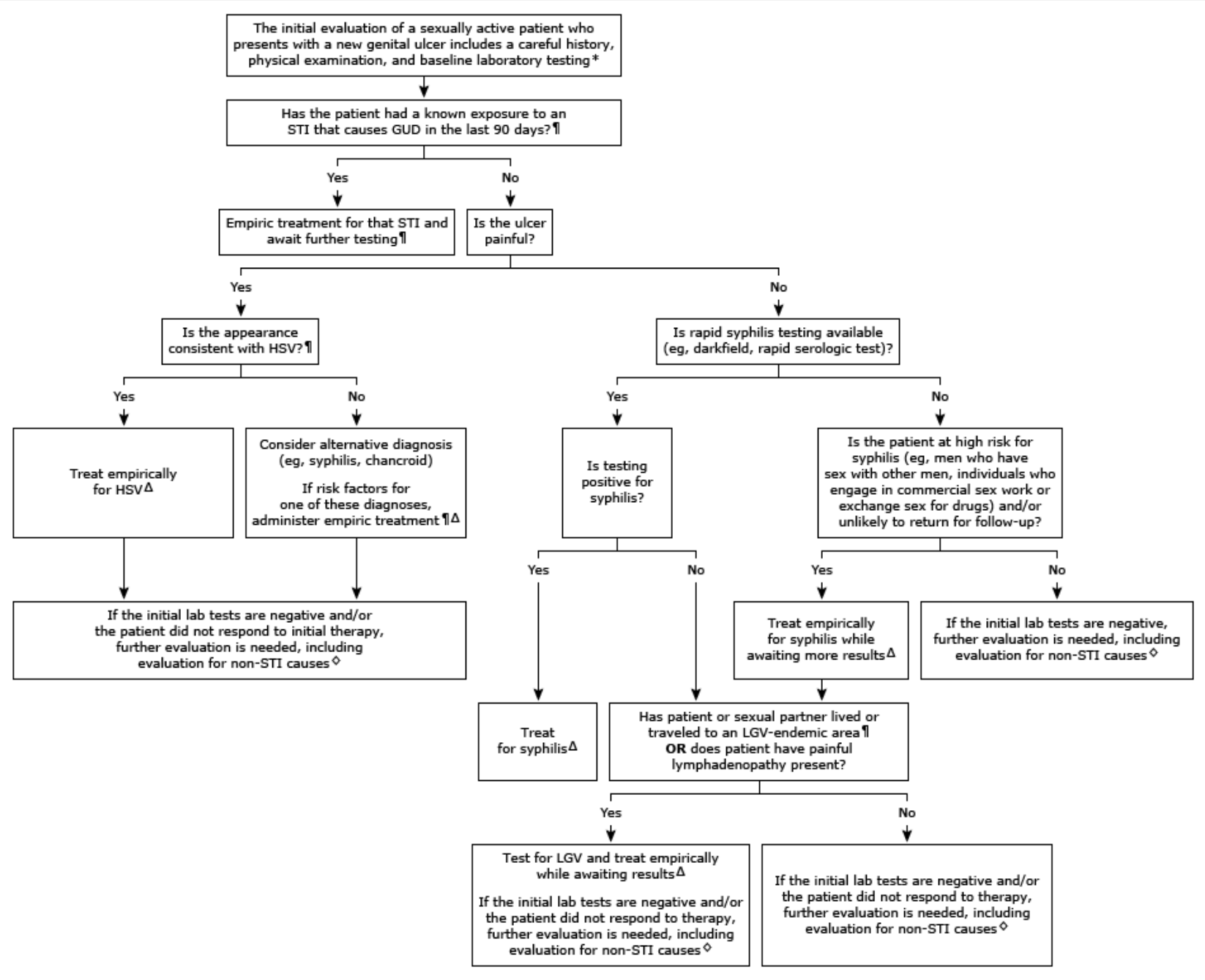
- anti-HBs ≥10 milli-international units/mL

When an STI is detected in a child, evaluation for sexual abuse is mandatory.

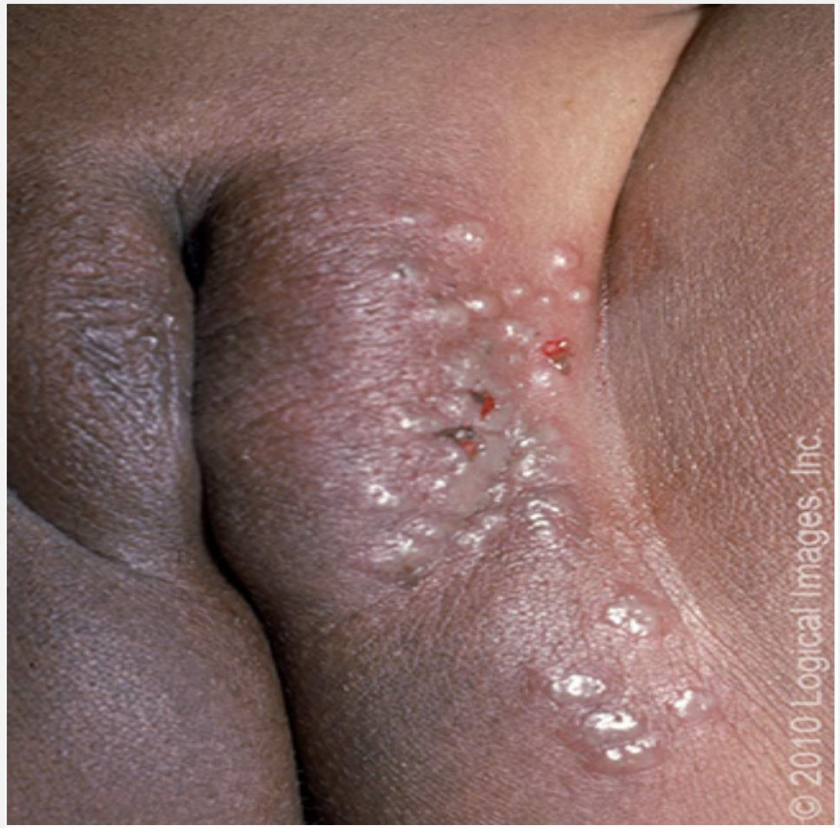
APPROACH TO THE MALE PATIENT WITH SUSPECTED URETHRITIS



APPROACH TO A PATIENT WITH A GENITAL ULCER

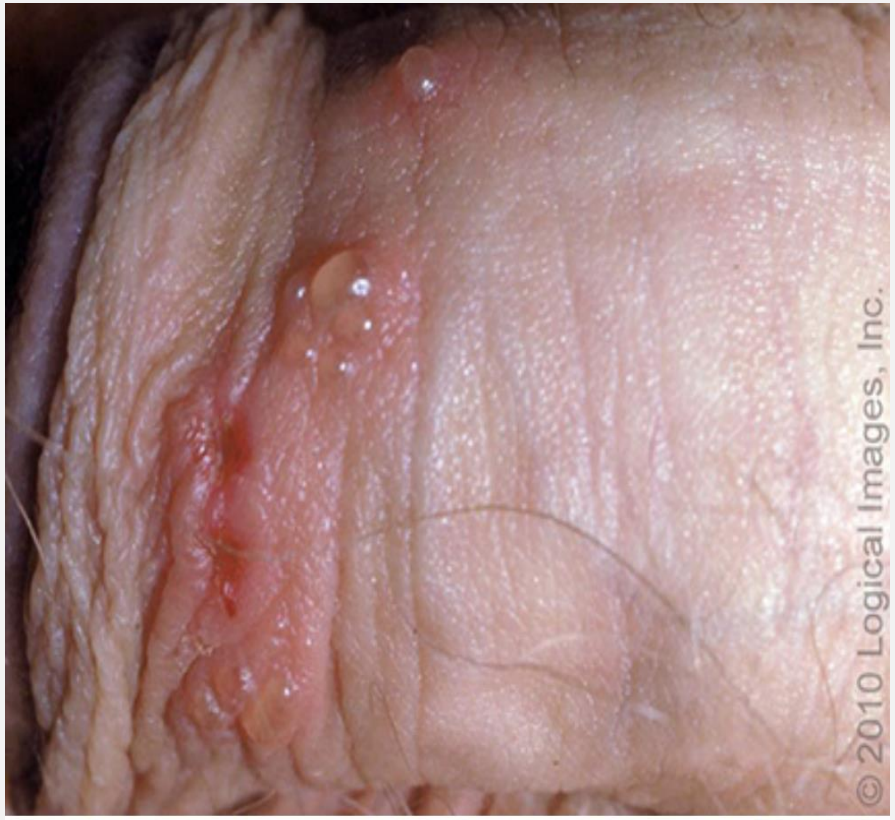


HERPES SIMPLEX VIRUS



Female genital herpes simplex virus

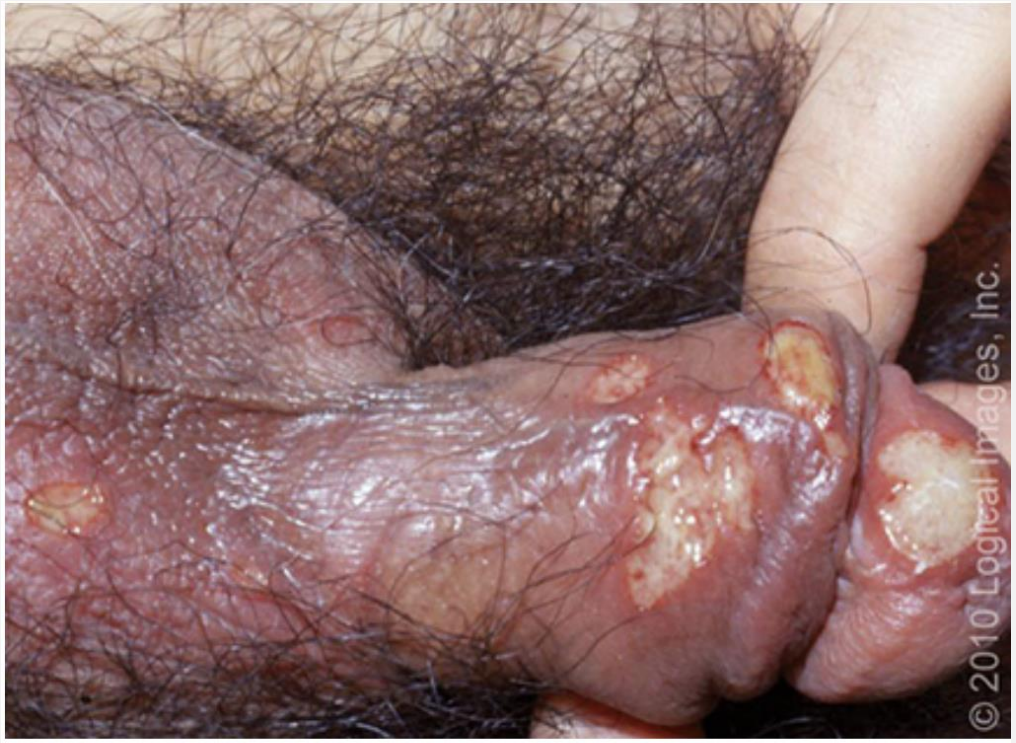
Herpetic lesions classically begin as one or more grouped vesicles on an erythematous base



Genital herpes simplex virus, male

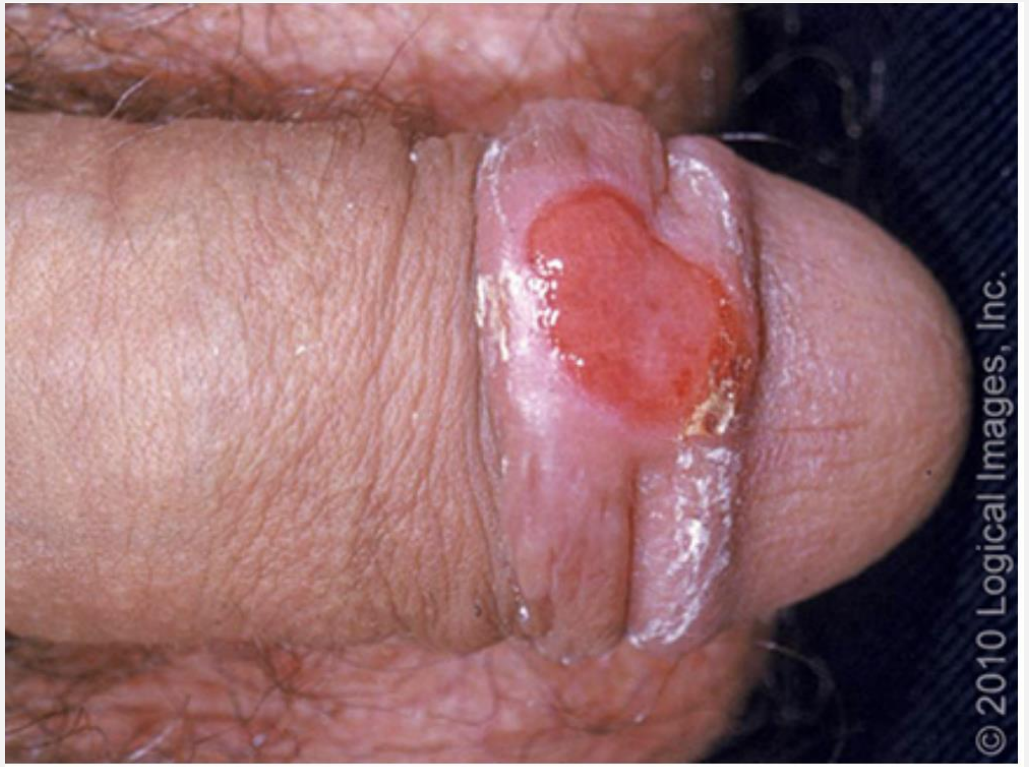
Herpetic lesions classically begin as one or more grouped vesicles on an erythematous base

SYPHILIS



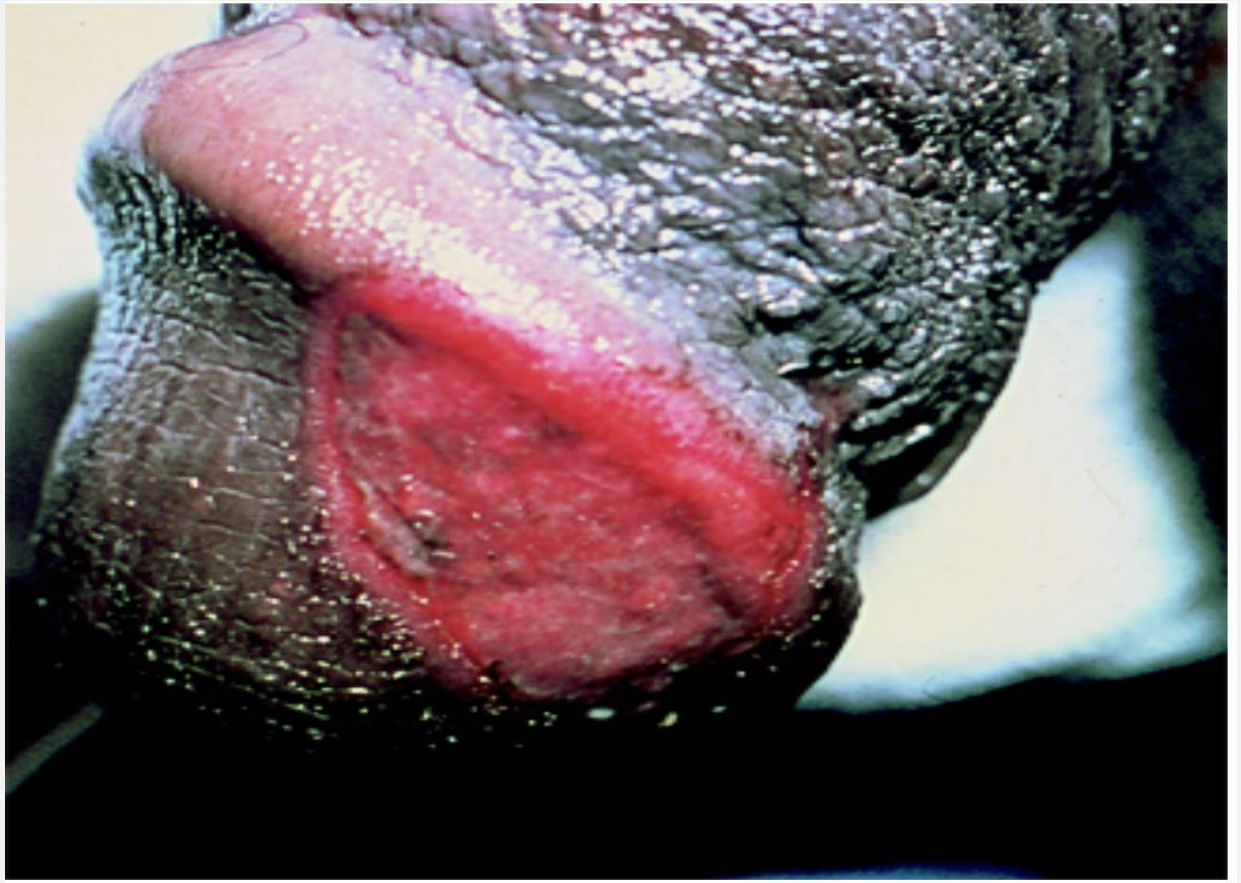
The genital lesions of chancroid

The ulcers associated with chancroid begin as papules that go on to ulcerate. The ulcers are characteristically deep and ragged with a purulent, yellow-gray base, and an undermined, violaceous border.



Penile chancre of primary syphilis
The syphilitic chancre is classically a single, indurated, well-circumscribed painless ulcer.

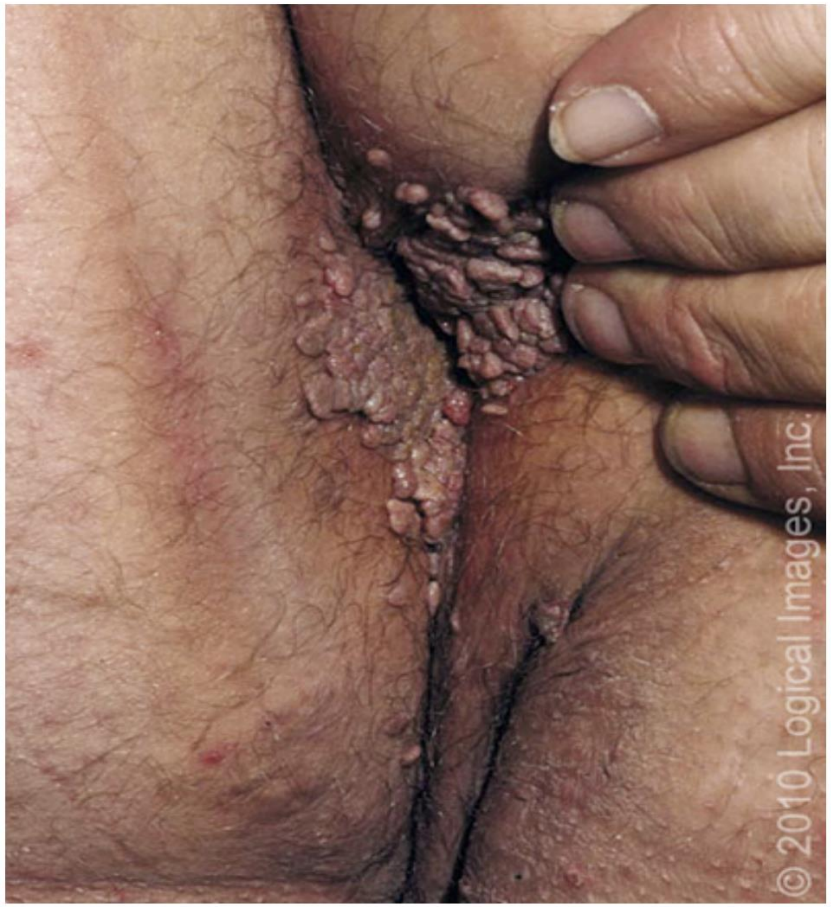
FIXED DRUG ERUPTION



Fixed drug eruption. An oval erosion on the glans penis occurred in this patient who was taking minocycline. According to the patient, an identical lesion appeared when he was given minocycline previously.

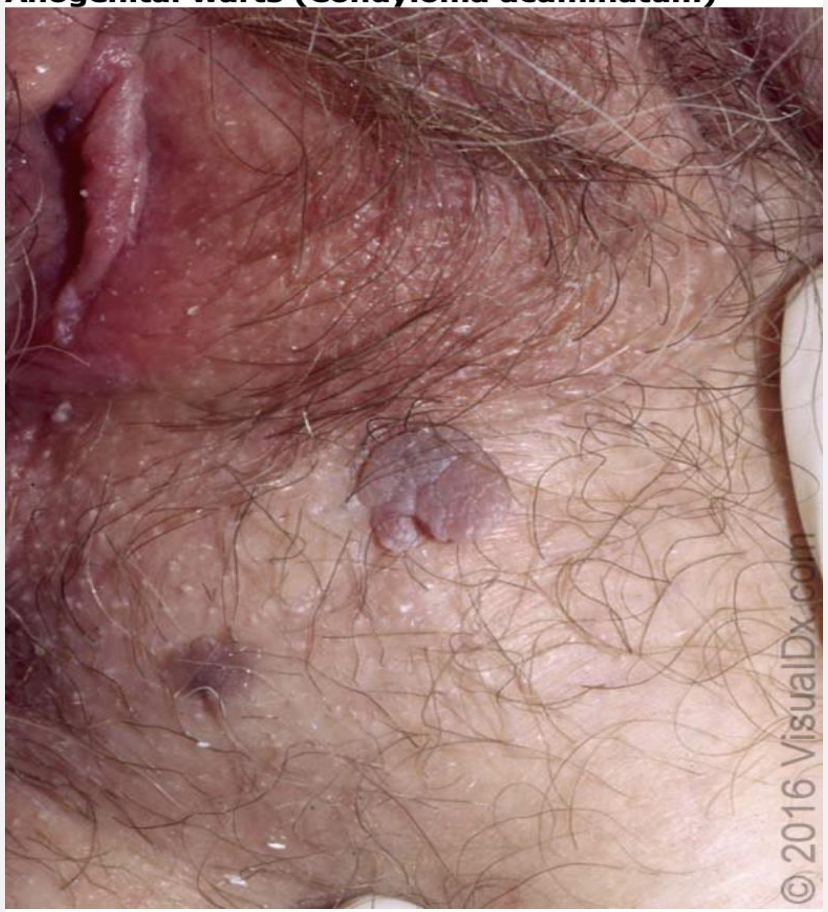
HUMAN PAPILLOMA VIRUS

Perianal condyloma acuminatum



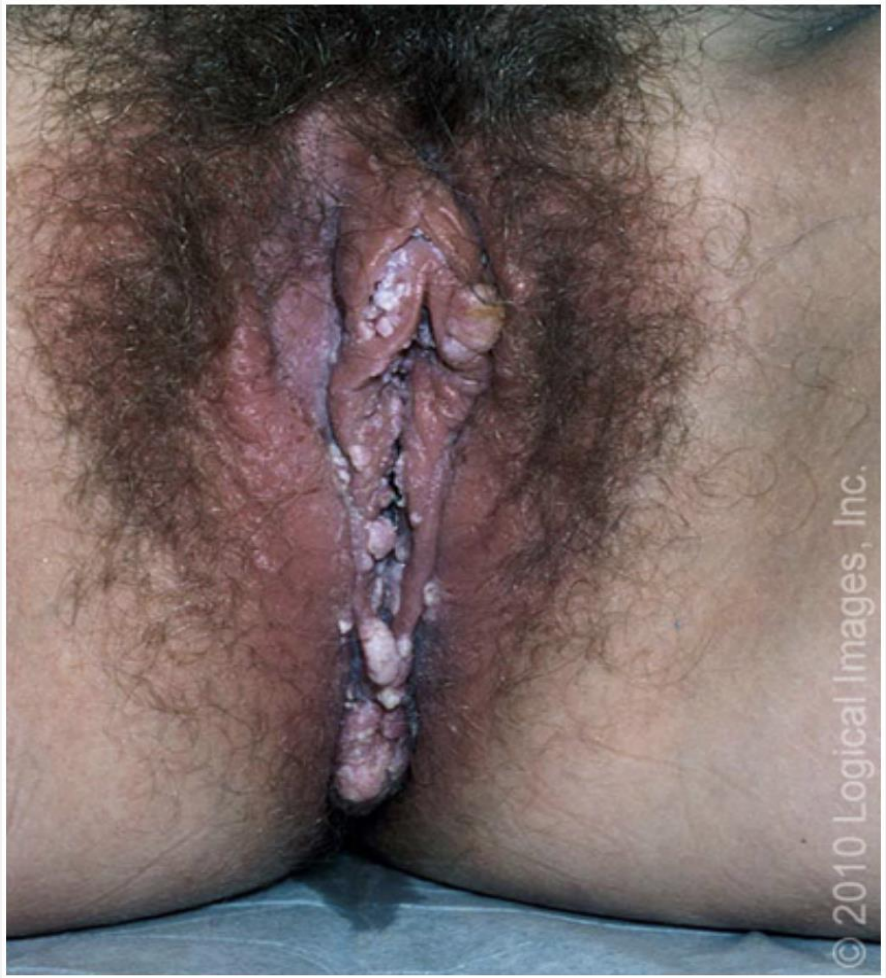
Condyloma acuminatum involving vulva, vagina, and perianal region

Anogenital warts (Condyloma acuminatum)

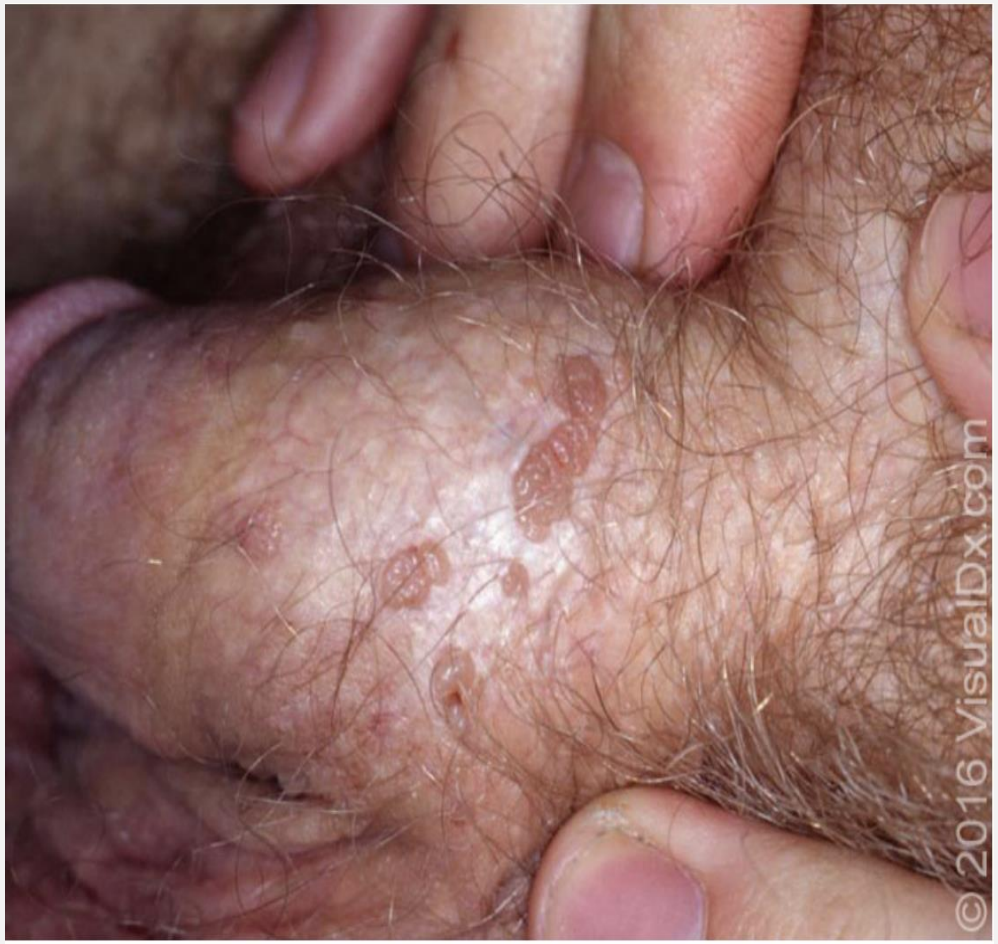


Condyloma acuminatum on the vulva.

HUMAN PAPILLOMA VIRUS



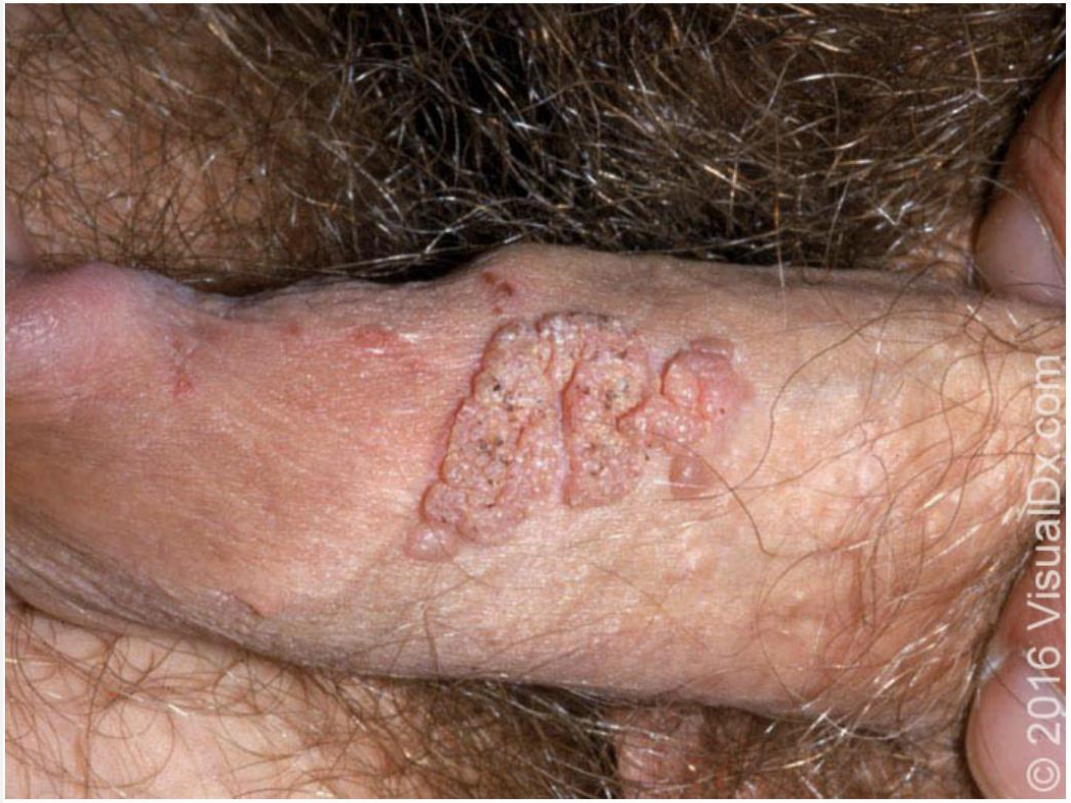
Condyloma acuminatum



Verrucous papules and plaque at base of penis.

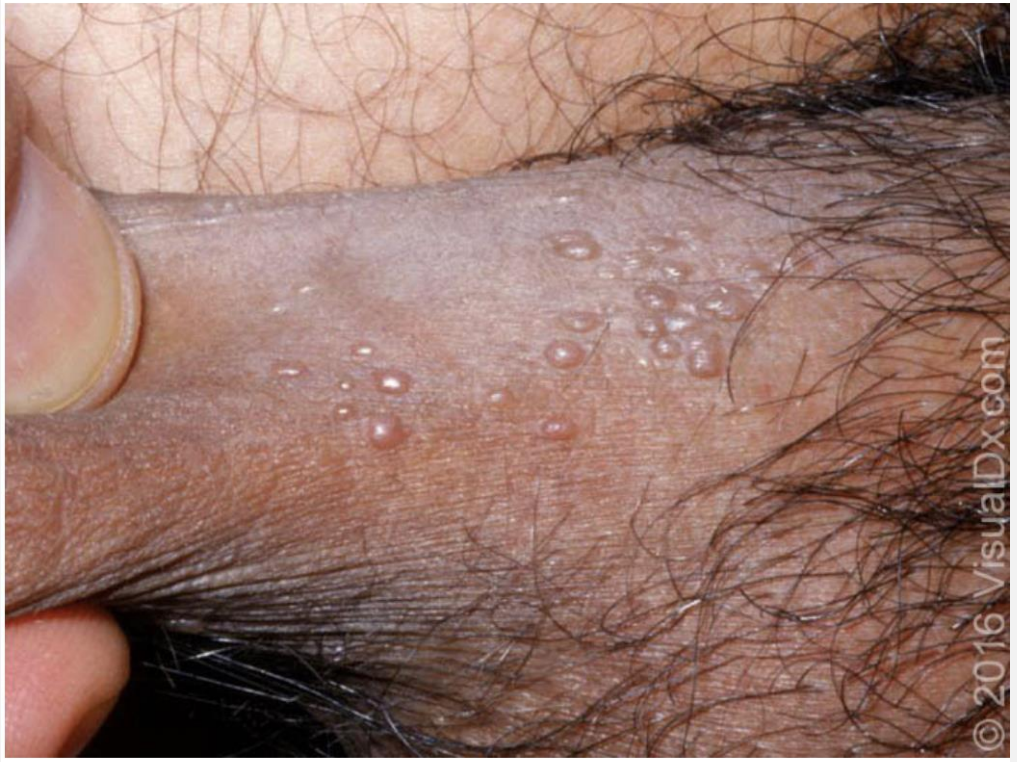
HUMAN PAPILLOMA VIRUS

Condyloma acuminatum



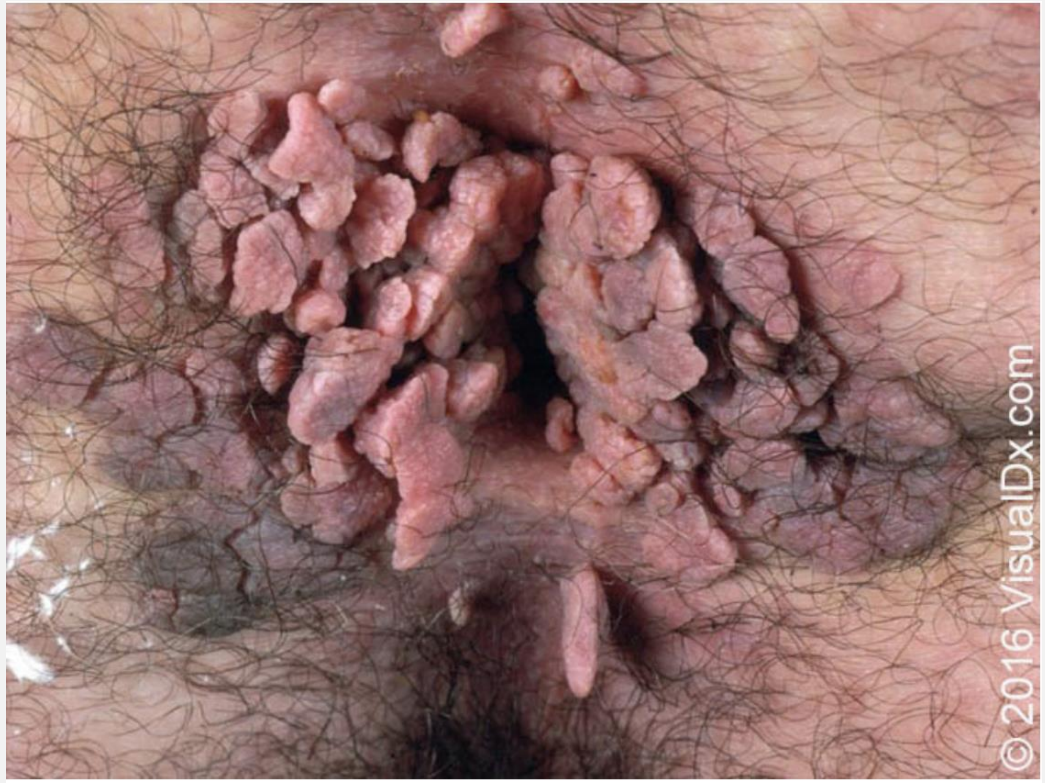
Verrucous plaque on the penis.

Condyloma acuminatum

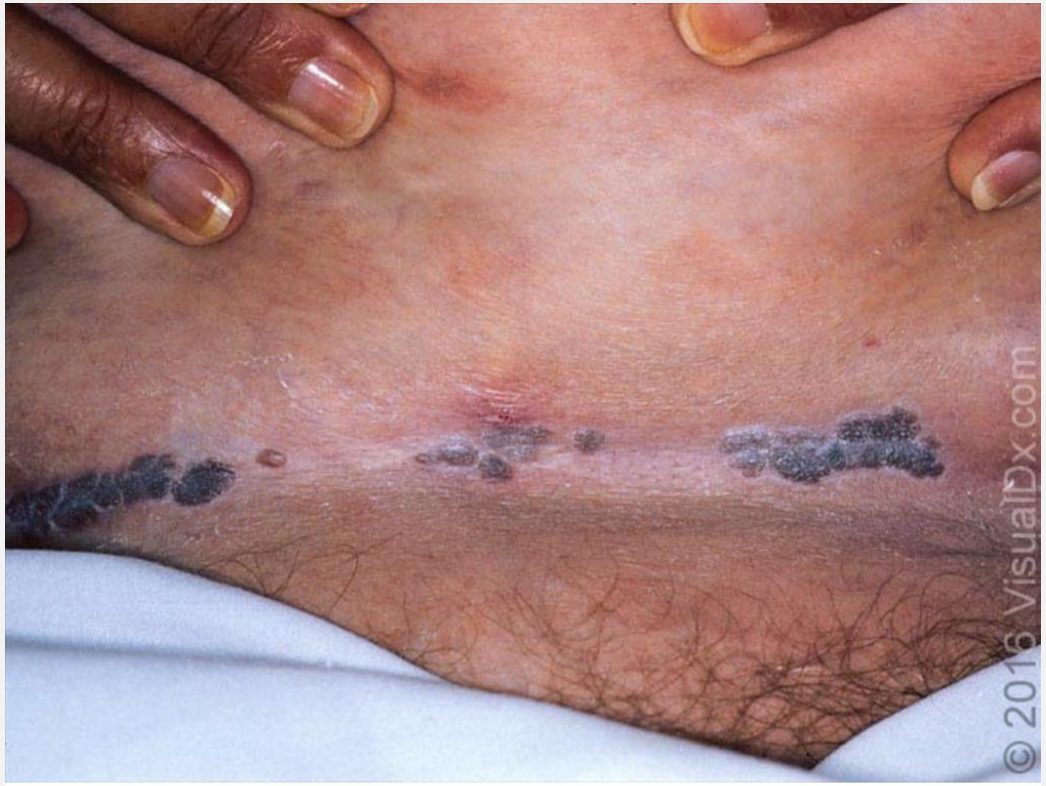


Multiple papules on the penis.

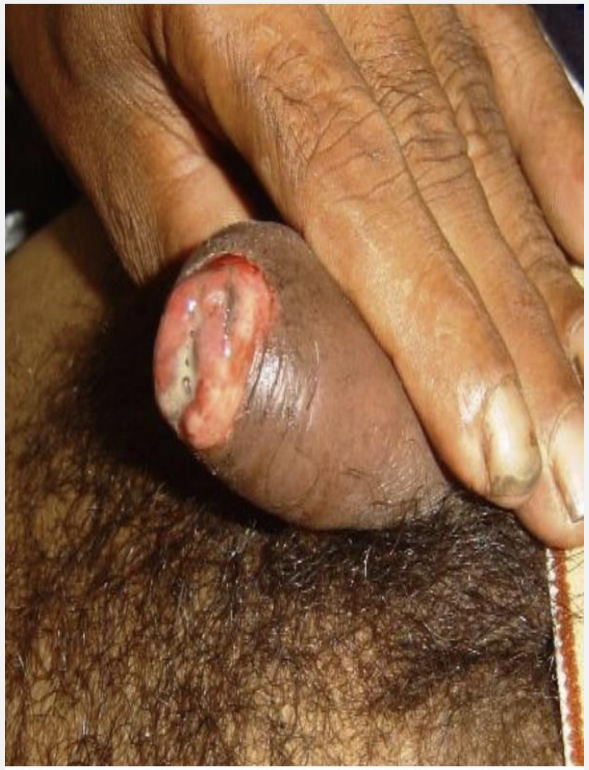
HUMAN PAPILLOMA VIRUS



Perianal verrucous papules and plaques.

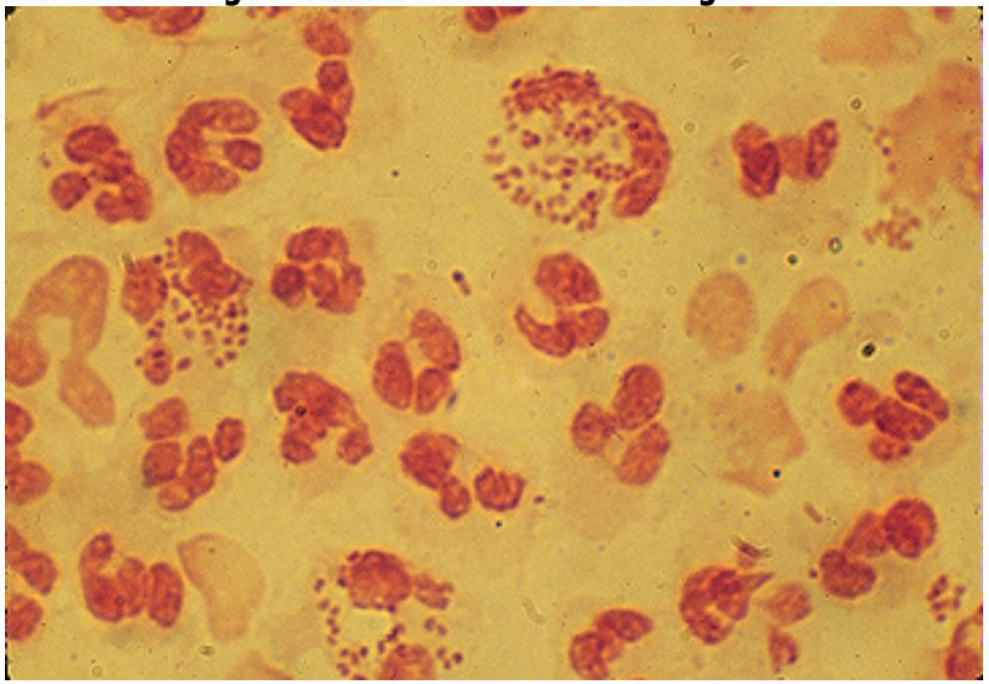


Suprapubic condyloma acuminatum.

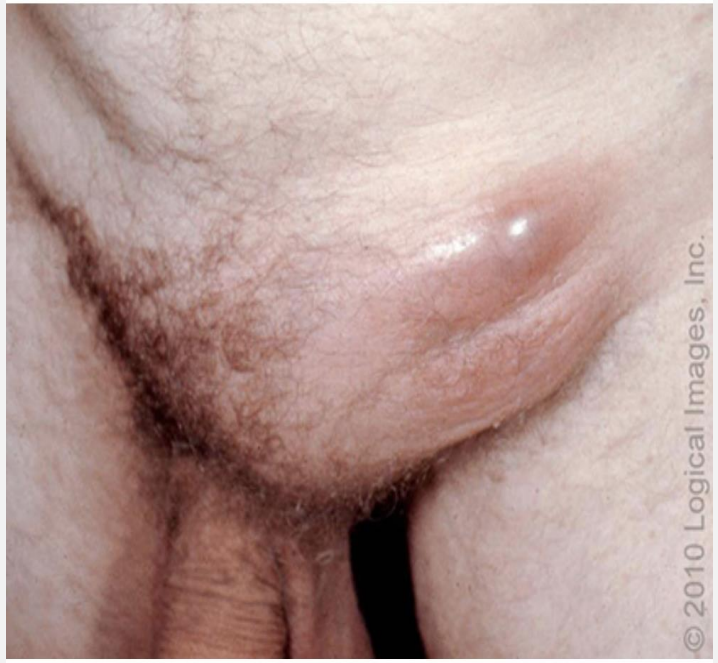


purulent penile discharge

Gram stain of gonococcus in urethral discharge



Gram stain of purulent exudate from the male urethra (x1000) shows polymorphonuclear leukocytes containing numerous intracellular gram-negative diplococci. As expected, *Neisseria gonorrhoeae* grew from this specimen.



Inguinal lymphadenitis

وزارة الدفاع
رئاسة هيئة الأركان العامة
الإدارة العامة للخدمات الطبية
برنامج / مستشفى / مستوصف / عيادة
Prog / Hosp / Center / Disp / Clnc

M.S.D.

PATIENT I.D.

CONTAGIOUS DISEASE NOTIFICATION

Department / Ward: ..... Code: ..... Date: .....
Consultant Name: ..... Number: ☐☐☐☐ Bleep: ☐☐☐☐

Patient Details

Name: _____ Med. Rec. No: _____
Nationality: _____ Age: _____ Sex: _____
Place of Work: _____ Type of Work: _____ (Father, if wife or child)
Address: _____ Tel. No.: _____

Reporter's Name: _____ Title: _____
Date of Diagnosis: / / Method of Diagnosis: _____
Admitted ☐ Discharged ☐ Transferred ☐
Physician's Name: _____

Diseases to be Notified Immediately

- ☐ Anthrax
- ☐ Plague
- ☐ Cholera
- ☐ Diphtheria
- ☐ Erysipelas
- ☐ Food Poisoning Outbreak
- ☐ Guillian-Barre Syndrome
- ☐ Haemorrhagic Conjunctivitis
- ☐ Meningococcal Meningitis
- ☐ Neonatal Tetanus
- ☐ Poliomyelitis
- ☐ Relapsing Fever
- ☐ Smallpox
- ☐ Suspected Poliomyelitis
- ☐ Transverse Myelitis
- ☐ Typhus Fever
- ☐ Yellow Fever
- ☐ Viral Haemorrhagic Diseases
- ☐ Any disease which appears in epidemic form _____

Diseases To Be Notified As Soon As Possible

- ☐ Amoebiasis
- ☐ Brucellosis
- ☐ Chickenpox
- ☐ Cutan, Leishmaniasis
- ☐ Gonorrhea
- ☐ Haemolytic Uraemic Syndrome
- ☐ Hepatitis A
- ☐ Hepatitis B
- ☐ Hepatitis C
- ☐ Herpes Simplex
- ☐ Herpes Zoster
- ☐ HiV
- ☐ Influenza
- ☐ Leprosy
- ☐ Malaria (Type _____)
- ☐ Measles
- ☐ Mumps
- ☐ Pertussis
- ☐ Puerperal Sepsis
- ☐ Rabies
- ☐ Rheumatic Fever
- ☐ Rubella (German Measles)
- ☐ Salmonellosis
- ☐ Scarlet Fever
- ☐ Schistosomiasis
- ☐ Shigellosis
- ☐ Syphilis
- ☐ Tetanus
- ☐ Trachoma
- ☐ Tuberculosis
- ☐ Typhoid & Para Typhoid
- ☐ Venereal Diseases: _____
- ☐ Viral Encephalitis
- ☐ Visc. Leishmaniasis
- ☐ Other: _____

Please send to Preventive Medicine Depart...

Stock No. 7540-765-5065
MSD Printed Form

OPT-10 M.S.D. Printing Press (1)

Sample contagious diseases notification form

QUISTIONS !

- What is the most common organism responsible for NGU (Nongonococcal urethritis) is:

- A- Neisseria Gonorrhoeae

- B-Bacterial Vaginosis

- C- Chlamydia Trachomatis

- D-Treponema Pallidum

- During her first prenatal visit, a woman asks why she is being screened for syphilis. Which of the following is the best response by the healthcare provider?

- A-"If you have the infection, the safest time to treat is during the first trimester"

- B-"Syphilis can be transferred from you to your baby through the placenta"

- C-"We must report all cases of syphilis to to ministry of health"

- D-"If you test positive you may need to be admitted to the hospital for care"

- What is the treatment of patient with symptoms of urethritis who have laboratory evidence of gonococcal infection?

- A-Ceftriaxone 250 mg + doxycycline 100 mg

- B-Azithromycin 1 gram + Ceftriaxone 250 mg

- C-doxycycline 100 mg + Azithromycin 500 mg

- D-Ceftriaxone 500 mg

- When Follow up should be scheduled after the initial visit for STI patient?

- A-within 1 week

- B- 2-3 weeks

- C- 4-6 weeks

- D- 8-12 weeks

- A patient who is positive for HBsAg asked you is it safe to have sexual intercourse with their partner who has an anti-HBs level of 5 milli-international units/mL. Which of the following is an appropriate response?

- A) You can have safe sexual intercourse without the need for a condom

- B) You can have safe sexual intercourse but with the use of a condom

- C) You can't have safe sexual intercourse even with the use of a condom

- D) You can have safe sexual intercourse once you take antiviral therapy

QUESTIONS ?

THANK YOU