Case study in sexual health

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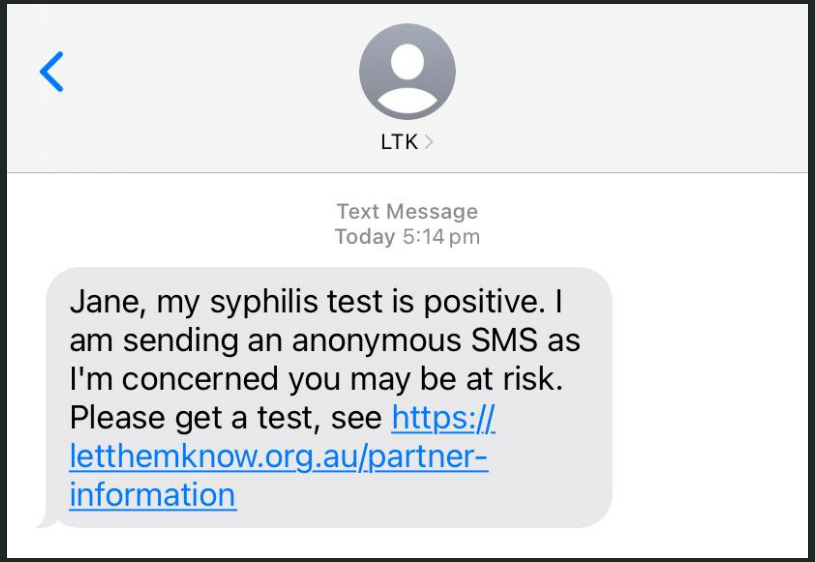
Disclaimer

Due to the sensitive nature of the topic I have altered details of cases to protect patient confidentiality

The names, ages, genders, sexual orientation and specifics of the cases have been changed

Jane
31 yr old female
New patient to me
No significant PMH on file

Doctor, I got sent this text message...



Public health update - Syphilis is on the rise

- High prevalence in men who have sex with men.
- Higher prevalence in some Aboriginal and Torres Strait Islander communities, particularly in remote and very remote locations.
- Increasing prevalence in general population, especially in women of reproductive age
- Syphilis in pregnant people has led to the re-emergence of congenital syphilis.

Taking a sexual health history

Goal of taking a sexual history is to stratify risk to guide rational testing and treatment

Need to identify high risk populations

Need to identify demographics and sexual practices and associated behaviours (eg injecting drug use) that place patient at higher risk

Suggested language from the STI Guidelines and the NSW STI testing tool:

“I’d like to ask you some questions about your sexual history so we can decide what tests to do. This information is confidential and it’s OK if it includes partners outside your current relationship”

- **Have you ever been diagnosed with (or thought you had) an STI? When was the last time you were screened for STIs?**
- **When was the last time you had sex? (for incubation and window periods)**
- **Was that with a regular or casual partner? Male/female/both?**
- **Other than your regular partner, have you had sex with anyone else?**
- **When you had sex, was it vaginal, oral or anal sex?**
- **When was the last time you had sex without a condom?**
- **For women of reproductive age - need to ask about contraception, pregnancy status**
- **For gender diverse patients be mindful to use gender affirming language - “do you have any preferred terms for your genitals that we should use?”**

People in these groups are at higher risk of having a sexually transmitted infection. Do you think any of these apply to you?’

People who:

- had sex overseas
- have been sleeping rough or homeless
- worked as a sex worker
- had tattoos, especially overseas
- injected drugs or used methamphetamine, especially if they shared needles or any of the equipment used for injecting
- have been in prison
- have been a refugee or recent migrant
- identify as Aboriginal or Torres Strait Islander
- experienced violence from a partner
- have been on PrEP
- have been sexually assaulted or had sex they didn't want to have

My patient

- 3 male sexual partners in the last 6 months
- Uses condoms but is worried she's had some inconsistent use with 2 of the partners
- On COCP and reports compliant
- Has had oral, vaginal and receptive anal intercourse variously with these partners
- Doesn't identify with any of the higher risk populations
- Last had an STI test in her mid-20s and it was negative
- Has never tested positive for an STI before
- CST up to date and NAD

Is asymptomatic of:

- PV discharge
- Pelvic pain
- Irregular PV bleeding
- Urinary symptoms
- Genital rashes or lesions

Risk stratification:
Confirmed syphilis contact
Woman of reproductive age
3 recent casual partners
Inconsistent condom use
Asymptomatic

What should I test for?

STEP 2A STI/HIV testing table

Recommendations from the Australian STI Management Guidelines[1] (unless otherwise stated)

WHO Is the patient?	WHAT Infection?	HOW OFTEN Should you test?
Young people (15–29 years)	CHLAMYDIA	Annually
	HEPATITIS B	Confirm HBV immune status (history of prior vaccination or serology) and vaccinate if not immune[2]
	GONORRHOEA SYPHILIS HIV	Consider according to risk assessment and local STI and HIV prevalence[3]
Asymptomatic people requesting STI/HIV testing	CHLAMYDIA	Annually or more often according to risk assessment
	HEPATITIS B	Confirm HBV immune status (history of prior vaccination or serology) and vaccinate if not immune[2]
	GONORRHOEA SYPHILIS	Consider according to risk assessment and local STI and HIV prevalence[3]
	HIV	Offer to everyone requesting testing[4]
Aboriginal and/or Torres Strait Islander people	CHLAMYDIA GONORRHOEA SYPHILIS	Annually or more often according to risk assessment
	HEPATITIS C HIV*	Consider a low threshold for offering testing for all infections – risk assessments assist with appropriate STI/BBV testing but are difficult to implement in some situations * Especially in the presence of other STIs[3] ** For those from rural/regional/remote areas
	HEPATITIS B	Confirm HBV immune status (history of prior vaccination or serology) and vaccinate if not immune[2]
	TRICHOMONIASIS	Test those from rural/regional/remote areas
Men who have sex with men (MSM) (ref: STIGMA Guidelines[5])	CHLAMYDIA GONORRHOEA SYPHILIS HIV	• 3 monthly testing for men who have had any type of sex with another man in the last 3 months • MSM who are not sexually active or in monogamous relationships may be tested less frequently, but at least annually
	HEPATITIS A HEPATITIS B	Confirm HAV and HBV immune status (history of prior vaccination or serology) and vaccinate if not immune[2]
	HEPATITIS C	If HIV-positive, on PrEP or have history of injecting drug use
Sex workers (see 'MSM' for male sex workers)	CHLAMYDIA GONORRHOEA SYPHILIS HIV	Testing should be based on: local STI prevalence; symptoms; diagnosed or suspected STI in contact; and clinical findings Frequency based on risk assessment (private and professional life) Offer testing more often if condom use is <100% (including history of condom breakages/slippages) or at patient request
	HEPATITIS A HEPATITIS B	Confirm HAV and HBV immune status (history of prior vaccination or serology) and vaccinate if not immune[2]
	HEPATITIS C	According to risk assessment: If antibody positive, test for hepatitis C NAAT to determine if patient has chronic hepatitis C
People who inject drugs (PWID)	CHLAMYDIA GONORRHOEA SYPHILIS	Annually or more often according to risk assessment
	HEPATITIS A HEPATITIS B	Confirm HAV and HBV immune status (history of prior vaccination or serology) and vaccinate if not immune[2]
	HIV HEPATITIS C	According to risk assessment and annually with an ongoing history of injecting drugs
Pregnant women (ref: Department of Health 2019 & RACGP[6])	**Routine test** offer to all pregnant women	
	HEPATITIS B	Test all and vaccinate susceptible women who are at increased risk/not immunised
	HIV	Recommend testing at the first antenatal visit *Repeat syphilis testing for Aboriginal and/or Torres Strait Islander women according to local recommendations and other women at high risk. Testing at additional time points is recommended in areas affected by an ongoing syphilis outbreak.
	HEPATITIS C	
	SYPHILIS*	
	Targeted test offer for women identified as at increased risk	
	CHLAMYDIA	Women younger than 30 years / All pregnant women in areas of high prevalence
	GONORRHOEA	Women with known risk factors or living in areas where prevalence is high

STEP 2B How to test[1] - infection, specimen site & test type

INFECTION	SPECIMEN COLLECTION SITE	TEST
FEMALES		
CHLAMYDIA	Vaginal swab* OR First pass urine (at any time of the day)* OR Endocervical swab** *Self-collected **Clinician-collected	Chlamydia NAAT (PCR)
GONORRHOEA	Vaginal swab* OR First pass urine (at any time of the day)* OR Endocervical swab** Throat swab (for female sex workers ONLY)** *Self-collected **Clinician-collected	Gonorrhoea NAAT (PCR)
TRICHOMONIASIS	Vaginal swab* OR First pass urine (at any time of the day)* *Self-collected	Trichomonas NAAT (PCR)
MALES		
CHLAMYDIA	First pass urine (at any time of the day)* – AND THE FOLLOWING FOR MSM: Throat swab (for MSM)** Rectal swab (for MSM)*** *Self-collected **Clinician-collected ***Self-collected or Clinician-collected	Chlamydia NAAT (PCR)
GONORRHOEA	First pass urine (at any time of the day)* Throat swab (for MSM)** Rectal swab (for MSM)*** **Clinician-collected ***Self-collected or Clinician-collected	Gonorrhoea NAAT (PCR)
FEMALES AND MALES		
SYPHILIS	Blood	Syphilis serology
HIV	Blood	HIV Ab/Ag
HEPATITIS A	Blood	Anti-HAV Ig-total
HEPATITIS B	Blood	HBsAg (Antenatal screening test) Anti-HBc (Acute, chronic or past infection) Anti-HBs (Immunity)
HEPATITIS C	Blood	HCV Ab

More information…	Australian STI Management Guidelines www.sti.guidelines.org.au	HIV, Hepatitis B & C Testing Portal www.testingportal.ashm.org.au

STEP 3 Contact tracing[8]

How far back to contact trace:

INFECTION	HOW FAR BACK TO TRACE
CHLAMYDIA	6 months
GONORRHOEA	2 months
SYPHILIS	Primary syphilis – 3 months plus duration of symptoms Secondary syphilis – 6 months plus duration of symptoms Early latent syphilis – 12 months
HIV	Start with recent sexual or injecting drug use needle-sharing partners Outer limit is onset of risk behaviour or last known HIV-negative test result
HEPATITIS B	6 months prior to onset of acute symptoms If asymptomatic, according to risk history For newly acquired cases contact your local Public Health Unit (PHU) and/or specialist
HEPATITIS C	6 months prior to onset of acute symptoms If asymptomatic, according to risk history For newly acquired cases contact your local PHU and/or specialist Note: rarely sexually transmitted except in HIV co-infection
TRICHOMONIASIS	Unknown; important to treat current partner

Consent

Patients should understand what you are testing for and why, and any personal implications of a positive test.

“I suggest we test for …. (e.g. chlamydia). This test will involve a urine test or vaginal swab. Chlamydia is easily treated but people often don’t know they have it. Are you happy to have a test? If the result is positive, we can also talk about your recent partners being tested.”

Investigations

The standard asymptomatic STI screen (for low risk sexual history)

Bloods:

- HIV serology
- Syphilis serology
- Hep B* (HBsAg – Hepatitis B surface antigen, Anti-HBs – Hepatitis B surface antibody, Anti-HBc – Hepatitis B core antibody)

*if no previously documented serological immunity

Urine/swabs for Chlamydia and gonorrhea use either:

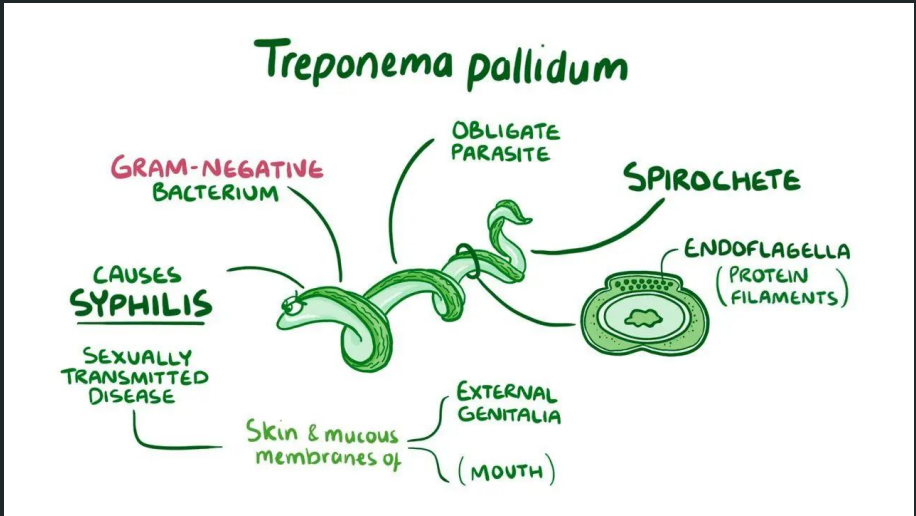
- Vaginal swab (clinician or self-collected)
- Endocervical swab
- First pass urine

If there is a genital lesion suspected to be a syphilitic chancre - swab using PCR swab

- Jane elects to have bloods + first pass urine
- Urine pregnancy test - negative
- Presumptively treat all sexual contacts from last 3 months of patients with primary or secondary syphilis regardless of serology with benzathine benzylpenicillin 2.4MU (1.8 g) IMI stat

Syphilis

- Treponema pallidum bacteria
- Skin to skin transmission
- Vertical transmission (mother to fetus)
- Congenital syphilis is one of the TORCH infections with devastating neonatal morbidity and mortality



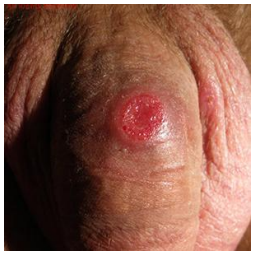
Clinical presentations of syphilis - “the great imitator”

50% of cases are asymptomatic
Symptoms are wide ranging manifesting with dermatological, neurological, ophthalmic, cardiovascular and systemic symptoms

Syphilis clinical presentations

Primary syphilis

- Chancre - single* painless ulcer on indurated firm base at site of entry eg. penis, cervix, mouth
- Inguinal lymphadenopathy
- Resolves in a few weeks

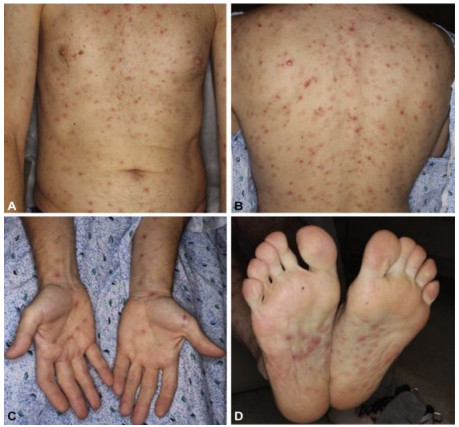


Secondary syphilis

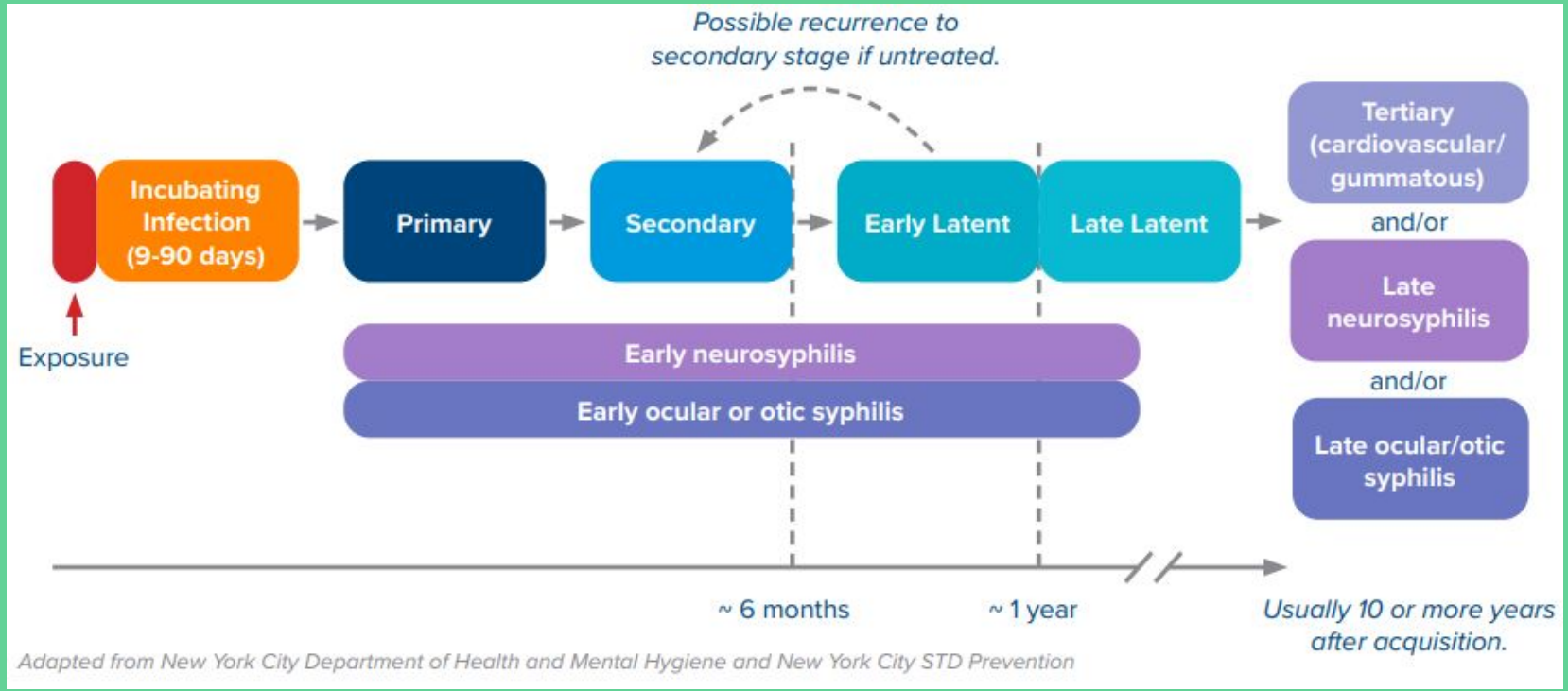
- 6 weeks post infection
- Systemic signs/symptoms
- Fever, malaise, headache, lymphadenopathy
- Skin involved in 90% of cases
- Generalised rash over trunk, palms, soles
- Condylomata
- Neuro signs - vision, hearing, cranial nerve palsies, meningitis
- Untreated will resolve over weeks

Tertiary syphilis

- Neurological - dementia, gait, pain, sensory deficits
- Gummas
- CVD e.g. aortic aneurysms, coronary arteritis



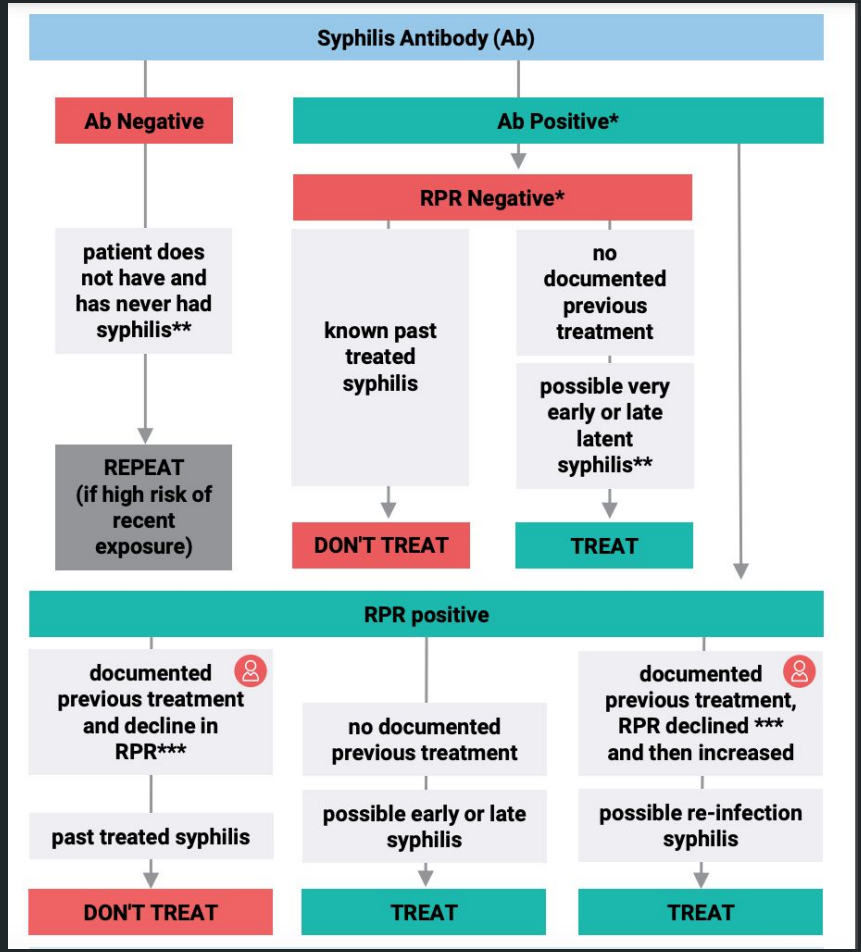
Syphilis progression



Testing results

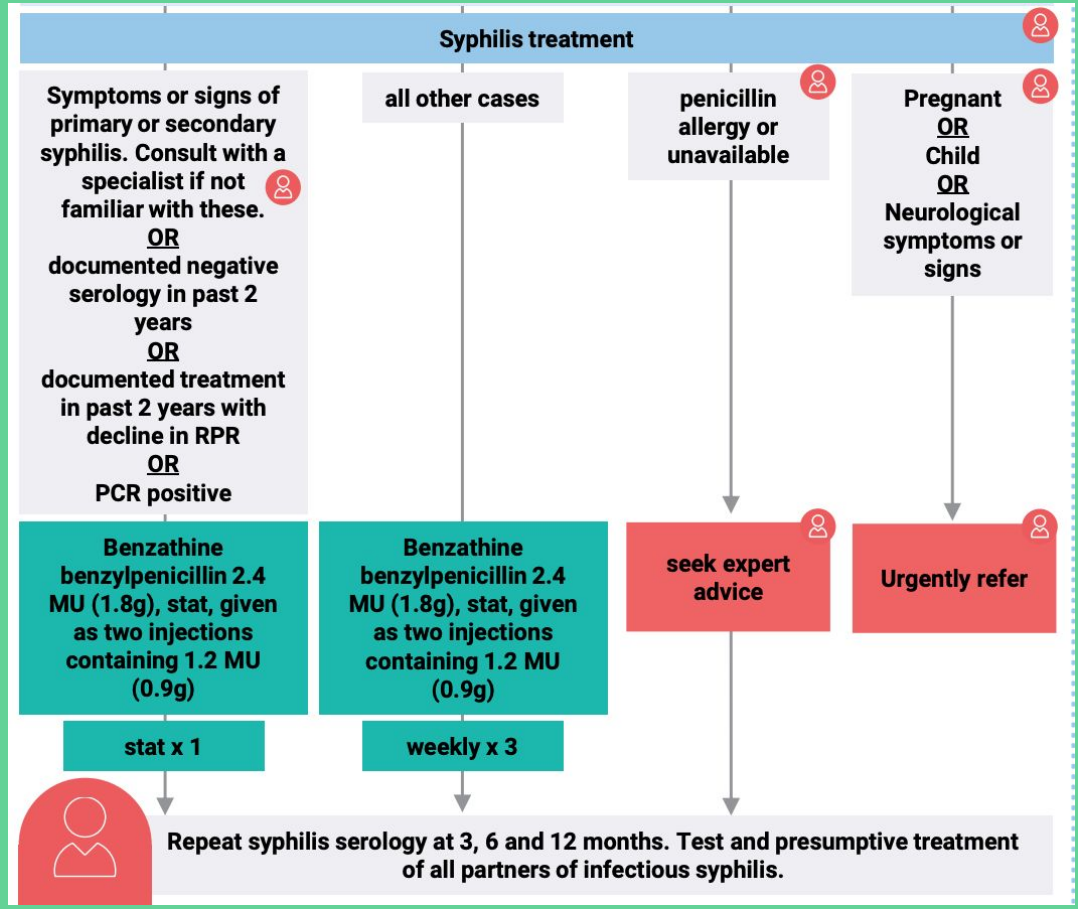
Interpreting syphilis serology can be challenging - seek help if unsure

Laboratory performs initial syphilis specific antibody (CMIA/EIA) testing and if it's reactive then they do confirmatory testing with TPPA/TPHA and RPR as a marker of disease activity and treatment response



Treatment

- Specialist input is highly recommended
- Treatment is with benzathine benzylpenicillin*
- Number of doses needed depends on duration of infection:
  - Early syphilis (<2 years) 1 stat dose
  - Late syphilis (>2 years or duration unknown) - weekly dose for 3 weeks
- Early syphilis patients need RPR serology repeated on day of treatment to obtain baseline for monitoring response to treatment



Management

- Monitor for Jarisch-Herxheimer reaction - common reaction to treatment occurring 6-12hrs post treatment where patients get headaches, fever, malaise, rigors, joint pain, lasts for several hours. Analgesia and supportive care.

- Advise no sexual contact for 7 days after treatment commenced or until course is completed and symptoms resolve

- Advise no sex with partners from the last 3 months (primary syphilis) or past 6 months (secondary syphilis) or 12 months (early latent) until partners have been tested and treated

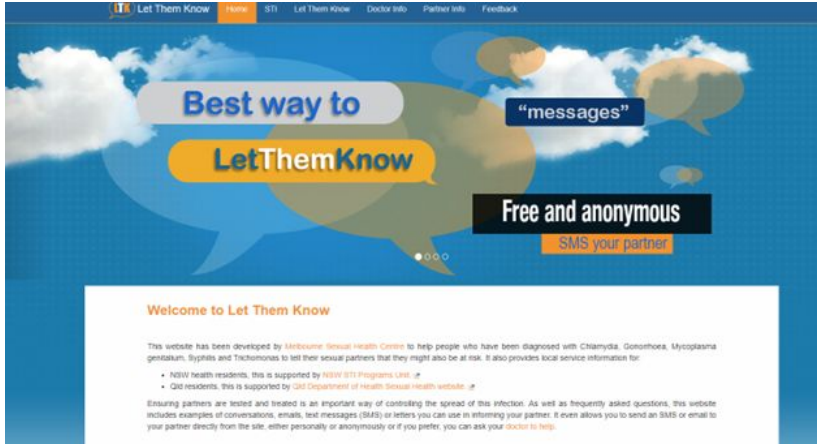
- Notify NSW Health using the Syphilis Notification Form

Contact tracing

Trace back using sexual history and clinical stage of infection:

- Primary syphilis - 3 months plus duration of symptoms
- Secondary syphilis - 6 months plus duration of symptoms
- Early latent - 12 months or most recent negative test
- Late latent - test current partners, if in doubt about duration contact trace as for early latent syphilis

Ongoing sexual contacts of pregnant people are highest priority



Contact tracing services:

- Let Them Know
- The Drama Downunder
- Better to Know

Follow up and test of cure

To confirm patient adherence with treatment

To confirm contact tracing procedures have been undertaken or offer more contact tracing support.

Repeat serology to assess response to treatment - seek specialist advice.

Provide further sexual health education and prevention counselling.

Test of cure

Review all patients clinically and with repeat RPR testing at 3 months, then at 6 months and (if necessary) at 12 months after completing treatment. A 4-fold drop (e.g. 1:8 to 1:2) indicates adequate response to treatment. Seek specialist advice if RPR is rising or a 4-fold drop is not achieved by 12 months.

Jane's results:

SYPHILIS SEROLOGY

Syphilis (CMIA) Negative

Antibodies to Treponema pallidum NOT detected by chemiluminescent immunoassay (CMIA). This result suggests either no exposure to T. pallidum or very early primary syphilis infection prior to the development of antibodies. If early infection is suspected, please repeat in 14 days.

All testing performed on serum or plasma unless otherwise specified.

HEPATITIS SEROLOGY

Request Number	12993640	26775223
Date Collected	16 Jul 21	4 Mar 24
Time Collected	08:00	16:00
Hepatitis C Antibody	Not Detected	Not Detected
Hepatitis A IgG Antibody		DETECTED
Hepatitis B Surface Antigen	Not Detected	Not Detected
Hepatitis B Surface Antibody (mIU/mL)		< 10

No evidence of current or past Hepatitis C virus (HCV) infection. HCV antibodies may not be detected up to 6 months post exposure. Suggest sending a further sample after an appropriate interval if indicated.

Evidence of past exposure or immunisation to hepatitis A virus (HAV). If acute HAV infection suspected please request HAV IgM.

No evidence of current or chronic Hepatitis B virus infection.
No evidence of immunity to hepatitis B virus. Vaccination may be indicated.

Plot twist!

Clinical notes: STI screening.

Clinical Notes : STI screening.

NUCLEIC ACID TESTING (NAT)

Specimen / site	URINE
Chlamydia trachomatis	DETECTED
Neisseria gonorrhoeae	Not detected

This specimen has been tested using the Roche cobas CT/NG 6800 assay.

Please note: The optimal samples for this assay are first void urine samples, endocervical or urethral swabs.

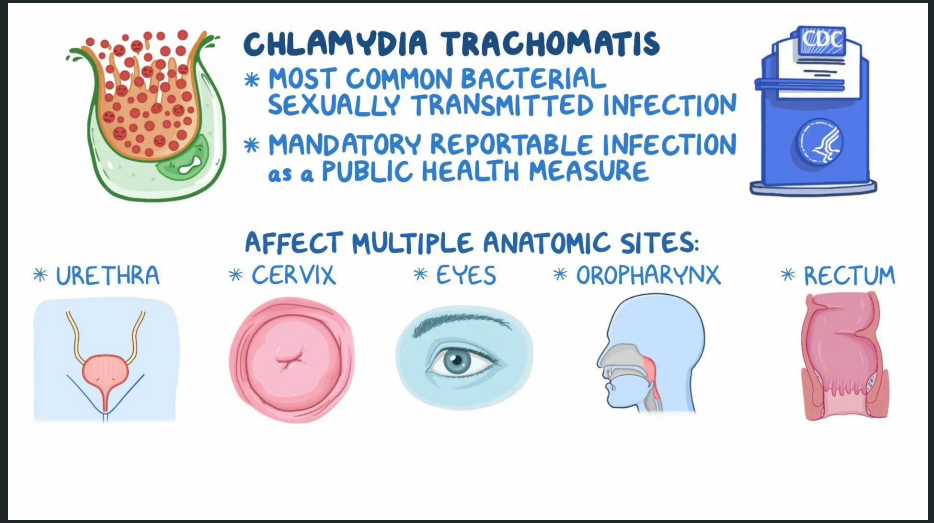
Azithromycin or doxycycline are recommended for treatment of uncomplicated genital Chlamydia infection. Investigation and treatment of partner(s) should be initiated.

This condition requires notification to the Public Health Unit by laboratories. A copy of this report has been sent to the Public Health Unit in accord with the Public Health Act 2010 and the Public Health Regulation 2012.

Chlamydia brief refresher

Chlamydia

- Most common reportable communicable disease in Australia
- Frequently asymptomatic
- Reinfection is common (past infection doesn't confer immunity)



Clinical presentation

85-90% have no symptoms

- Dysuria
- Penile urethral discharge
- Vaginal discharge
- Testicular pain
- Pelvic Pain
- Intermenstrual bleeding
- Postcoital bleeding
- Dyspareunia
- Anorectal symptoms

Complications

- Epididymo-orchitis
- Pelvic inflammatory disease (PID)
- Infertility
- Pregnancy - Ectopic pregnancy, Premature rupture of the membranes, preterm delivery, and low-birthweight infants
- Reactive arthritis: arthritis, sometimes with concurrent rash and gastrointestinal symptoms
- Cervicitis
- Conjunctivitis
- Perihepatitis

Diagnosis

Site/Specimen	Test	Consideration
Urethra First pass urine (FPU)	NAAT	In people who do not have a vagina or if endocervical swab/self-collected vaginal swab cannot be taken. Less sensitive than self-collected vaginal swab
Self-collected vaginal swab	NAAT	Best test if no speculum examination
Clinician-collected endocervical swab	NAAT	Best test if examined
Anorectal swab	NAAT	Any patient with anorectal symptoms All men who have sex with men Self-collection or during clinical examination
Pharyngeal swab	NAAT	All men who have sex with men.

Management

Principal treatment options		
Infection	**Recommended**	**Alternative**
Uncomplicated genital or pharyngeal infection	Doxycycline 100 mg PO, BD 7 days	Azithromycin 1 g PO, stat.
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

- Advise no sexual contact for **7 days** after treatment is commenced, or until the course is completed and symptoms resolved, whichever is later.
- Advise no sex with partners from the last **6 months** until the partners have been tested and treated if necessary.
- Contract trace all partners back for **6 months**
- Consider Patient Delivered Partner Therapy (PDPT) **-** supply of azithromycin for partners of patients diagnosed with uncomplicated genital chlamydia trachomatis infection is available in New South Wales

Follow up

Test for re-infection

- Re-infection is common
- Retesting at **3 months** is recommended to detect re-infection

Do not routinely need to do a test of cure (except if pregnant or with anorectal infection treated with azithromycin) - if you are doing one it should be > 4 weeks from treatment to avoid false positives

Case conclusion

Jane was treated with doxycycline
She is due for her 3 month follow up chlamydia test soon

Key learning points

1. Syphilis is on the rise - low threshold to test. Especially in pregnancy (both on early antenatal bloods and again at 26-28 weeks)
2. Syphilis is the great imitator and 50% of cases are asymptomatic
3. Seek specialist advice about interpreting positive syphilis serology and planning treatment
4. Chlamydia is the most prevent reportable communicative disease
5. 85-90% of cases are asymptomatic
6. Treatment is straightforward and effective
7. **Contact trace, contact trace, contact trace**

Key resources

1. Australian STI Management Guidelines - https://sti.guidelines.org.au/
2. ASHM Decision Making in Syphilis tool - https://ashm.org.au/resources/syphilis-decision-making-tool/
3. NSW STI/HIV testing tool - https://stipu.nsw.gov.au/gp/hiv-and-sti-clinical-management/stihiv-testing-tool/
4. Let them Know - https://letthemknow.org.au/
5. Better to Know - https://www.bettertoknow.org.au/
6. The Drama Downunder - https://www.thedramadownunder.info/

The Public Health Unit and the Holden Street Sexual Health Clinic