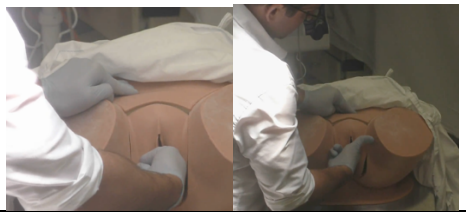
GENITOURINARY MEDICINE

Bimanual + Speculum Examination

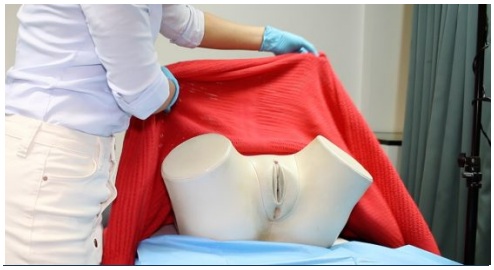
1. *"Today I examined Mrs Smith, a 28-year-old female who verbally consented for a bimanual + speculum exam. On general inspection, patient was comfortable at rest.*
2. ***Vulva and vaginal** inspection found no **abnormalities** (scars, redness, ulcers, masses, discharge, rash)*
3. ***Cervix** appeared (1) **closed/open, (2) soft/firm, (3) short/long***
4. ***Bimanual vaginal exam revealed no masses + speculum examination revealed a healthy cervix with closed external os** (? Mass, ?bleed, ?ulcers, ? discharge?)*
5. *In summary, these findings are consistent with a normal speculum examination, cervical entropion/cancer, STI,*

Introduction	• *Gain consent → explain rationale + guide throughout entire process (will only take a few mins)* • *Will have a chaperone with me* • *Close curtain (allow for privacy) + allow to get undressed*
Positioning critical	• *Don pair of sterile gloves* • ***Bum** @ **edge of bed*** • *Modified lithotomy position → Bring heels towards bottom and allow knees to fall to the side → are there stirrups?* ○ *Get one knee to touch one side of the wall and the other leg to lie as flat as possible* • ***Put hands underneath her bum** OR (If cannula on hand) ➔ **Roll up towel** and place under bum to prop it up*

Bimanual exam	• Check for any masses in between:
	  ○ endometriosis?,
	  ○ uterine fibroids?
	  ○ Cystic
	  ○ Pregnancy?
	• **Ante-verted** – above cervix (uterus felt anteriorly)
	• **Retroverted** – below cervix (uterus felt posteriorly)

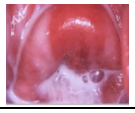
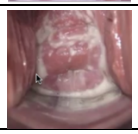
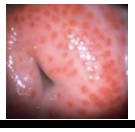


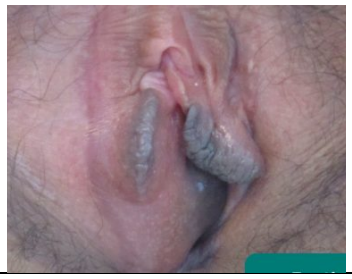
VULVA Inspection



Cystic swelling:

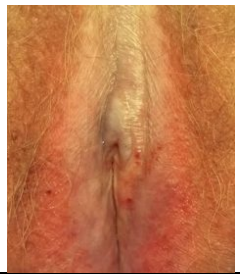
1) Congenital cysts (wolffian duct remnant) = anterolateral
2) Vaginal inclusion cyst (episiotomy scars)
3) Solid benign tumours (myoma, papilloma, adenomyoma)

		Cause	*Smell*	*Itchy*	*Inflamed*	*Key Features*	*Rx*
Bacterial vaginosis (non-STI)		*Gardenella, mycoplasma, haemophilus*	*Thin profuse fishy smelling discharge*	*No*	*No*	• inflamed vaginal mucosa • **Wet prep = clue cells**	• *Metronidazole(400mg)* • *Clindamycin (300mg)*
Candidiasis (non-STI)		*C. albicans*	*Curd-like non offensive charge*	*Yes*	*Yes*	• Dyspareunia • *DM* • KOH prep = psuedohyphae	*Fluconazole (150mg)*
C+G (STI)		*Multi-sex partners UNPROTECTED sex*	*Symptomatic + purulent*		*No*	*Post-coital bleed, dyspareunia (PID)*	*Doxycycline (chlamydia) Cef PLUS azithro (Gonorrhea)*
Trichomoniasis (STI)		*Flagellated protozoa*	*Smelly yellow-green frothy*	*Yes*	*Yes*	***strawberry cervix wet prep (trichomoniasis flagella)***	*Metronidazole (500mg) "flagyl"*



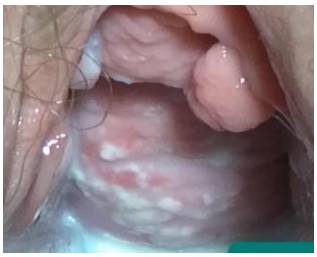
Bartholin's cyst

- Bartholin's glands (4 + 8 o'clock) secrete to maintain moist vagina
- Glands may become blocked/infected → cysts (unilateral fluctuant mass +/- tender)



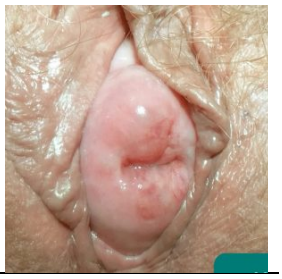
Lichen sclerosis

- **Chronic itchy + inflamed white patches** in anogenital area
- *DDx*: psoriasis (itchy, red and not well-demarcated plaques)



Vaginal Candidiasis

Chronic itchy moist curd-like lesions that cannot be scraped off



Vaginal Prolapse

Asking patient to cough → exacerbate the lump

Itchy Vulva

- ***Lichen sclerosis (thinner skin)***
- *Vulva vestibulitis (painful)*
- *Vulva leukoplakia (precancer mucosal membrane)*
- *Chronic lichen simplex*

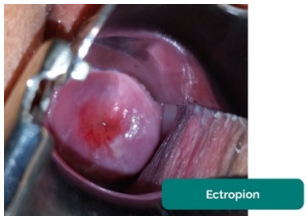
*Rx: **refer to dermatologist if any signs of lichen sclerosis or ulceration***

Red flags:

- ***Female genital mutilation (FGM)** = partial or total removal of external female genitalia e.g. clitoris, labia, narrowed vaginal introitus for non-medical reasons → FGM cases in girls < 18 need to be reported to police*
- ***Ulcers (HSV)***
- ***Scarring** (PREVIOUS surgery e.g. episiotomy or lichen sclerosis)*
- ***Vaginal atrophy** (post-menopausal women)*

STEP 1: PALPATE ABDOMEN + WARM SPECULUM

Inserting the speculum	1. *Warn patient that your are going to **insert the speculum – double check it is ok → obtain 2nd consent*** 2. *Lubricate speculum* 3. *Left hand (index, finger + thumb) separates labia* 4. *Insert speculum **SIDEWAYS (BLADE CLOSED, angled DOWNWARDS → down deep) - rest on forchette*** 5. ***ROTATE** speculum back 90° so handle is facing upwards → BEWARE OF PUBIC HAIR (GO STRAIGHT IN)- **rest on forchette*** 6. *OPEN SPECULUM blades until optimal view of cervix achieved* 7. ***TIGHTEN LOCKING NUT** to fix position*



Cervical ectropion

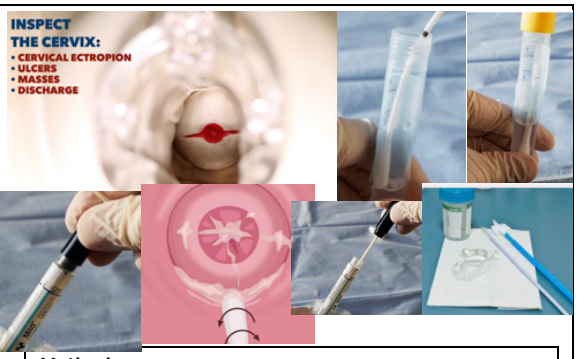
- **Metaplasia of columnar epithelial cells** found outside of vaginal cervix (usu. Squamous).
- **Red areas** = columnar cells + higher bleeding risk (more vascular) + post-coital bleed
- **Pink areas** = normal cervix

Cervical cancer

- **Persistent HPV infection** → causing dysplasia (i.e . cervical intra-epithelial neoplasia -CIN)
- **Often asymptomatic but** may present w/ IMB, post-coital bleed, increased vaginal discharge/discomfort
- **Early stage**: White/red patches on cervix
- **Advanced stage**: cervical ulcer, tumour

Visualising the cervix + pap smear

1. ***Cervical os***
   a. ***if open? → may indicate incomplete miscarriage***
   b. *Erosions around os → ectropion, early cervical cancer*
2. ***Cervical masses***
3. ***Ulceration*** *– genital herpes (HSV)*
4. ***Abnormal discharge***



Swabbing guidelines *(**NAAT** = snapping swab vs **charcoal** swab)*

1. *Double swabs (NAAT (endocervical or vulvovaginal) + high vaginal charcoal*
2. *Triple swab NAAT (endocervical or vulvovaginal) + high vaginal charcoal + endocervical charcoal*

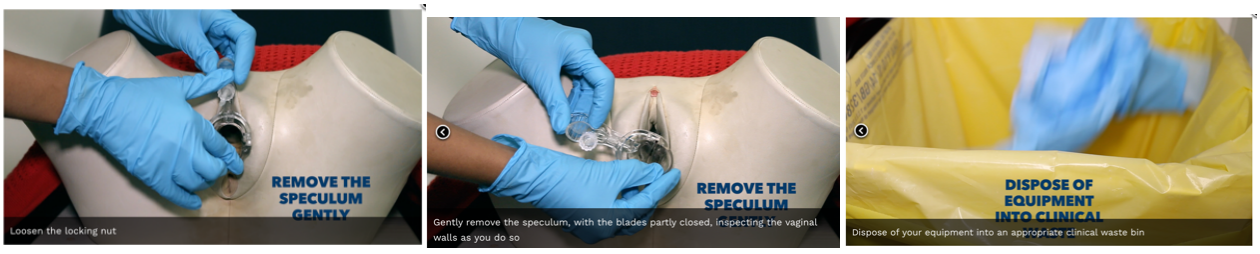
	Endocervical - *gently swab cervical os*	***Vulvovaginal -*** swab posterior fornix	***Method***
NAAT Swab (snap)	***C+G***		*Rotate for 10-15 s → open NAAT tube → place swab in NAAT test tube (snap off at black) → seal tube + label*
Charcoal media *(neutralises bact. Toxins and inhibitory substance to prolong viability or pathogens)*	*M/C/S for gonorrhoea (only after +ve NAAT)*	***High vaginal** = bacterial vaginosis, syphilis, candida, GBS*	Remove swab from tube → passby speculum → swab posterior fornix → rotate 10-15s ***Unlike NAAT (charcoal swab give sensitivities) → needed to guide ABx choice***
Blue smear	*Cervical cancer*		***TWIRL repeatedly → there will be bleeding (warn woman to have extra pads)***

Removing speculum

1. ***LOOSEN locking nut + PARTIALLY close blades***
2. ***ROTATE speculum 90°** back to original insertion orientation*
3. ***REMOVE speculum + INSPECT vaginal walls while exiting***
4. ***COVER patient with sheet → Close curtain → Allow patient to redress***
5. ***Dispose equipment into clinical waste bin***

ADDITIONAL THINGS TO DO

- *Bimanual exam to check for any adnexal masses*
- *Cervical motion tenderness → PID, peritonitis*



Describe the key features required in a sexual history?

- **P – sexually active** – past partner? M/F/Both → Last time having sex + last time w/ different person
  - Male, female or both (**MSM = consider PrEP HIV prophylaxis**)
- **P -relationship** status (regular vs casual) → DFV, Sexual abuse, statutory rape
- **P – sex type** (V/A/O) + protection (condoms) + contraception
- **P – pregnancy plans** → STI status, CST screening (previous?)

Key Differentials:

1) Beware of PID – tender uterus, cervical motion tenderness (no other cause identified)
2) Most STI (C+G) are asymptomatic (80%) ➔ issue regarding long-term fertility
3) Thrush + gardenalla ≠ STI

investigations and treatment options for Chlamydia & Gonorrhoea?

	Chlamydia	Gonorrhoea
Epi	< 30 – most commonly reported communicable disease	• **MOST common in MSM, heterosexual ATSI** • Previous infection does not provide immunity for new infection
High RF	• < 30 + sexually active (MSM, sex workers) • Irregular use of condoms, HIV, IVDU, sexual assault • Partner change or STI in last 12 mths • Pregnant	• Same as chlamydia – sharing sex toys • Mainly in MSM
Cause	*Chlamydia trachomatis / Lymphogranuloma venereum* • **Gram -ve parasitic coccobacilli** *Lymphogranuloma venereum* • **Painless ulcer (stage 1) → lymphadenitis (2) → proctitis (tenesmus) (3)**	**Gram-negative diplococci** ➢ **Neisseria gonorrhoeae** - *infects mucous membranes w/ columnar epithelium (e.g. endocervix, urethra, rectum, pharynx and conjunctiva)*
S+S	50-75% **asymptomatic** **Women**: • Dysuria, mucopurulent genital discharge, IMB, • post-coital bleed + dyspareunia, • abdo-pelvic cramps/pain **Men**: • **urethral d/c and pain** , dysuria, • testicular/scrotal pain	80% **asymptomatic** • Dysuria, pelvis/groin/testicular pain • NON-smelly purulent genital discharge (green or yellow) • **Conjunctivitis (erythema + purulent d/c)➔ sight threatening** • **Prostatitis/cervicitis –** perineal pain, dyspareunia • **Rectal infection** = rectal discomfort and discharge • **Pharyngeal infection** = sore throat
Comp.	**Women**: • pelvic adhesions • PID & infertility (fallopian tube scarring) • ectopic pregnancy, • Pre-term, PPROM (M/C), LBW • post-partum endometritis • chronic pelvic pain, **Men**: • Epididymo-orchitis **Both**: • reactive arthritis • rectal chlamydia (if lymphogranuloma venereum) **Neonate**: • neonatal pneumonitis, • **chlamydial conjunctivitis** (few weeks after)	**Women**: • PID & infertility (fallopian tube scarring) + pelvic adhesions ○ Fitz-High Curtis syndrome = perihepatitis • Ectopic pregnancy, • Pre-term, PPROM (M/C), LBW • Post-partum endometritis **Men**: • Epididymo-orchitis or prostatitis **Both**: • **adult gonococcal conjunctivitis** → urgent opthal referral • **reactive or septic arthritis** • ***Disseminated gonococcal infection (if untreated)*** → *skin lesions, migratory polyarthralgia, tenosynovitis, fever, fatigue* **Neonate**: • neonatal pneumonitis OR opthalmia neonatorum • **gonococcal conjunctivitis** (1st week of life)
Ix	Consider screening for other STI (gonorrhoea, syphilis, HIV, Hep A/B/C) • Urethra 1st pass urine (FPU) = NAAT • Self-collected vaginal swab = NAAT • Clinician endocervical swab = NAAT • Urethra 1st pass urine (FPU) • Anorectal swab = NAAT (IF anorectal symptoms, MSM) • Pharyngeal swab = NAAT (MSM)	Consider screening for other STI (gonorrhoea, syphilis, HIV, Hep A/B/C) • Urethra 1st pass urine (FPU) = NAAT • Self-collected vaginal swab = NAAT • Clinician endocervical swab = NAAT • Anorectal swab = NAAT (IF anorectal symptoms, MSM) • Pharyngeal swab = NAAT (MSM) • **Penile urethral swab = Gonococcal Culture (ONLY if discharge)**
Acute Mx	*Education (safe-sex)* 1. Advise NO sexual contact for **7 days** after treatment. 2. Advise NO sex with partners **from the last 6 months** until the partners have been tested and treated if necessary. *Public health* **1. Contact tracing – for last 6/12** **2. Notify public health department**	Education (safe-sex) 1. Advise NO sexual contact for **7 days** after treatment 2. Advise NO sex with partners **from the last 2 months** until the partners have been tested and treated if necessary. Public health **3. Contact tracing – for last 2/12.** 4. HIV pre-exposure prophylaxis (PrEP) for anyone diagnosed with gonorrhoea.
Mx	**Treat immediately (if high-index of suspicion)** Uncomplicated genital or pharyngeal infection: Doxycycline 100 mg PO, bd 7 days; Azithromycin 1 g PO, stat. (only if adeherane is poor) Anorectal infection: Doxycycline 100 mg PO, bd for 7 days if asymptomatic, but 21 days if symptomatic (see anorectal syndromes); Azithromycin 1 g PO, stat. and repeat in 12-24 hours	**Obtain samples from genital and non-gentinal sites BEFORE dual-treatment (for ABx Sn)** Uncomplicated genital and anorectal infection: Ceftriaxone 500 mg IMI, stat. in 2 mL 1% lignocaine *PLUS* Azithromycin 1 g PO, stat.; NONE Uncomplicated pharyngeal infection*: Ceftriaxone 500 mg IMI, stat. in 2 mL 1% lignocaine *PLUS* Azithromycin **2 g PO,** stat.; NONE Adult gonococcal conjunctivitis: Ceftriaxone **1 g IMI**, stat. in 2 mL 1% lignocaine *PLUS* Azithromycin 1 g PO, stat.; NONE
FU	**Education:& reassurance** 1) STIs are treatable 2) NO sex until Rx complete **and test of cure (TOC)** required a. 3 months to detect re-infection b. (TOC) by NAAT 4 weeks after treatment for pregnant patients (+ repeat test at 3rd trimester) or anorectal infection 3) Review in 1 wk + Contact tracing 6/12 4) Safe sex (STI/BBV screen, COCP + condoms, void after sex) 5) Specialist sexual health service (if anorectal co-infection w/ gonorrhoea OR pregnant/BF)	**Education:& reassurance** • STIs are treatable - Gonococcal CONJ → urgent referral to ophthalmologist • NO sex until Rx complete **and test of cure (TOC)** required • 3 months to detect re-infection • (TOC) by NAAT > 2 weeks after treatment for oropharyngeal, anorectal or cervical infections • Review in 1 wk + Contact tracing 2/12 • Safe sex (STI/BBV screen, COCP + condoms, void after sex) • Specialist sexual health service (if anorectal co-infection w/ chlamydia OR pregnant/BF or re-infection @ 3/12)

STI/HIV Testing Tool

STEP 1: Offer to screen + sexual history ask

• *Young people (15-29yo)*	*"STIs are very common in young people and most don't know they have it. So that is why we advise all young people ot get tested regularly for STIs. Would you like a check up today?"*
• *Reproductive health outcomes*	*While you're here for advice about contraception/cervical screening, it is good to discuss about your sexual health. Would that be ok with you?"*
• *Travel Consultations*	*"Some people take risks when travelling overseas including having unprotected sex. If you'd like, we could do a sexual check up today before you go and when you return"*
• *Hep B vaccination*	*"Have you had your Hep B vaccination? If not, this vaccine helps to protect against an infection that can be sexually transmitted. Would you like to talk about it further"*
• *Asymptomatic BUT starting new relationship*	• *FPU (1st) = NAAT/PCR* • *Self-collected Vaginal swab = NAAT* • ***Bloods** = HHIV (repeat 6 weeks if recent exposure), **Hep B and syphilis** (repeat 12 wks if recent exposure)*

STEP 2&3: Testing + contact tracing

	Chlamydia	Gonorrhoea	Syphilis	HIV	Hep A	Hep B	Hep C	Trichomoniasis
Young (15-29)	**Annual**	Sx + high-risk	Sx + high-risk	Sx + high-risk		**Confirm immune status** + Vax if not immune		Sx + high-risk
Asympt	**Annual**	Sx + high-risk	Sx + high-risk	If asked				Sx + high-risk
ATSI	**Annual**	**Annual**	**Annual**	**esp. rural**			**esp. rural**	**Test in remote areas**
MSM	**3/12**	**3/12**	**3/12**	**3/12**	**Confirm immune status**		HIV +ve and on PrEP or IVDU	
Sex worker	**3/12**	**3/12**	**3/12**	**3/12**			**Check risk assessment (hep C NAAT)**	
IVDU	**Annual**	**Annual**	**Annual**	**Annual**			**esp. rural**	
Pregnant	If high-risk (<30yo, ATSI or high prevalent area)	If high-risk (known RFs + high prevalent area)	**1st antenatal visit**	**1st antenatal visit**		**Test all = ax**	**1st antenatal visit**	
Testing (F)	• Vag swab (self-collected) • 1st pass urine • endocervical	• Vag swab (self-collected) • 1st pass urine • Endocervical • Throat swab (only for sex workers)	**Blood**	**Blood**	**Blood**	**Blood**	**Blood**	• Vag swab (self-collected) • 1st pass urine
Testing (M)	1st pass urine *MSM = throat + rectal swab*	1st pass urine *MSM = throat + rectal swab*	**Blood**	**Blood**	**Blood**	**Blood**	**Blood**	
Test	Chlamydia NAAT (PCR) *Highly sensitive dual test that allows self-collection BUT no info about sensitives and false+ve*	Gonorrhoea NAAT (PCR) *Highly sensitive dual test that allows self-collection BUT no info about sensitives and false+ve*	**Syphilis serology** **1)** Sore penis **2)** Hand/rash **3)** neurosyph	**HIV Ab/Ag**	Anti-HAV Ig total	**HBsAg** (*antenatal*) **Anti-HBc** (*acute, chronic, past*) **Anti-HBs** (*immunity*)	**HCV Ab**	Trichomoniasis NAAT (PCR)
Contact trace	6/12 Notify public health	2/12	Primary = 3/12 Secondary 6/12 Early latent = 12/12	Check recent partners or needle sharing partners		6/12 prior to Sx Notify public health	6/12 prior to Sx	Treat current partner

*For syphilis = beware of **Jarisch – Herxheimer Reaction** (fever, rash, chill + headache) after **ABx given** (BenPen -G)

Why **contact trace (via phone, SMS, email, in-person, support service) ?= aim to prevent patient re-infected and reduce community transmission (since most people with STI don't' know they have it and can pass it on unknowingly causing long-term health problems"

- Patient initiated = Contact tracing
- Clinician initiated = anonymously (best for HIV or DFV patients)
- Document and provide info (e.g. www.letmeknow.org.au, www.thedramadownunder.com, (MSM) OR www.bettertoknow.org.au (ATSI)

Investigations and treatment options for STIs

	MYCOPLASMA GENITALIUM (MG)	PELVIC INFLAMMATORY DISEASE	Trichomoniasis	Genital Herpes
	STI	**STI Or NON-STI**	**STI**	**STI**
Define	Overgrowth of bacteria in vagina due to loss of **lactobacilli "friendly" bacteria**	Inflammation and infeciton of organs in pelvis (spread up from cervix) ➢ Endometritis ➢ Salpingitis ➢ Oophoritis ➢ Parametritis (CT around uterus) ➢ Peritonitis	Protozoa parasite w/ flagella that lives in urethra of men and women OR vagina in woman	2 main viral strains that Infect sensory nerve ganglia
Cause	➢ Mycobacteria	***Main STIs*** ➢ *Neisseria Gonorrhoea (tends to produce more severe PID)* ➢ *Chlamydia Trachomatis* ➢ *Mycoplasma Genitalium* ***Main Non-STIs*** ➢ *Gardernella vaginalis* ➢ *Haemophilus influenzae* ➢ *E. coli*	*Trichomonas parasite with flagella*	• ***HSV -1*** *= cold sores → trigeminal nerve ganglia* • ***HSV 2*** *= genital herpes → sacral nerve ganglia*
RF	• Multiple sexual partners • XS vaginal cleaning (e.g. soaps, douching, vaginal washes) • Recent ABx • Smoking • Copper coil	• *No barrier contraception* • *Multiple sexual partners* • *Younger age* • *Active STI* • *Previous PID* • *IUD (e.g. copper)*		• *Orogenital sex → HSV1* • *STI → HSV 2* • *Spread via direct contact w/ affected mucosal or viral shedding in mucous secretions*
S+S	Most are asymptomatic ➢ Urethritis ➢ Similar to chlamydia Sx	➢ Pelvic or lower abdo pain ➢ Abnormal vaginal discharge ➢ Abnormal bleeding ➢ Dyspareunia ➢ Fever ➢ Dysuria ***Exam*** ➢ Cervical motion tenderness ➢ Cervicitis (inflamed cervix) ➢ Purulent discharge	**50% asymptomatic** ➢ Vaginal discharge (**frothy yellow green**) **→ fishy smell** ➢ Itchy ➢ Dysuria ➢ Dyspareunia ➢ Balanitis (inflamed glans) ***Exam***: ➢ **Strawberry cervix** (colpitis macularis)	***Symptoms last 3 wks post-infection*** • *Ulcers / blistering lesions in genitalia* • *Neuropathic (burning, tingling) pain* • *Flu-like sx (headache, fatigue)* • *Dysuria* • *Inguinal LN*
Comp.	**Women** • Cervicitis • Endometritis • PID → tubal infertility • Pre-term **Men** • Epididymo-orchitis **Both** • Reactive arthritis	• **Tubal scarring** – tubal infertility • **Chronic pelvic pain** • Abscess → **sepsis** • **Ectopic** • **Fitz-Hugh-curtis** (inflamed liver capsule "Glisson's capsule") – **adhesions with liver and peritoneum → bacteria spread from pelvis into peritoneal cavity, lymph or blood** → RUQ pain → shoulder tip pain	• HIV risk (since damages mucosa) • Bacterial vaginosis • Cervical cancer • PID • Pregnancy issues (e.g. pre-term delivery)	• **Aphthous ulcers** (small painful oral sores in mouth) • **Herpes keratitis** (inflamed cornea in eye) • **Herpes whitlow** (painful skin lesion on finger or thumb) In pregnancy ➢ Neonatal HSV infection (high morbidity and mortality)
Ix	***Consider screening for other STI (C+G, syphilis, HIV, Hep A/B/C)*** • High Vaginal swab (NAAT) • 1ST pass urine sample (M/C/S) • Self-collected vaginal swabs	➢ **NAAT** for C+G +MG ➢ HIV and syphilis test ➢ **CHARCOAL** high vag swab (M/C/S) ○ **Microscopy – pus cells (absence = exclude PID)** ➢ **B-HCG** ➢ **CRP/ESR**	• **Vaginal pH > 4.5** (like vaginosis) • **Charcoal high vag swab** (M/C/S) → aim for *posterior fornix of vagina behind cervix* **For men** • Urethral swab (M/C/S) • 1st pass urine (M/C/S)	***Clinical Hx and findings*** ➢ Swab Viral PCR
Mx	**Refer to guidelines** ➢ **100mg Doxy PO bd for 7 days** ➢ Azithromycin 1g STAT then 500mg od for 2 days *Moxifloxacin (alternative or in complicated infections) **Post-Mx** ➢ Test of cure after treatment for any positive patient	**Refer to local guidelines** ➢ **IM 1g ceftriaxone STAT** (Gono cover) ➢ **100mg Doxy bd 7 days PO** (Chlamydia and MG coverage) ➢ **400mg Metro bd 14 days PO** (Anaerobe/ vaginosis coverage) **For fitz-hugh-Curtis syndrome** (perihepatitis) ➢ Laparoscopy to dx ➢ Adhesiolysis to Rx	**Refer to guidelines** ➢ **Contact tracing** ➢ **400mg Metro bd 14 days PO** (Anaerobe/ vaginosis coverage)	**Acute Mx** ➢ **Acyclovir** ➢ Analgesia (Panadol) ➢ Avoid sex ➢ Wear loose clothing ➢ Keep clean / warm salt water wash **Primary genital herpes < 28/40GA** ➢ Acyclovir for initial infection ➢ Regular prophylactic acyclovir from 36 wks GA ➢ **Vaginal delivery (only if > 6 wks after initial infection)** **Primary genital herpes > 28/40GA** ➢ Acyclovir for initial infection ➢ Regular prophylactic acyclovir ➢ **LSCS recommended** **Recurrent HSV before pregnancy** ➢ Regular prophylactic acyclovir from 36 wks GA

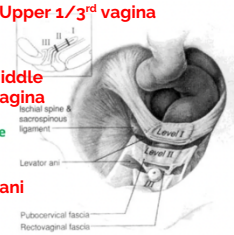
investigations and treatment options for STIs and NON-stis

	Syphilis	HIV	BACTERIAL VAGINOSIS	Candidiasis
	STI	**STI**	**NON-STI**	**NON-STI**
Define	Bacterial infection through skin and MM → disseminated through body ➢ 21 day incubation period		Overgrowth of bacteria in vagina due to loss of **lactobacilli "friendly" bacteria**	Vaginal infection by yeast
Cause	Treponema pallidum (spirocheate bacteria)	HIV – RNA retrovirus	Anaerobic bacteria ➢ Gardnerella vaginalis ➢ Mycoplasma hominis ➢ Prevotella species	*Yeast* ➢ *Candida albicans*
RF	• Oral, vag or anal sex • IVDU • Blood transfusion • Vertical transmission	• MSM • Unprotected sex • Multiple sexual partners	• Multiple sexual partners • XS vaginal cleaning (e.g. soaps, douching, vaginal washes) • Recent ABx • Smoking • Copper coil	• *High estrogen (pregnancy, post-meno)* • *Poorly controlled T2DM* • *Immunosuppression (e.g. steroids)* • *Broad spectrum ABx*
S+S	• **Primary** = painless chancre + Local LN • **Secondary** = systemic = fever, NS, chills, sweats • **Latent** = Sx disappear but patient still infected • **Tertiary** = Multi-organ affected (CVS, neuro) + **gummatous lesions (granulomatous skin lesions)** •		50% are asymptomatic ➢ Fishy smell watery grey discharge ➢ NOT itchy	Asymptomatic ➢ Thick white d/c with no smell ➢ Vulva and vaginal itchy or irritation
Comp.	**Neurosyphillis –** • *headache, altered behaviour,* • *tabes dorsalis (DC affected),* • *ocular syphilis, (argyll Robertson-pupil – accommodates but does not react)*	**AIDs defining illnesses** (e.g. • Kaposi's sarcoma, • CMV retinitis, • toxoplasmosis, • PCP, candidiasis, • lymphoma, • TB	• Increased risk of STI (C+G, HIV) Pregnancy comp. • Pre-term labour • PPROM • M/C • Chorioamnionitis • Postpartum endometritis • LBW	If severe • Erythema, swelling, • Dyspareunia • Excoriations + fissures
Ix	***Antibody testing*** ➢ *Dark field microscopy* ➢ *PCR testing – venereal disease research laboratory (VDRL)* ○ *TEST for active syphilis with 3-4 wks after primary infection*	***HIV antibody testing*** ➢ Beware takes 3/12 before infected HIV patient to become position ➢ **Requires verbal consent** **Offer: *test p24 antigen*** ➢ Tests for specific HIV antigen to get earlier positive result than Ab testing	***Consider screening for other STI (C+G, syphilis, HIV, Hep A/B/C)*** • High Vaginal swab (Charcoal – M/C/S) • Self-collected low vaginal swab ***Microscopy*** ➢ "clue cells" – epithelial cells from cervix that have bacteria stuck to them	➢ **CHARCOAL** Vaginal swab (M/C/S) **Test vaginal pH** ➢ pH < 4.5 = candidiasis ➢ pH > 4.5 = vaginosis and trichomonas
Mx	**Sexual health specialists** ➢ full screen for other STIs ➢ lifestyle advice about STI ➢ contact tracting ➢ prevention of futre infecitons **Acute mx** ➢ Deep IM benzathine benzylpenicillin *consider cef, Amoxil, doxy	**Acute Mx:** ➢ **Anti-retroviral therapy (ART) –** given irrespective of CD4 count or viral load ➢ **Prophylactic co-trimoaxole -** protect against PCP ➢ **Yearly cervical smears –** reduce risk of cervical cancer ➢ **IUTD –** flu, pneumococcal, hep A/B, DPT (AVOID live vaccines) **POST-exposure prophylaxis** ➢ ART therapy (*Truvada* and raltgravir for 28 days) ➢ HIV test done immiedatiely and 3/12 after exposure **Monitor** ➢ **CD4 count –** susceptibility to infection ➢ **Viral load –** treatment success (aim for < 50) **If pregnant** ➢ **Viral load < 50 = NVD** ➢ **Viral load > 50 = LSCS** ➢ **Unknown viral load = LSCS + IV zidovudine** ➢ **BF NOT recommended even if viral load undetectable**	**If asymptomatic** ➢ WATCH and wait **Symptomatic** ➢ **Avoid soaps**, or anything that disrupts natural flora ➢ **Metronidazole "flagyl"** PO or vaginal gel ➢ Advise NO alcohol with metronidazole as causes **disulfiram-like reaction (N/V +flushing w/ signs of shock and angioedema)**	**Lifestyle** ➢ Keep area dry ➢ Avoid track pants, skins **Medical (refer to guidelines)** ➢ **Anti-fungal creams or pessaries (e.g.** clotrimazole**)** ➢ **OTC canesten Duo (**single fluconazole tablet + clotrimazole cream) **Nb: WARN** use of antifungal creams/pessaries can damage latex condoms and prevent spermicides from working

PROLAPSE

Three Levels of Support: (DeLancey)
- **Level I (upper level):**
  - Cardinal/Uterosacral ligaments
- **Level II (middle level):**
  - Pubocervical fascia anteriorly
  - Rectovaginal fascia posteriorly
  - Levator ani muscles (through the tendineus fasciae pelvis)
- **Level III (lower level):**
  - Perineal membrane
  - Urogenital Diaphragm

• Cervix
• Upper 1/3rd vagina
• Middle vagina
• Levator ani



PP

Pelvic Prolapse → **ABNORMAL DESCENT OF AT LEAST ONE** pelvic organs through supporting fascia of vagina causing displacement of vaginal wall due to

1. **Loss of levator tone**
2. **Ligament Laxity of endopelvic urogenital hiatus**
3. **Loss of horizontal plate of levator plate**
4. **Prolapse**

Severity of prolapse

1. **Stage 0** = no prolapse
2. **Stage 1** = lowest part of prolapse > 1cm higher than hymen
3. **Stage 2** = lowest part of prolapse within +/- 1cm of hymen
4. **Stage 3** = lowest part of prolapse protrudes > 1cm out of vagina

Types

Cystocoele	Urethrocele	Enterocoele	Rectocele	Uterine prolapse	Vaginal vault prolapse
Urinary retention	Urethra prolapse	POD prolapse	Constipation (faecal loading)	Uterus prolapse into vagina	Prolapse of top of vagina into vaginal canal
Bulge in upper *anterior vagina*	Bulge in lower *anterior vagina*	Bulge in upper *posterior vagina*	Bulge in lower *posterior vagina*	**Beware of procidentia** (e.g. uterus prolapse through introitus and exteriorise)	Usu. after hysterectomy when supporting ligaments of vagina are transected

RF

1. **Damage and loss of support to pelvic floor structures** (*↓collagen strength*)
   - **advanced age** (↓E2 = weakens fascia)
   - **multiparious** (previous childbirth)
   - **Vaginal birth, prolonged 2nd stage, instrumental birth (forceps, ventouse)**
   - **LGA infants** (>4.5kg) , smoking, CT diseases (Ehlers), ➔ HTN, T2DM, increased sexual activity
2. **↑↑ intra-abdo pressure**
   - **Obesity**, intra-abdo mass,
   - **chronic constipation OR cough - bronchiectasis**
   - repetitive heavy lift

Sx

- Dragging sensation in pelvis/vagina
- "fullness" feeling or seeing a bulge
- Low back ache
- **ALL worsened** w/ prolonged standing/ exercise,
- **IMPROVED** when supine
- bladder, bowel and sexual dysfunction

Exam

- **informed consent** → Left-lateral position
- **Inspect vagina** → ask patient to cough
- **Sims speculum** lubricated + warm → push down on:
  - posterior vaginal wall - *rectocoele*
  - anterior wall – *cysotocoele*
- Look at cervix and/or vaginal vault
- Ask patient to stand up if no bulge found

Mx

Conservative

1. Healthy weight
2. **Smoking cessation**
3. **Treat** chronic cough/ constipation
4. **PT referral** → advise on Pelvic floor (kegel) exercises
5. **Bowel habit training (CBT)**

6. **HRT – (for intact uterus)** or
7. **E2 only HRT** (for no uterus)
8. **Topical Vaginal E2** ➔ improve fascia integrity and strength

➢ Laxatives for rectocele

Medical

1st line = Vaginal pessaries (ring, cube, shelf, gelhorn)
- ➢ Silicone devices worn inside vagina
- ➢ Fitted, washed and replaced every 3-4 months
- ➢ **A/E** = bleed, odour, erosion and occult stress incontinence

Indications: (↑QoL = NOT cure)
- ➢ Unsuitable for surgery
- ➢ Awaiting surgery
- ➢ Young women w/ future pregnancy plans

Contraindications
- ➢ Active local infection
- ➢ MESH surgery
- ➢ Non-compliant or sexually active

Surgical

Patient dependent (what do they want?) ➔ avoid mesh repairs
1. Anterior +/- posterior vaginal repair (colporrhaphy)
2. Uterine prolapse repair
3. Vaginal vault prolapse repair
4. Colpocleisis (close vagina completely)

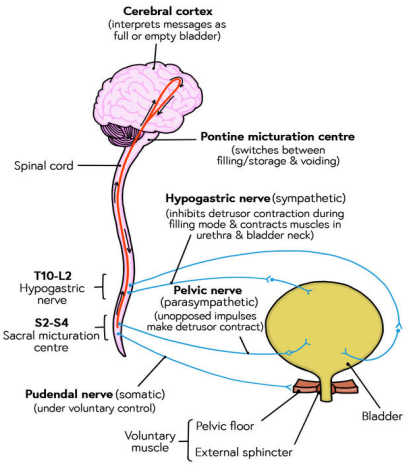
General Complications
1. General (bleed, infection, VTE)
2. Injury to Adjacent Organs – bowel, bladder, ureters
3. Anaesthetics risk

Specific Complications
1. Urinary Incontinence or retention
2. Dyspareunia OR altered sex experience
3. Surgery failure
4. Recurrence of prolapse

URINARY INCONTINENCE:

	Stress incontinence (*outlet incompetence*)	Urge Incontinence (*detrusor overactivity*)	Overflow incontinence
Issue	**Inability of sphincters to hold urine** = Involuntary urine leakage (esp. on ↑intra-abdo pressure = cough /sneeze)	Sudden contraction of detrusor muscle when bladder **only partially filled** → sudden urge to urinate ➢ Dry = reaches toilet in time ➢ Wet = cannot make to toilet	Underactive bladder causing urine to leak out (incomplete emptying)
RF	1) **Weak abdo muscles** (multipregnancy) 2) **+ intra-abdo pressure** > closing pressure of urethral sphincter = 3) **Sphincter tone failure** = childbirth trauma 4) **Loss of urethral support** = post-meno E2 def.	1) UTI 2) Overactive bladder syndrome 3) Bladder Stone/clot/tumour 4) Neuro = T2DM, SCI – stroke, Alzheimer, PD, *Key notes:* 5) Triggers = Advanced age, Smoking 6) URODYNAMIC studies needed	➢ **MAIN = Chronic urinary retention** (e.g. opioid usage) ➢ **Obstruction** = Urethral stricture, Stones, UTI ➢ **Weak bladder muscles** = NMD, diabetic cystopathy
Exam + Ix	➢ **Severity of Sx** = freq. of urination, incontinence, nocturnal and # of pads used ➢ **Prolapse Sx** = fullness, dragging, back ache ➢ **Sexual Sx** = dyspareunia ➢ **Pelvic pain** = bladder, pudendal neuralgia (worse on sitting) → if relieved with pudendal block (= NANTES) ➢ **+ve Cough/stress test** = stress leak ➢ **DRE** = assess anal sphincter tone + rectocele / prolapses ➢ **Neuro exam (L1-S4) – check pelvic tone** = perineum sensation + sacral reflex (anal wink) ➢ **Check for atrophic vaginitis, pelvic mass, urethral diverticulum**		***Basic Investigations*** ➢ **Intake-void diary** (3-5 days) ➢ **TVUS + bladder scan** (post/ pre-void residual bladder volume - <15% pre = normal) ➢ **Uroflowmetry** ➢ **BSL, HbA1C** ➢ **UA MSU + M/C/S**
Conserv	➢ **Reduce BMI < 25** ○ NEAT regime ➢ **PT = Supervised pelvic floor Kegel exercise** (if no hip fractures)	➢ **↓↓fluid intake** (esp. ↓caffeine, ↓EtOH, soda) ➢ **Bladder retraining** = Timed voiding for at least 6 weeks ➢ **Manage constipation** ➢ **Vaginal pessary** (1st line for prolapses)	**Bladder retraining** = Timed voiding for at least 6 weeks
Medical	➢ + metformin (if DM) ➢ Topical estrogen ➢ Duloxetine (SNRI) =2nd line if surgery not preferred	➢ ***Oxybutynin*** (anti-chol -M3 to ↓ACh – ANTI-SLUDGE) ➢ ***Mirabegron*** (B_3 agonist – less A/E) ➢ ***Duloxetine*** = SNRI → ↑ contract internal urethral sphincter	**Local E2** → manage post-meno atrophy *Flomax (tamsulosin) in men for both urge and overflow
Surgical	➢ **Mid-urethral sling - tension free vaginal tape (TVT)** ➢ **Colposuspensions** – **stitch anterio vaginal wall to pubic symphysis** (laparoscopically) **Need urodynamic studies BEFORE surgery*	➢ **Botulinum toxin type A→** blocks ACH release → injected directly into bladder via cystoscopy (*Pt must self-catheterize as botox can lead to urinary retention)* ➢ **Neuromodulation** (**percutaneous sacral stimulation**)→ posterior tibial or sacral nerve → inhibit reflex contraction of bladder	➢ IDC (self-catheterise) ➢ Continuous bladder drain

INNERVATION TO URINATE
- **PSNS** ➔ ACh ➔ detrusor relax [PROPULSION]
- **SNS** ➔ NA ➔ sphincter contracts [STORAGE]
- **Somatic pudendal** ➔ external urethral sphincter (voluntary control)



IMPORTANT DIFFERENTIAL FOR "LEAKY URINE"
- ➢ **UTI –** *"burning, stinging sensation + frequency"*
- ➢ **PROLAPSE -** *fullness*
- ➢ **HERNIA –** *reducible (DDx: incarcerated)*
- ➢ **NEURO** – MS, DM, Cauda Equina
- ➢ **Transient incontinence [DIAPPERS]**

Delirium, infection, atrophic urethritis, pharm, psych, XS urine (caffeine, EtOH), restricted mobility, stool incontinence

*__Many have mixed incontinence__- address biggest concern of pt to determine best treatment