# Acknowledgment of Country

We acknowledge that the land we meet on today is the traditional land of the Kaurna people, and that we respect their spiritual relationship with their country.

We also acknowledge the Kaurna people as the custodians of the Kaurna land, and that their cultural and heritage beliefs are still important to the living Kaurna people today.


SA Health

# Syphilis Update
# GP Obstetric Shared Care Program

November 2023

Dr Alison Ward

Sexual Health Physician

Adelaide Sexual Health Centre

Please note – This presentation includes some graphic images of genital infection and other STI manifestations

Government of South Australia

SA Health

# About Adelaide Sexual Health Centre (previously known as Clinic 275)

- Government funded, free and confidential state-wide specialist STI service
- STI/HIV testing and treatment
- No Medicare card required
- Not visible on EPAS
- Location: 137 East Terrace, Adelaide
- We expect to move to Currie Street, near the new RAH
- Can call Duty Doctor phone line to speak to a consultant Sexual Health Physician: (08) 7117 2800

Government of South Australia

SA Health

# Priority populations for STIs/BBVs

- Youth (</=29 years)
- Men who have sex with men (MSM)
- Sex workers (and clients of sex workers)
- Culturally and Linguistically Diverse (CALD) populations, migrants and travellers
- Aboriginal and Torres Strait Islander peoples

BBVs:

- Injecting drug users
- Incarcerated populations

Government of South Australia

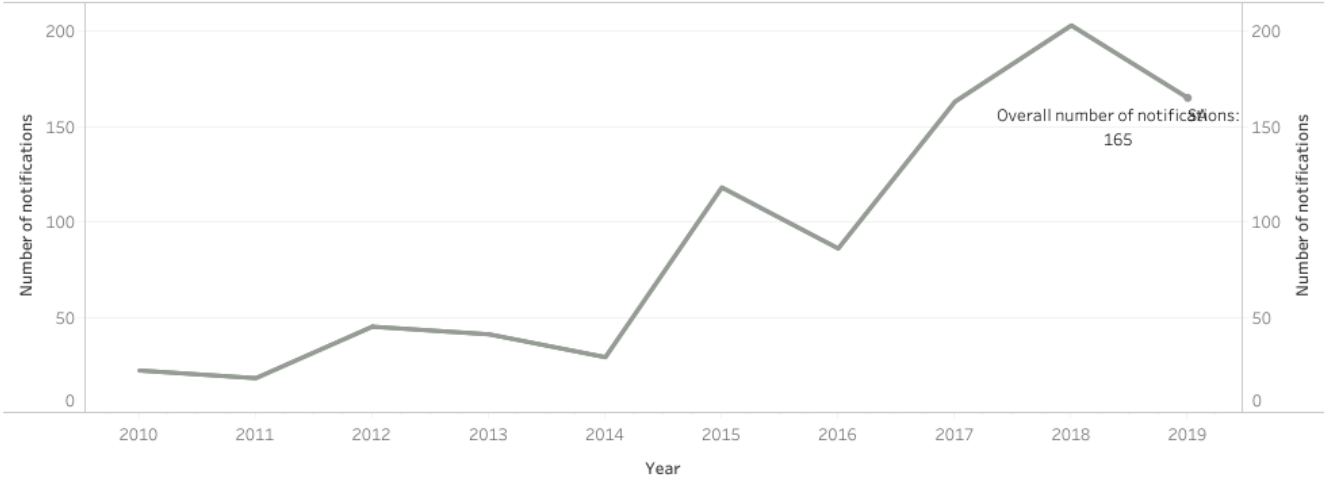
SA Health

# South Australia infectious syphilis cases (absolute numbers)
# NNDSS data, Kirby Institute, University NSW

**Filter by condition**
Infectious syphilis

**Newly acquired/Unspecified/All**
All

Number of notifications by condition and population




**Select stratificaiton**
Jurisdiction

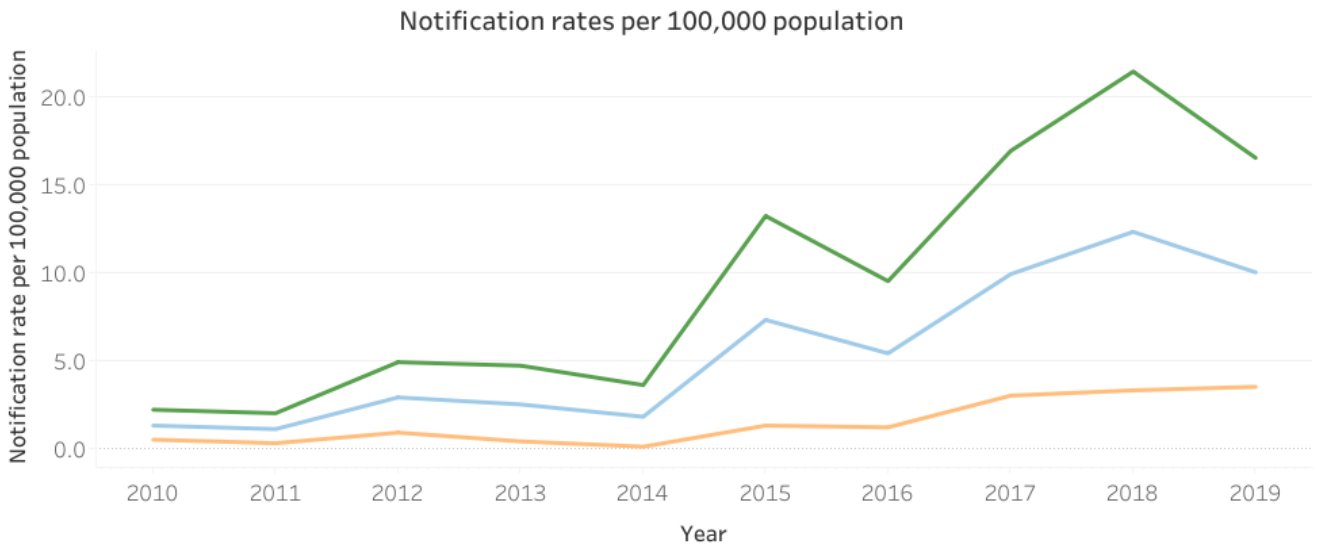
**Category**
SA

**Filter by population**
SA

| | Year | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Category | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| SA | 22 | 18 | 45 | 41 | 29 | 118 | 86 | 163 | 203 | 165 |
| Grand Total | 22 | 18 | 45 | 41 | 29 | 118 | 86 | 163 | 203 | 165 |

# South Australia infectious syphilis cases rate per 100,000 population
# NNDSS data, Kirby Institute, University NSW

Select condition
Infectious syphilis




Population SA SA female SA male

Age All

Select jurisdiction
SA

Select Aboriginal and Torres Strait Islander status
Overall

Sex
All

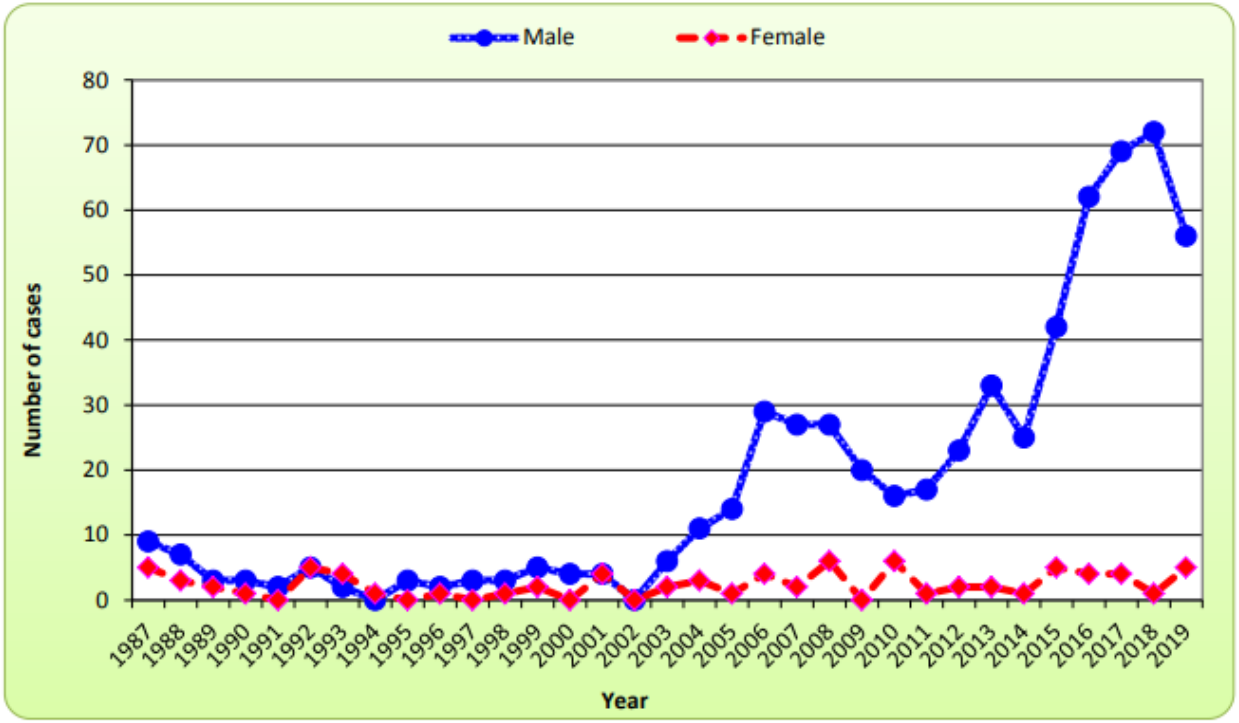
Select remoteness area
Overall

Date

| Condition | Population | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Infectious syphilis | SA | 1.3 | 1.1 | 2.9 | 2.5 | 1.8 | 7.3 | 5.4 | 9.9 | 12.3 | 10.0 |
| | SA female | 0.5 | 0.3 | 0.9 | 0.4 | 0.1 | 1.3 | 1.2 | 3.0 | 3.3 | 3.5 |
| | SA male | 2.2 | 2.0 | 4.9 | 4.7 | 3.6 | 13.2 | 9.5 | 16.9 | 21.4 | 16.5 |

# Infectious syphilis diagnoses at Adelaide Sexual Health Centre 1987-2019

Figure 6 Number of infectious syphilis diagnoses by gender at ASHC, 1987-2019



# What causes STI epidemics to escalate?

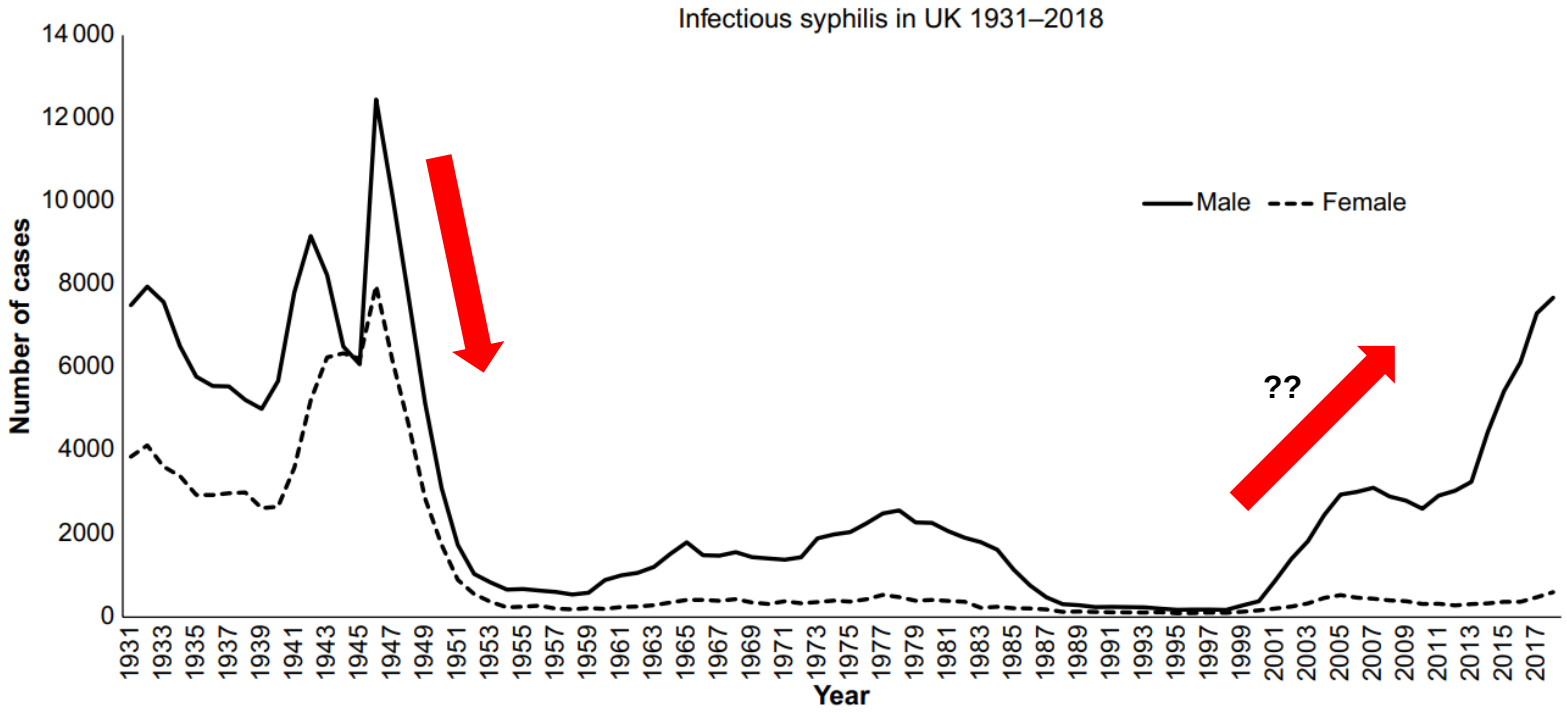
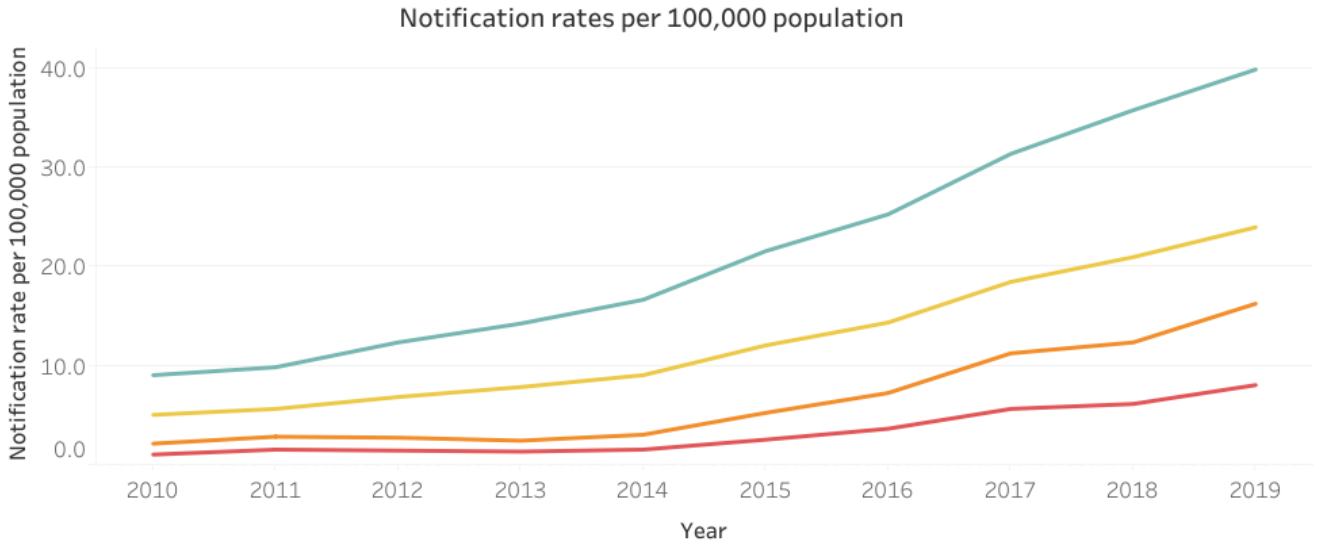



**Fig. 1.** Number of cases of infectious syphilis notified in the United Kingdom 1931–2018. Source: UK Health Security Agency.

# National Australian rate per 100,000 population Infectious Syphilis

Data courtesy of Kirby Institute, University of NSW

Select condition
Infectious syphilis




Population Female Male Overall

Age All

Select jurisdiction
Overall

Select Aboriginal and Torres Strait Islander status
Overall

Sex
All

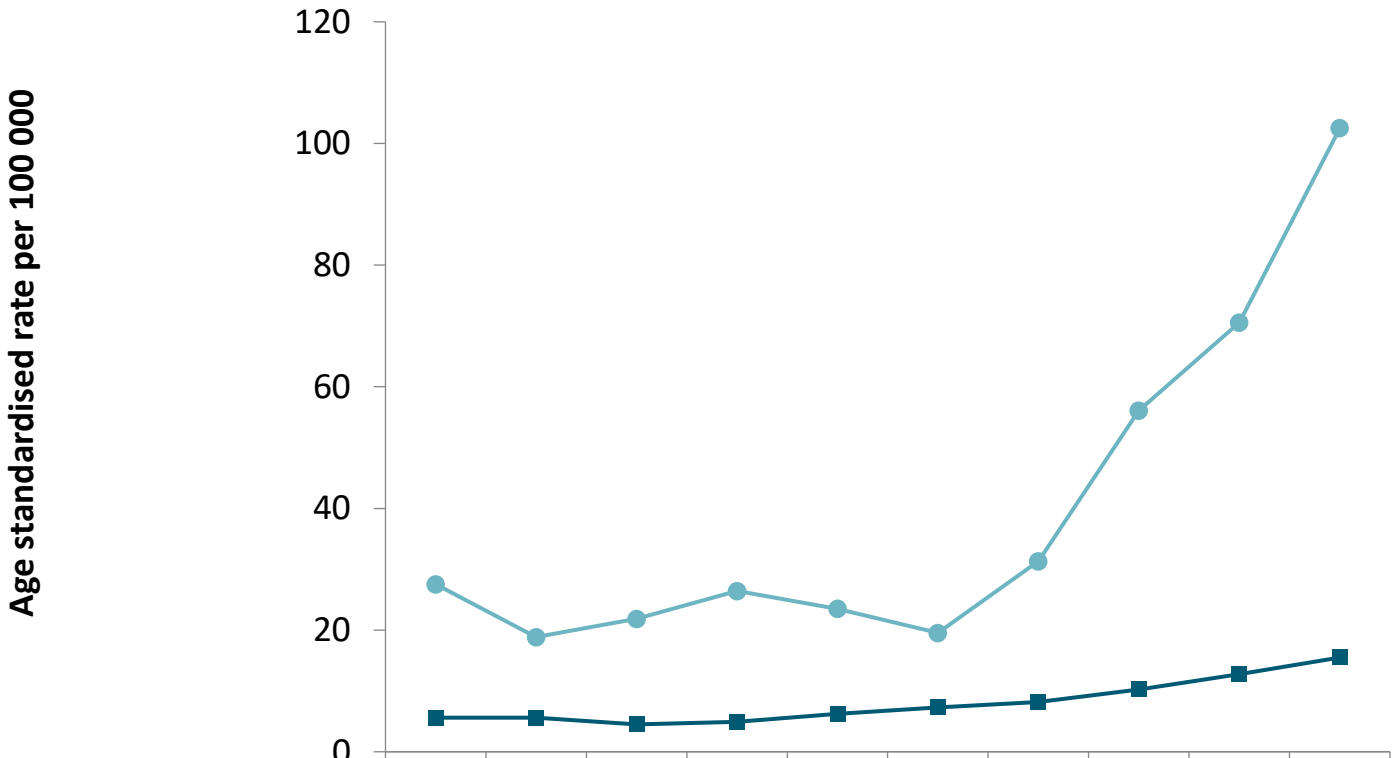
Select remoteness area
Overall

Date

| Condition | Population | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Infectious syphilis | Female | 1.0 | 1.5 | 1.4 | 1.3 | 1.5 | 2.5 | 3.6 | 5.6 | 6.1 | 8.0 |
| | Male | 9.0 | 9.8 | 12.3 | 14.2 | 16.6 | 21.5 | 25.2 | 31.3 | 35.7 | 39.8 |
| | Overall | 5.0 | 5.6 | 6.8 | 7.8 | 9.0 | 12.0 | 14.3 | 18.4 | 20.9 | 23.9 |

N.B. Orange line is women aged 15-44 years

# **Figure 4.3.1** Infectious syphilis notification rate per 100 000 population, 2008–2017, by Indigenous status



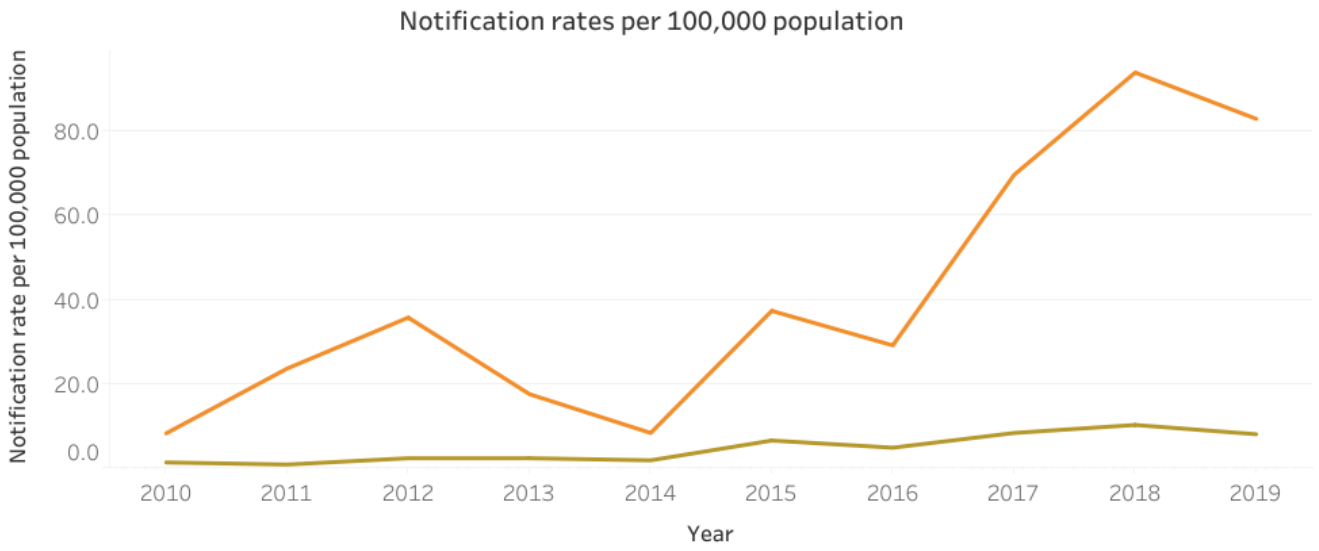

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|---|
| Aboriginal and Torres Strait Islander | 27.5 | 18.8 | 21.8 | 26.4 | 23.5 | 19.5 | 31.3 | 56.1 | 70.6 | 102.5 |
| Non-Indigenous | 5.6 | 5.6 | 4.5 | 4.9 | 6.2 | 7.3 | 8.2 | 10.2 | 12.8 | 15.5 |



Source: Australian National Notifiable Disease Surveillance System; includes all jurisdictions as Aboriginal and Torres Strait Islander status was ≥50% in each of the 10 years presented.

# South Australian Infectious syphilis notification rate per 100,000 population, 2010-2019, by Indigenous status

Select condition
Infectious syphilis




Population SA Aboriginal and Torr.. SA Non-Indigenous

Age All

Select jurisdiction
SA

Select Aboriginal and Torres Strait Islander status
Multiple values

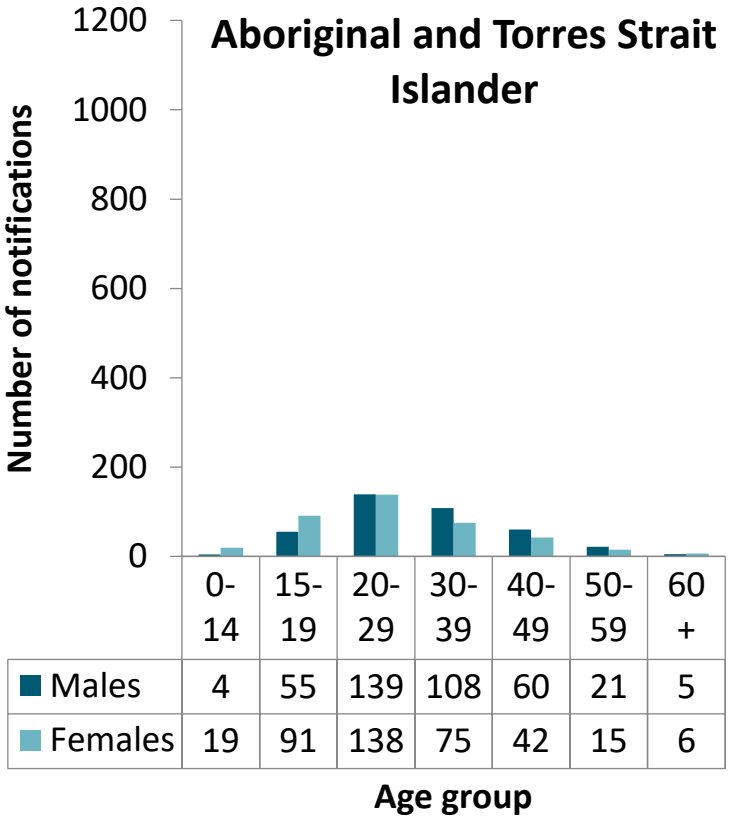
Sex
All

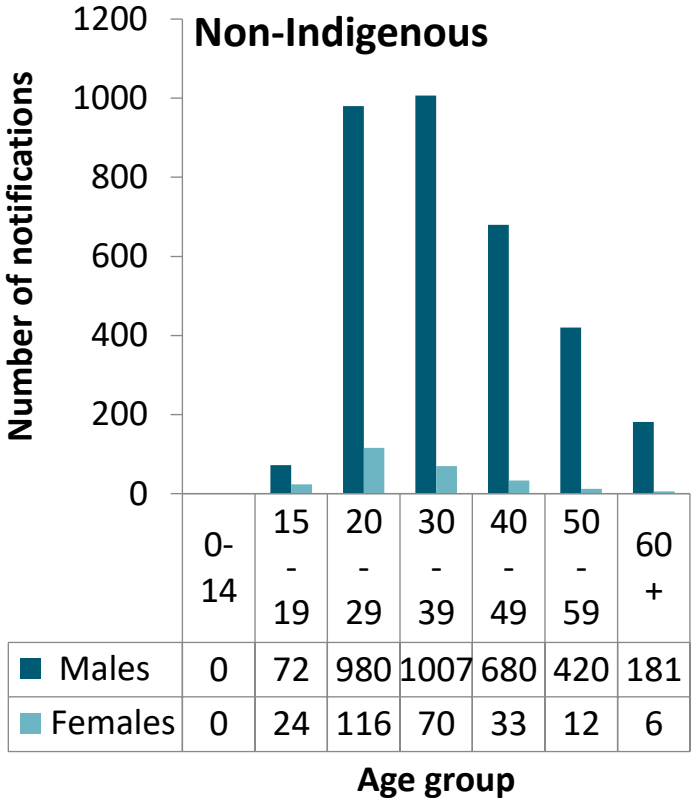
Select remoteness area
Overall

Date

| Condition | Population | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Infectious syphilis | SA Aboriginal and Torres St.. | 8.1 | 23.5 | 35.6 | 17.4 | 8.2 | 37.2 | 29.0 | 69.5 | 93.8 | 82.8 |
| | SA Non-Indigenous | 1.2 | 0.7 | 2.2 | 2.2 | 1.7 | 6.4 | 4.7 | 8.2 | 10.1 | 7.9 |

# **Figure 4.3.3** Number of infectious syphilis notifications, 2017, by Aboriginal and Torres Strait Islander status, sex and age group

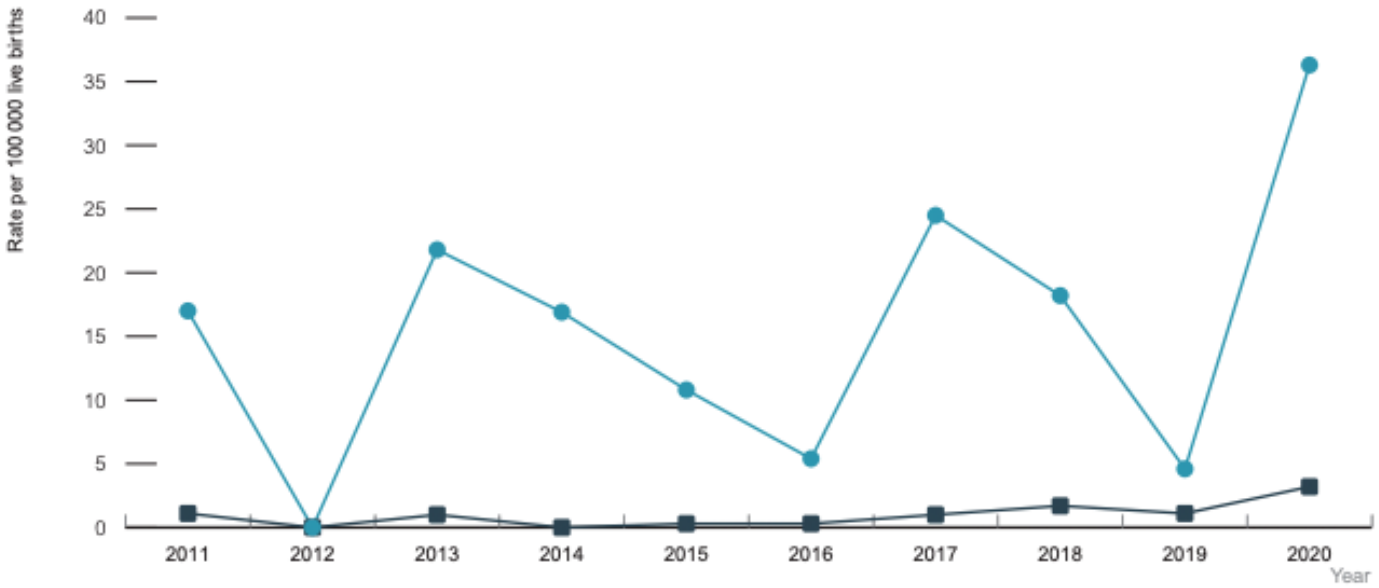





Source: Australian National Notifiable Diseases Surveillance System; includes all jurisdictions as Indigenous status was ≥50% in each of the 10 years presented

**Figure 25** Congenital syphilis rate per 100 000 live births, 2011–2020, by Aboriginal and Torres Strait Islander status



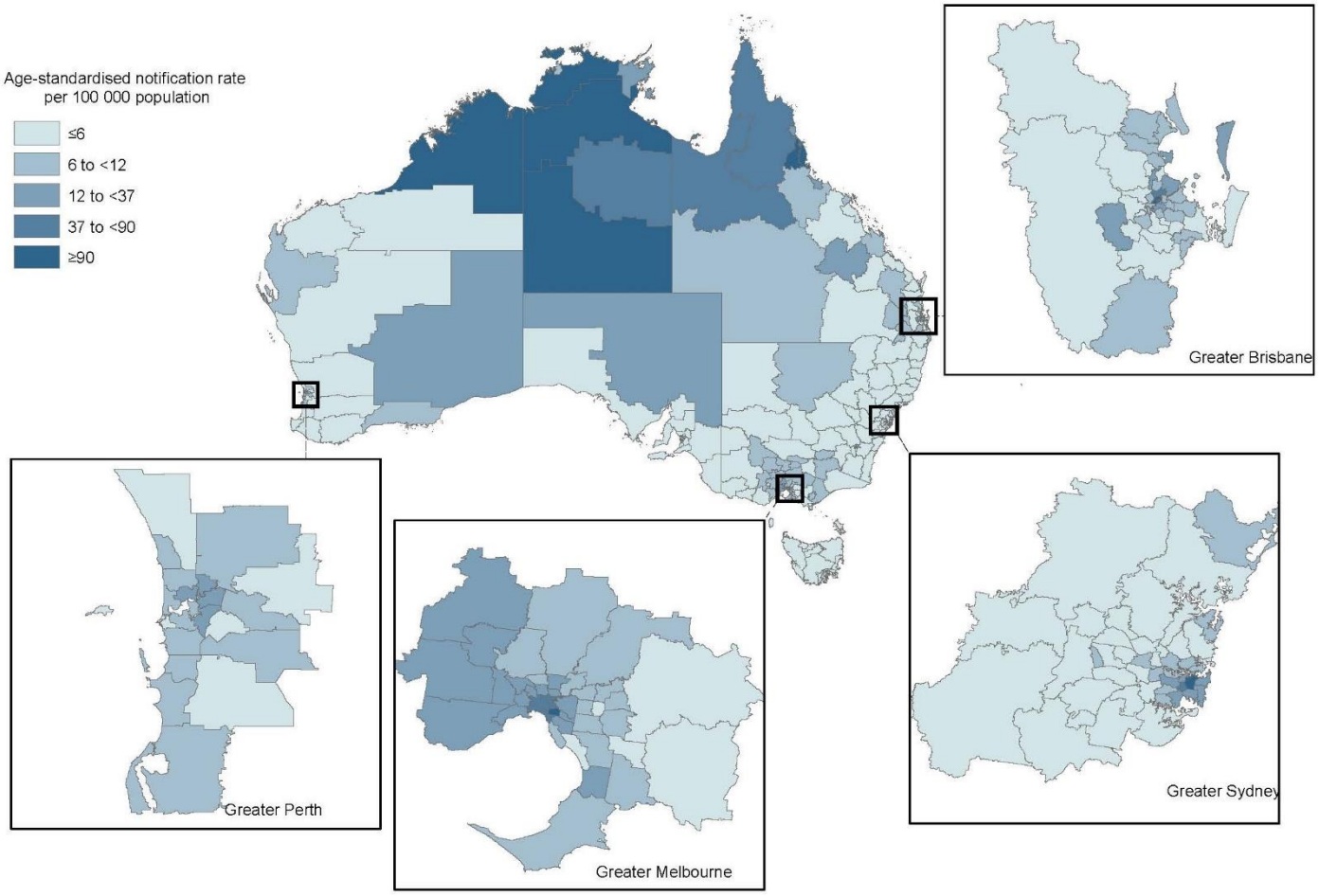

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-Indigenous[a] | 1.1 | 0.0 | 1.0 | 0.0 | 0.3 | 0.3 | 1.0 | 1.7 | 1.1 | 3.2 |
| Aboriginal and Torres Strait Islander | 17.0 | 0.0 | 21.8 | 16.9 | 10.8 | 5.4 | 24.5 | 18.2 | 4.6 | 36.3 |

a Includes notifications where Aboriginal and Torres Strait Islander status was not reported.

Source: Australian National Notifiable Diseases Surveillance System.

https://www.kirby.unsw.edu.au/sites/default/files/documents/Annual-Surveillance-Report-2021_STI-221107.pdf accessed 15 Oct 2023

**Figure 4.3.11** Average age-standardised infectious syphilis notification rate per 100 000 population, by statistical area level 3, 2015–2017, Australia and major cities

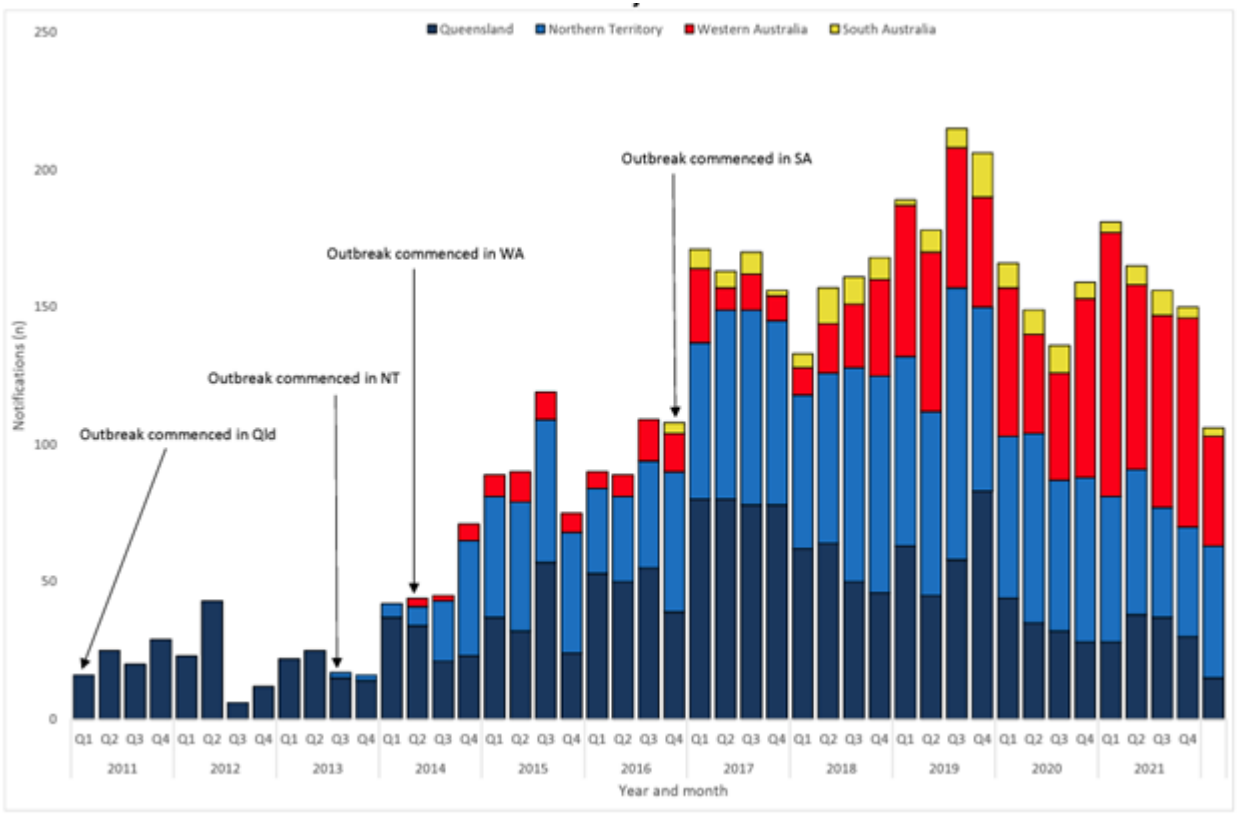



**Note:** Average infectious syphilis notification rates for the three-year period 2014–2016 were used to minimise the influence of fluctuation in the number of infectious syphilis diagnoses.



Source: Australian National Notifiable Diseases Surveillance System

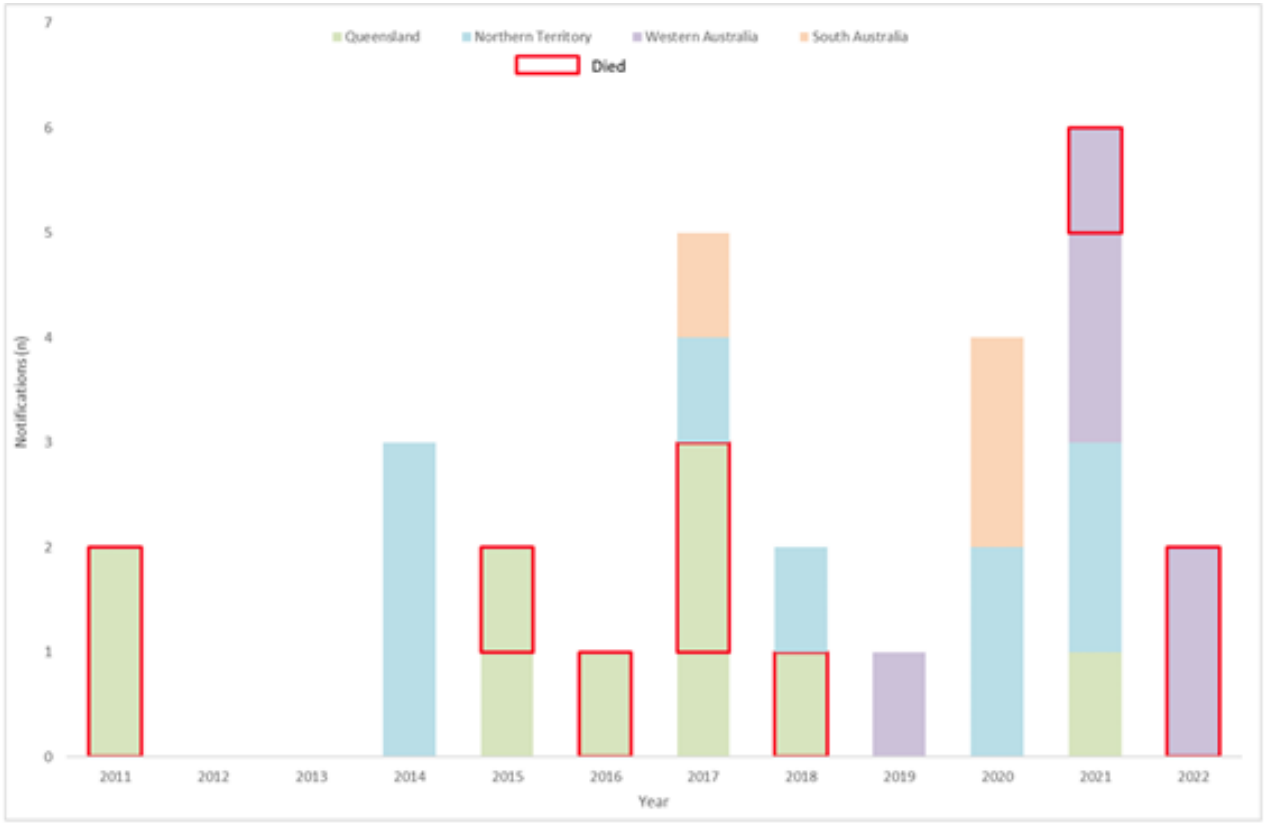
# Overview of Multijurisdictional Syphilis Outbreak (MJSO)




**Graph: Notifications of category 1 (residing in declared outbreak region) infectious syphilis outbreak cases notified in Aboriginal and Torres Strait Islander people residing in affected regions of Queensland, the Northern Territory, Western Australia and South Australia from commencement of the outbreak in each jurisdiction to 31 March 2022: National Syphilis Surveillance Quarterly Report Quarter 1: 1 January - 31 March 2022**

Government of South Australia
SA Health

# Congenital cases related to MJSO




28 congenital syphilis cases have been reported in outbreak regions since 2011, with 10 deaths in babies related to the condition.

Government of South Australia

SA Health

Reference: ASHM
https://syphilisoutbreaktraining.com.au/epidemiology/

**Figure 6: Notifications of congenital syphilis, by Indigenous status, Australia, January 2011 to December 2022**

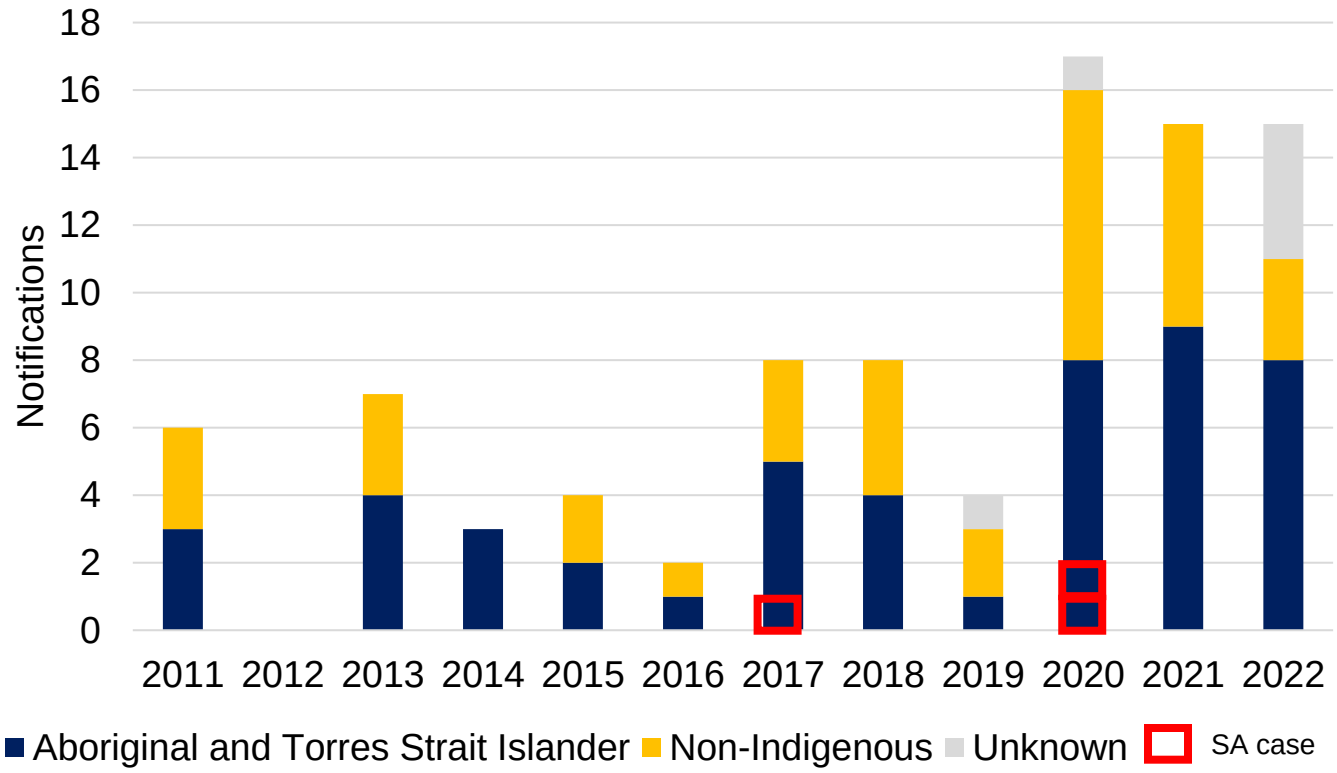
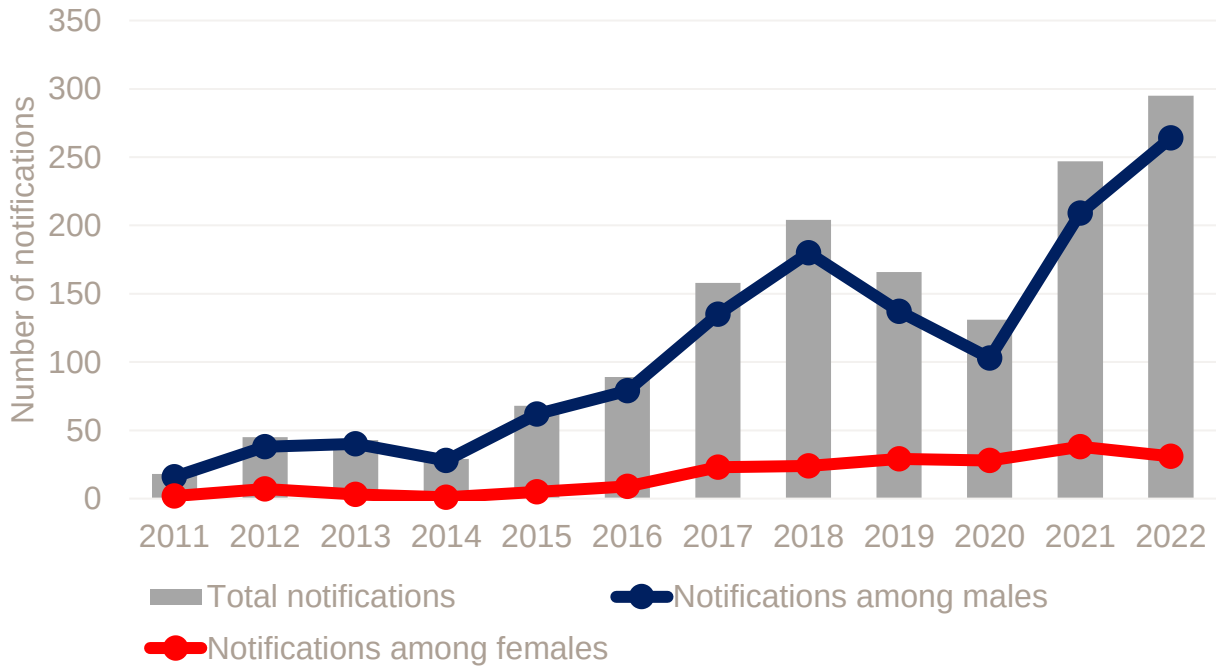


**Figure 1: Notifications of infectious syphilis, by sex at birth, South Australia, January 2011 to December 2022**




**Year To Date (30 June 2023)**

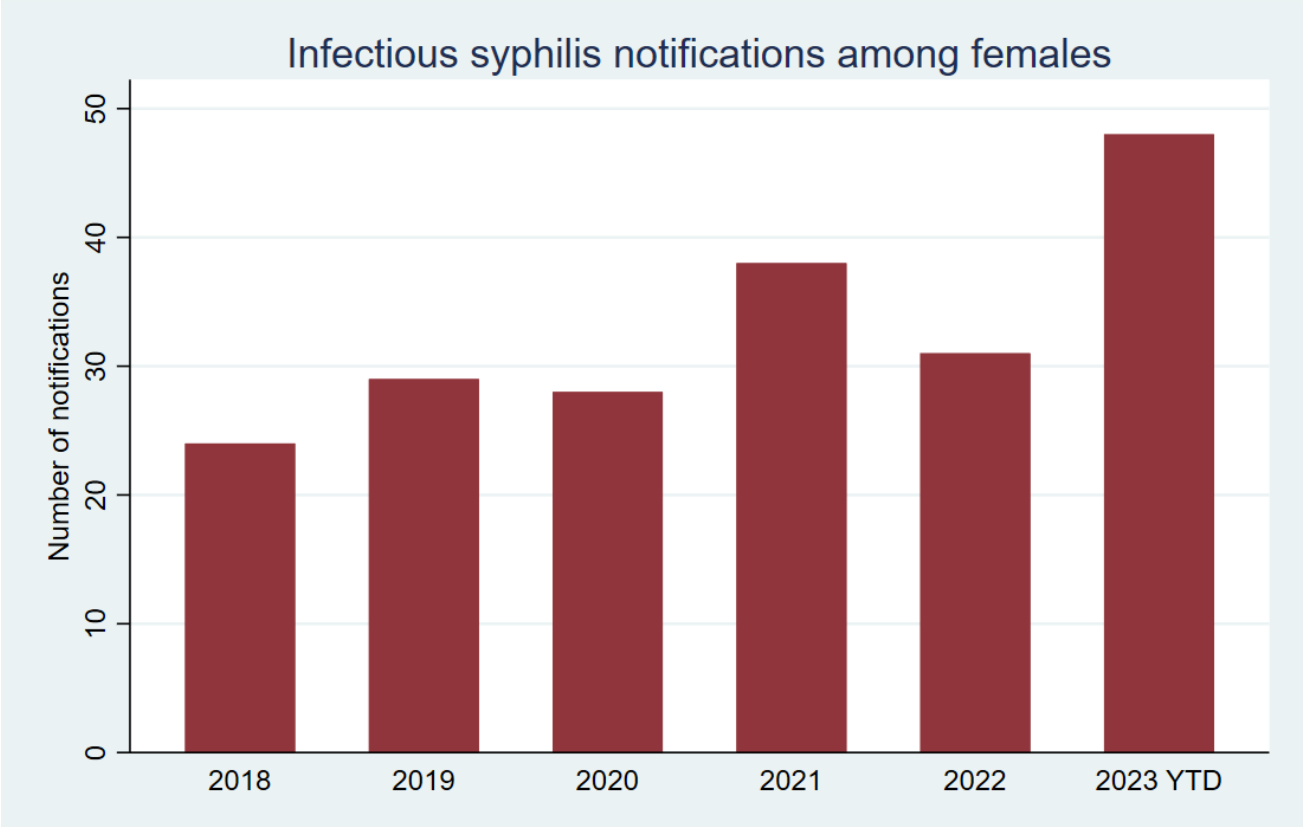
189 notifications 1 January to 30 June 2023.

vs

108 notifications for the same time period in 2022.

***+75% increase** (including doubling of notifications among females)*

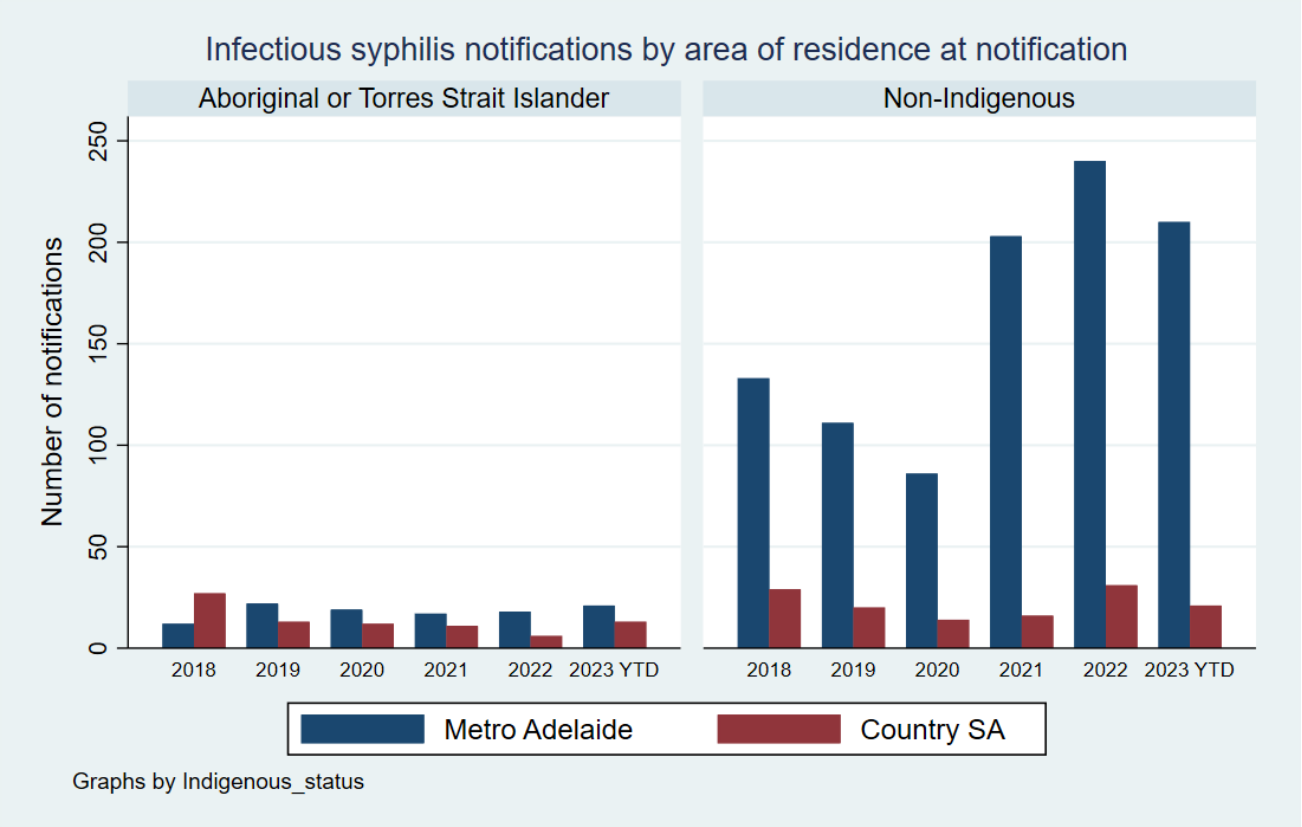
# SA Health (CDCB) data for South Australia




Government of South Australia

SA Health

# SA Health data for SA




Government of South Australia

SA Health

# Shift in notification sources presenting challenges for CDCB

**Table 1: Notifications of infectious syphilis, by diagnosing service, South Australia, 2022**

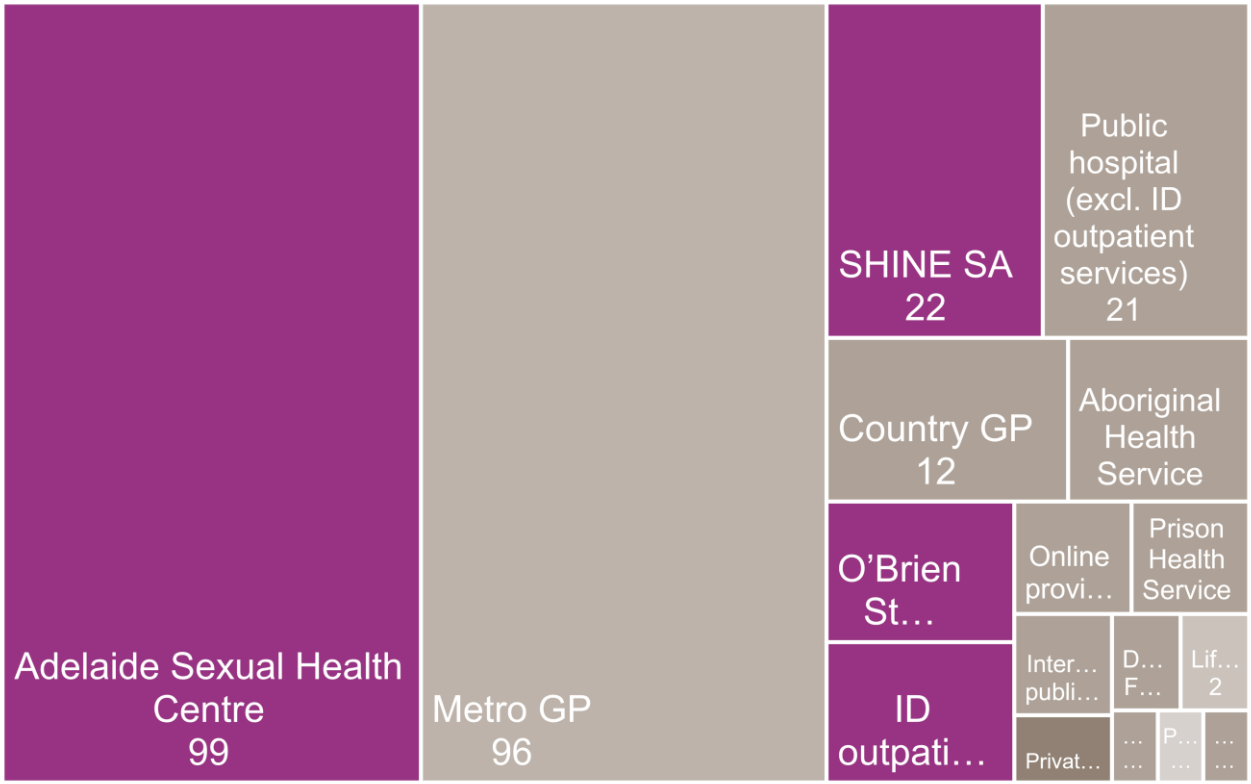
| Diagnosing service | Number of notifications |
|---|---|
| Adelaide Sexual Health Centre* | 99 |
| Metro GP | 96 |
| SHINE SA* | 22 |
| Public hospital (excl. ID outpatient services) | 21 |
| Country GP | 12 |
| Aboriginal Health Service | 9 |
| O'Brien St Practice* | 8 |
| ID outpatient services | 8 |
| Online provider | 4 |
| Prison Health Service | 4 |
| Interstate public health unit | 3 |
| Private specialist | 2 |
| Defence Force | 2 |
| Lifeblood | 2 |
| Refugee health service | 1 |
| Private Hospital | 1 |
| Yarrow Place | 1 |
| **Total** | **295** |

*specialist sexual health services

An increasing proportion of notified cases are being diagnosed outside specialist sexual health services.

# Shift in notification sources presenting challenges for CDCB

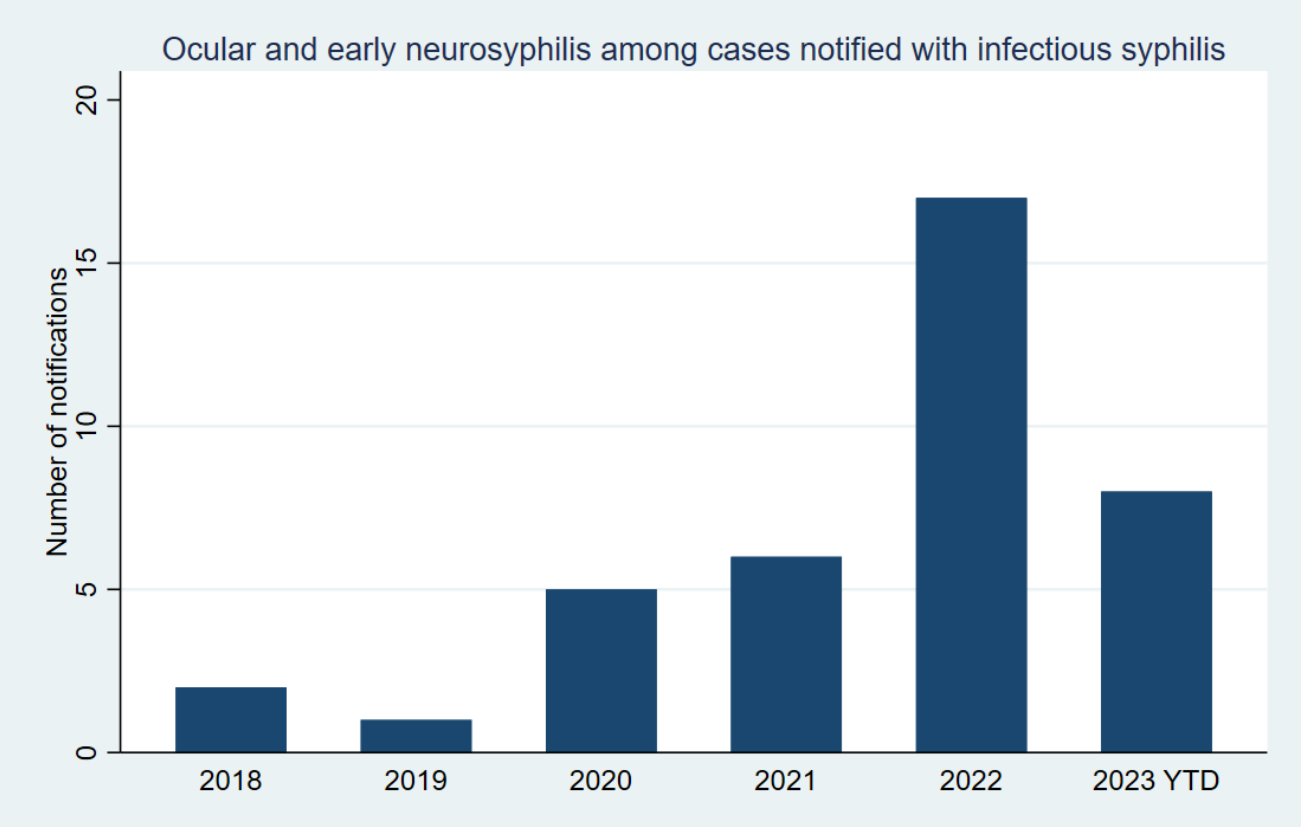
**Table 1: Notifications of infectious syphilis, by diagnosing service, South Australia, 2022**




An increasing proportion of notified cases are being diagnosed outside specialist sexual health services, often by clinicians with limited experience in the diagnosis and management of syphilis.

These cases often require support to ensure consistent linkage to care and partner notification.

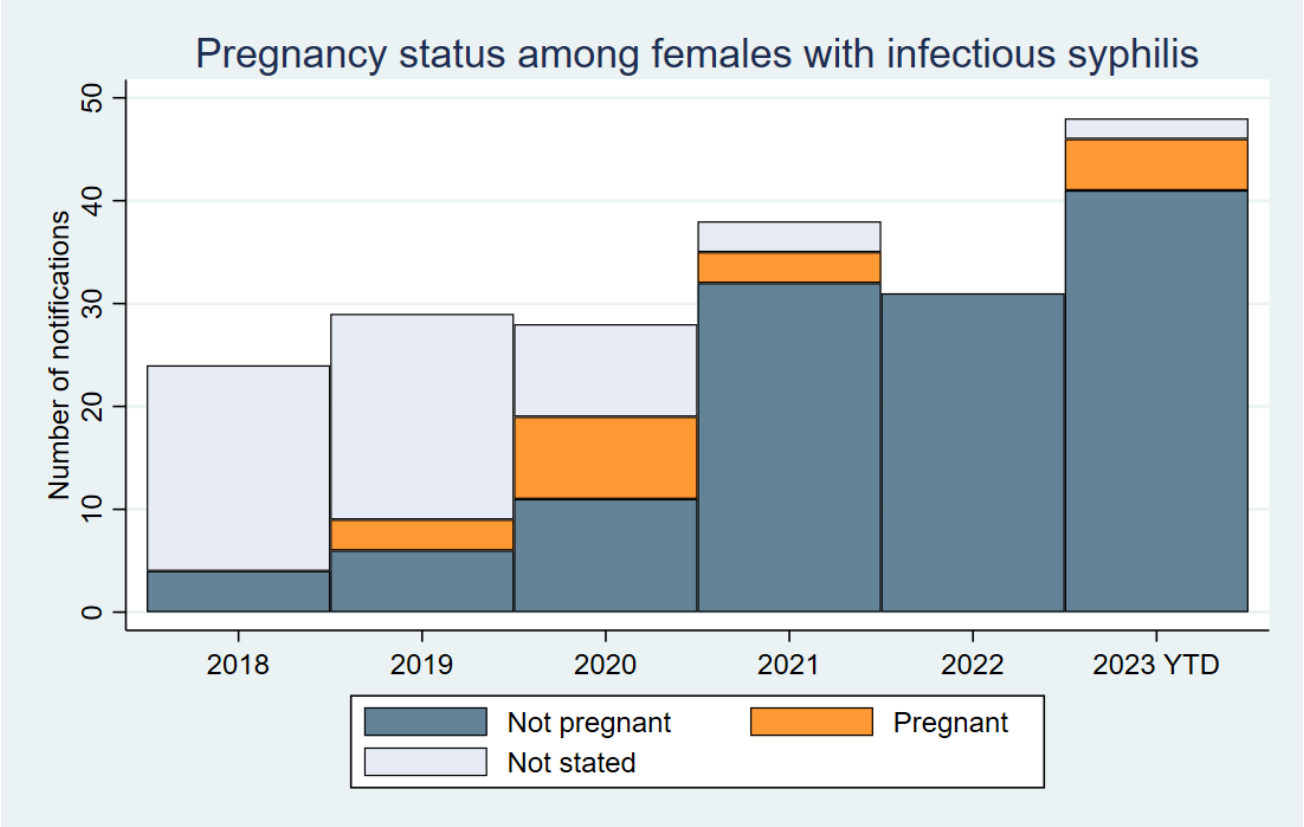
# SA Health data for SA




Government of South Australia

SA Health

# SA Health data for SA



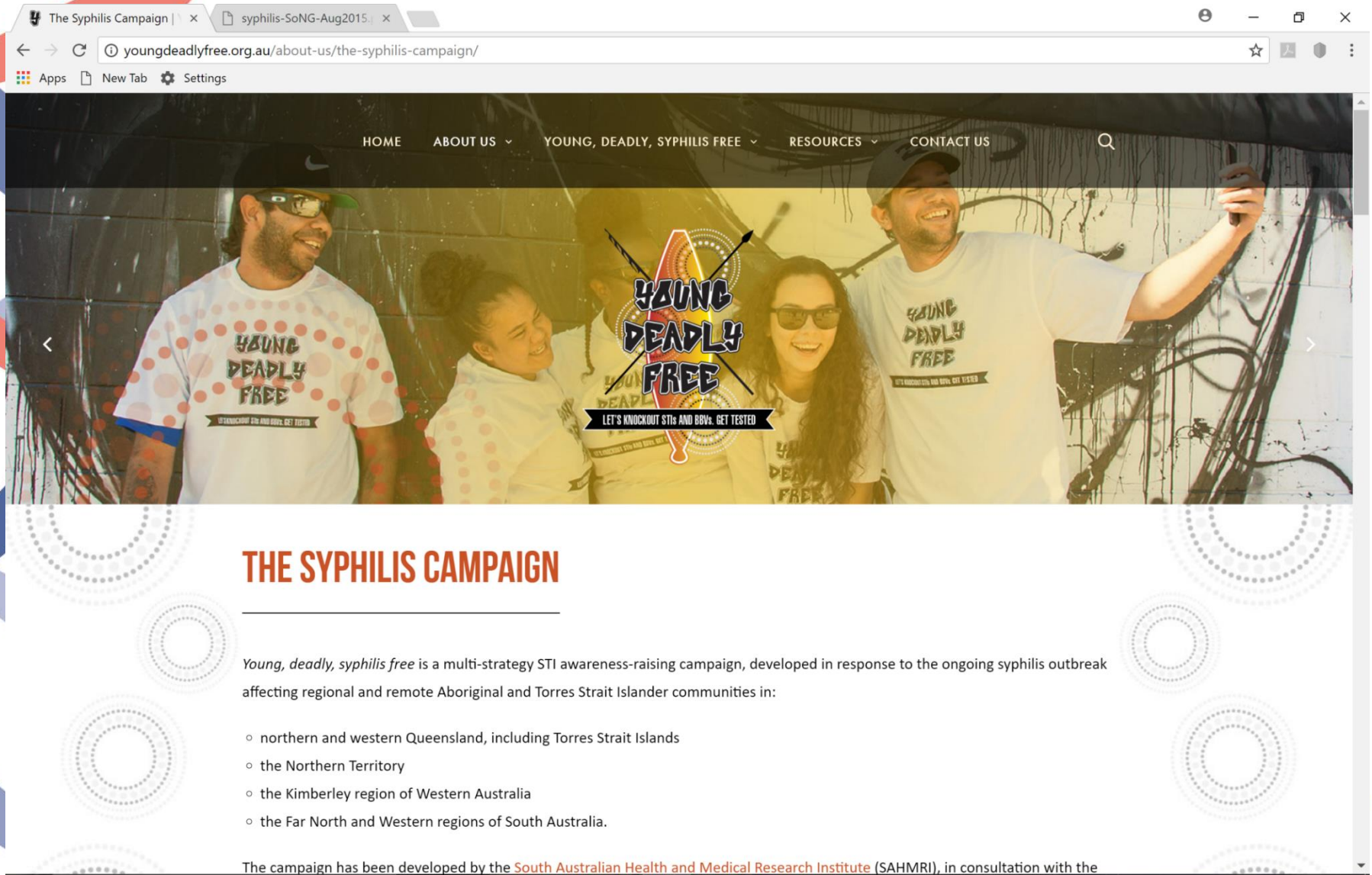

Government of South Australia

SA Health

# Congenital Syphilis

- **Congenital syphilis is rapidly escalating** – almost half of the 90 congenital syphilis notifications nationally since 2011 were reported after 2020.
- **Pregnant people who do not present for antenatal care** (or **present too late** for adequate treatment to occur) are disproportionately represented among congenital syphilis notifications.
- Among pregnant people giving birth to an infant with congenital syphilis during this period:
  - **80%** were diagnosed late in pregnancy.
  - **Over half** were diagnosed on the day of delivery or post birth.
  - **Other factors** in SA and nationally include: **homelessness**, **mental health conditions**, **drug use**, **history of incarceration**, **removal of children**, and **other complex social determinants**.
  - Around half of cases nationally (and all 3 in SA) were among **Aboriginal and/or Torres Strait Islander people**.
- **Improving antenatal care access is vital.**

# Young Deadly Free Resources



# Case – syphilis exposure in pregnancy

- Angie, 21 yo asymptomatic Aboriginal woman whose regular male partner has recently travelled to Alice Springs, and remote Northern SA.
- Angie  has reactive syphilis serology at booking visit, at 12 weeks pregnancy
- Angie feels well herself and has not noticed any genital ulcers or rash on her skin, but she reports her partner had a painless, non-itchy, rash in the last month.

Government of South Australia

SA Health

# Current SA recommendations for syphilis screening in pregnancy for indigenous women

South Australian Perinatal Practice Guidelines (next review date 2027)

- Screen pregnant indigenous women for syphilis 5 times, at
  - first visit (10-12 weeks)
  - 28 weeks
  - 36 weeks
  - at delivery
  - at the six week post-natal check

Government of South Australia

SA Health

# SA Health Perinatal Practice Guidelines: Syphilis in Pregnancy – All pregnancies

In South Australia, routine screening for syphilis (treponemal specific enzyme immunoassay) is offered to all pregnant women at their first antenatal appointment as part of routine antenatal screening blood tests, as per the Antenatal Care PPG

www.sahealth.sa.gov.au/perinatal

## Additional boxed advice:

Due to the change in syphilis epidemiology in SA, the CDCB recommends that increased testing for syphilis is offered at

- the booking visit
- 28 weeks and
- 36 weeks

in all pregnancies

"SA health is exploring the cost versus benefit and universal increased screening is not yet approved. Currently, we recommend a low threshold for requesting the additional testing. These recommendations may be updated"

Government of South Australia

SA Health

# SA Health Perinatal Practice Guidelines: Syphilis in Pregnancy – Increased risk pregnancies

People at increased risk of STIs (including syphilis) in pregnancy

This includes sexually active persons:

- Who identify as Aboriginal and/or Torres Strait Islander origin and who reside in, or have travelled from/through an area of increased prevalence
- Whose partners identify as Aboriginal and/or Torres Strait Islander origin and who reside in, or have travelled from/through an area of increased prevalence
- With a history of STI (current pregnancy or previous 12 months)
- Who have had sex with men who have sex with men and women
- Who have engaged in sex work
- With overseas sexual contacts, especially from countries with high prevalence of STI(s)
- With alcohol or substance use, particularly methamphetamine (ice) and/or other injecting drug use
- Who are adolescents
- Who are transgender, non-binary or gender diverse
- With late or no antenatal care
- With new sexual partner/s since they became pregnant

- Consider offering a full STI screen including syphilis serology, chlamydia, gonorrhoea and HIV

- This group should be offered an additional syphilis screening at a minimum at:
  - 28 weeks
  - 36 weeks

Government of South Australia

SA Health

# Summary: SA Syphilis in pregnancy screening recommendations

- All pregnancies:
  - once at initial booking visit
  - three times in pregnancy if affordable/manageable
- People at increased risk of STIs:
  - Three times in pregnancy
- Indigenous people:
  - 5 times in pregnancy and neonatal period

Government of South Australia

SA Health

# Resources

- South Australian Perinatal Practice Guidelines
- ASHM
  - Decision making in syphilis Interactive Tool
  - https://ashm.org.au/resources/syphilis-decision-making-tool/

# Studies of natural history of syphilis

Natural history of syphilis is known because of unethical studies including the “Tuskegee study” performed on African American subjects who were not told they were in a study and from whom penicillin was withheld.

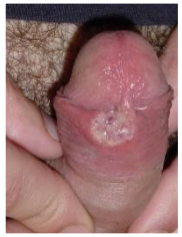
I acknowledge the injustices done to the participants in these studies.

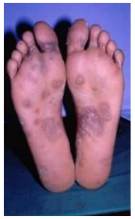
# Stages of syphilis

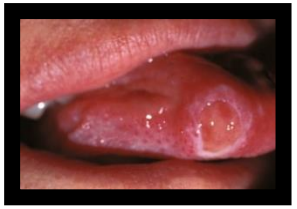
- Primary
- Secondary
- Latent – early, late
- Tertiary

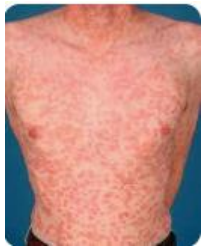
# Syphilis – clinical stages

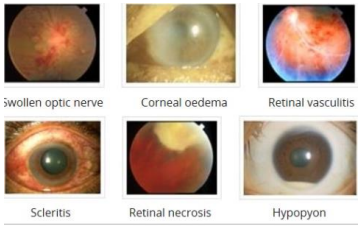
- **Primary syphilis**
  - chancre
  - incubation period 9 - 90 days
- **Secondary syphilis**
  - 50% asymptomatic
  - Rash involving palms and soles
  - Oral and genital mucosal lesions, lymphadenopathy, hepatitis, rarely systemic manifestations such as neuro- or ocular syphilis, 8$^{th}$ nerve involvement – deafness or tinnitus, nephrotic syndrome, osteitis, etc
  - Presents 2 to 3 months after primary syphilis appears
- **Latent syphilis**
  - Early latent (<2 yrs since acquisition)
  - Late latent (>2 yrs since acquisition)
  - Asymptomatic
- **Tertiary syphilis**
  - 10-30yrs later
  - cardiovascular
  - neurological or ocular
  - gummatous syphilis
- **Clinical manifestations of syphilis are not altered in pregnancy**

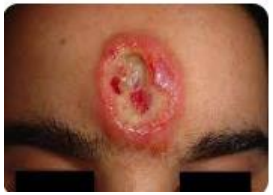


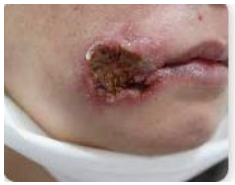


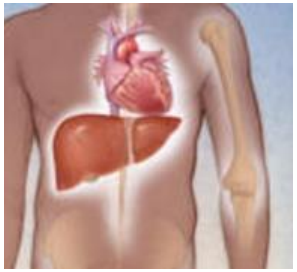










**Contact with *Treponema pallidum***
($ID_{50}$ = 57 organisms)

9–90 days

**Primary disease**
(genital, perianal or extra-genital chancre)

4–10 weeks

**Secondary disease**
(rash, neurological/eye, condylomata, alopecia, hepatitis)

3–12 weeks

**Latent disease**
(early within two years and late thereafter)

**Tertiary disease**
(neurological, cardiovascular and gummatous disease)

Infectious syphilis (syphilis <2 years duration)

Non-infectious syphilis (syphilis >2 years duration)

# Syphilis is curable

- Cured by penicillin at any stage
- Existing damage is not reversible
- Goals of treatment are to prevent:
  - Further tissue destruction
  - Congenital syphilis
  - Tertiary syphilis
  - Onward sexual transmission

# Treatment regimen is determined by stage of syphilis

- Infectious syphilis (primary, secondary, early latent) (<2yrs duration)
  - **Single dose** 1.8gm (2.4 million units) benzathine penicillin
  - **Two doses** 1.8gm (2.4 million units) benzathine penicillin one week apart if diagnosed in third trimester of pregnancy
- Late latent syphilis
  - **Three weekly doses** 1.8gm (2.4 Million Units) benzathine penicillin
- Tertiary syphilis (refer to specialist)
  - **10-14 days** iv benzyl penicillin 4 hourly or
  - **10 days** daily procaine penicillin imi plus probenicid QID orally
- Congenital syphilis – seek paediatric involvement

# Infectious period

- Syphilis is infectious through mucous membrane or skin to skin contact with lesions (vaginal, oral or anal sex) for the first 2 years after infection
- “Infectious syphilis” includes:
  - primary
  - secondary and
  - early latent stages
- If a woman acquires syphilis just before or during pregnancy, the baby is at very high risk of being infected
- Mother to child transmission across the placenta is possible for many years (at least 8 years) after the mother acquires syphilis
- Mother to child transmission is less frequent and less severe the longer the mother has been infected

Government of South Australia

SA Health

# Outcomes of untreated syphilis in pregnancy

- Mid-trimester spontaneous miscarriage – most common outcome of syphilis in pregnancy
- Preterm birth
- Death in utero and stillbirth
- Neonatal death
- Congenital syphilis

# Outcomes of syphilis in pregnancy by maternal stage of syphilis

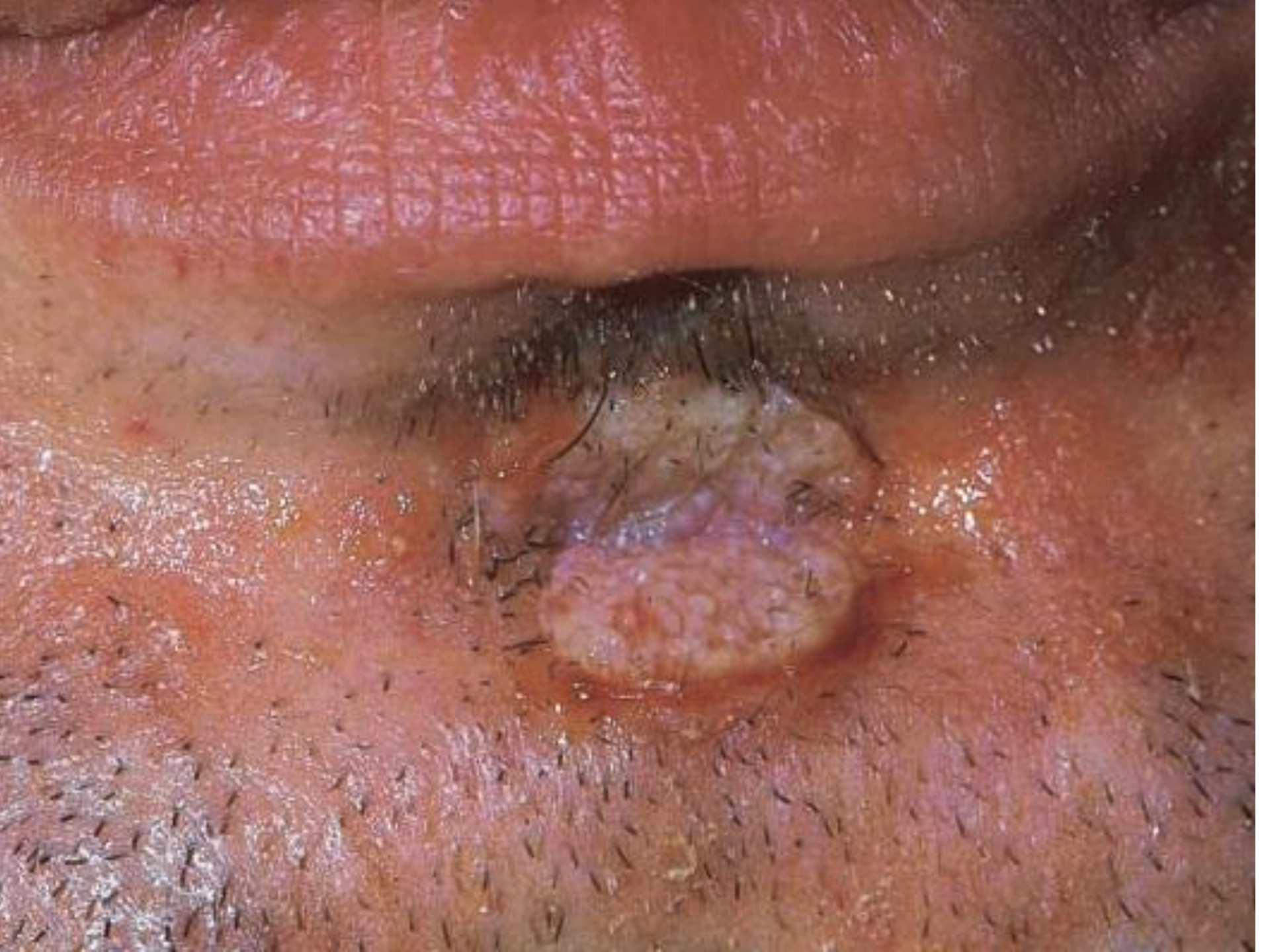
- Primary or secondary syphilis in pregnancy
  - Virtually 100% foetuses will be affected
  - 50% preterm delivery or perinatal death
- Early latent syphilis in pregnancy
  - 40% prematurity or perinatal death
- Late latent syphilis in pregnancy
  - 10% rate of congenital infection
  - perinatal death increased approximately 10 fold

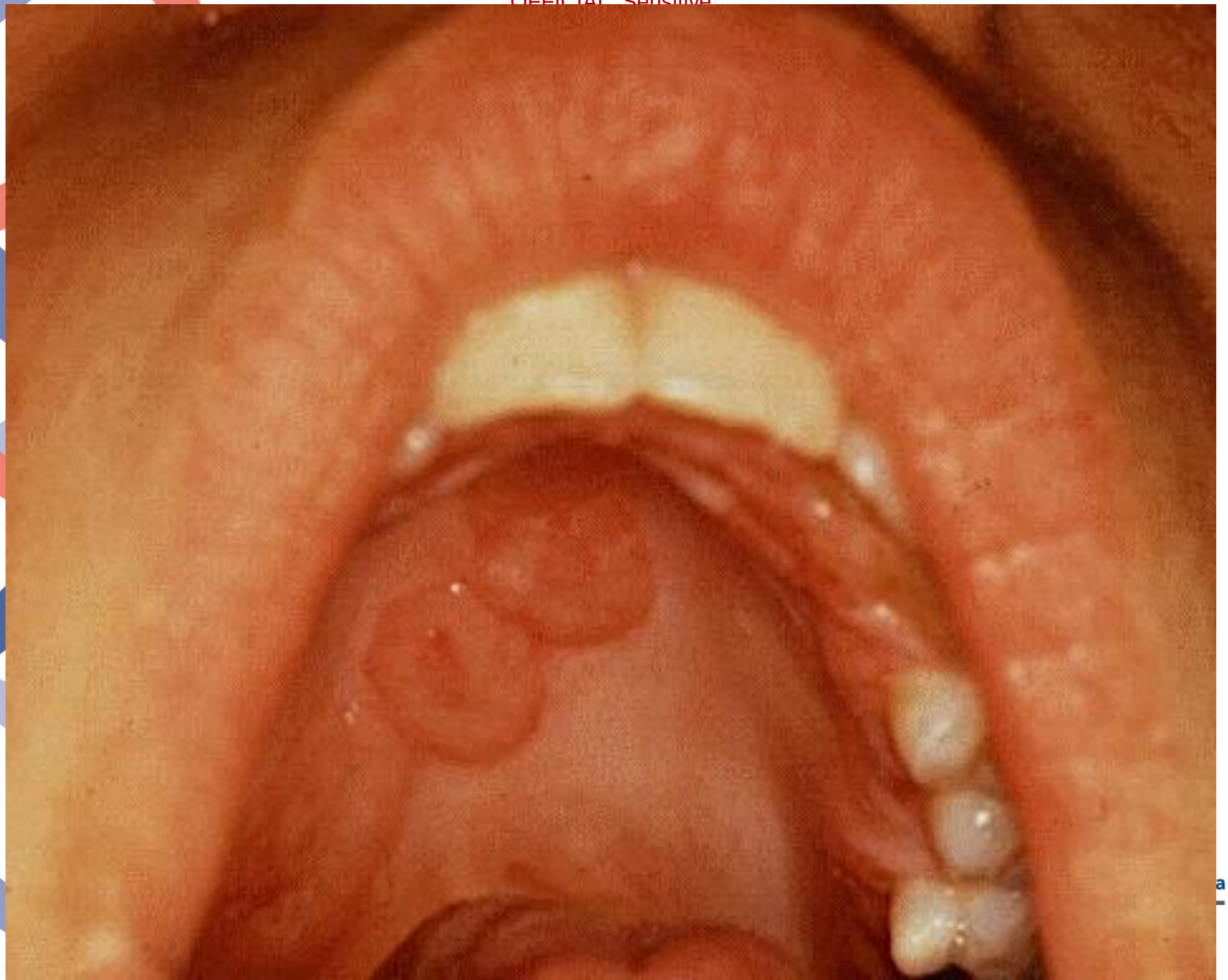
# Primary Syphilis

Warning: the following slides contain photos of genitalia and pathology

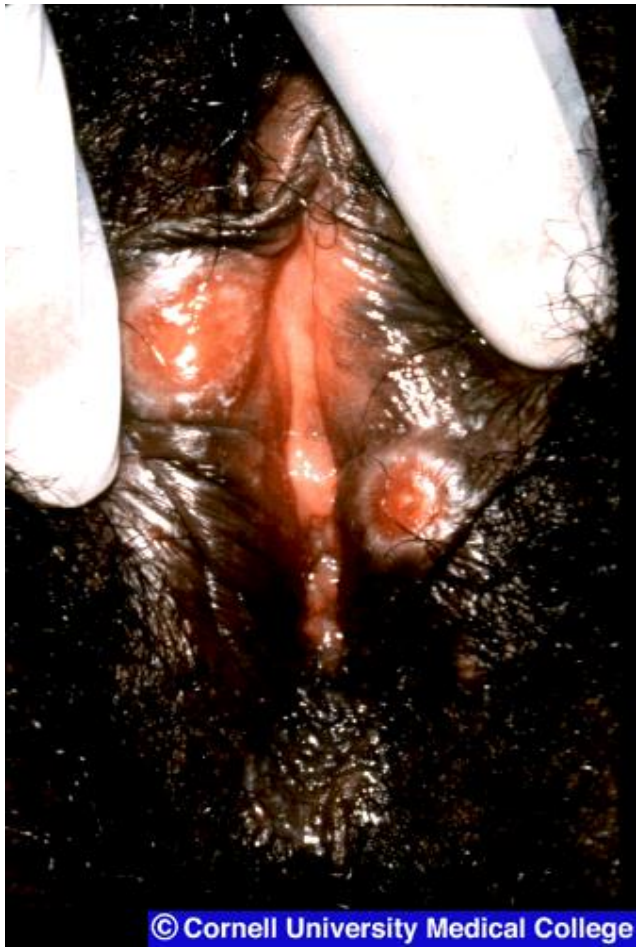
Government of South Australia

SA Health

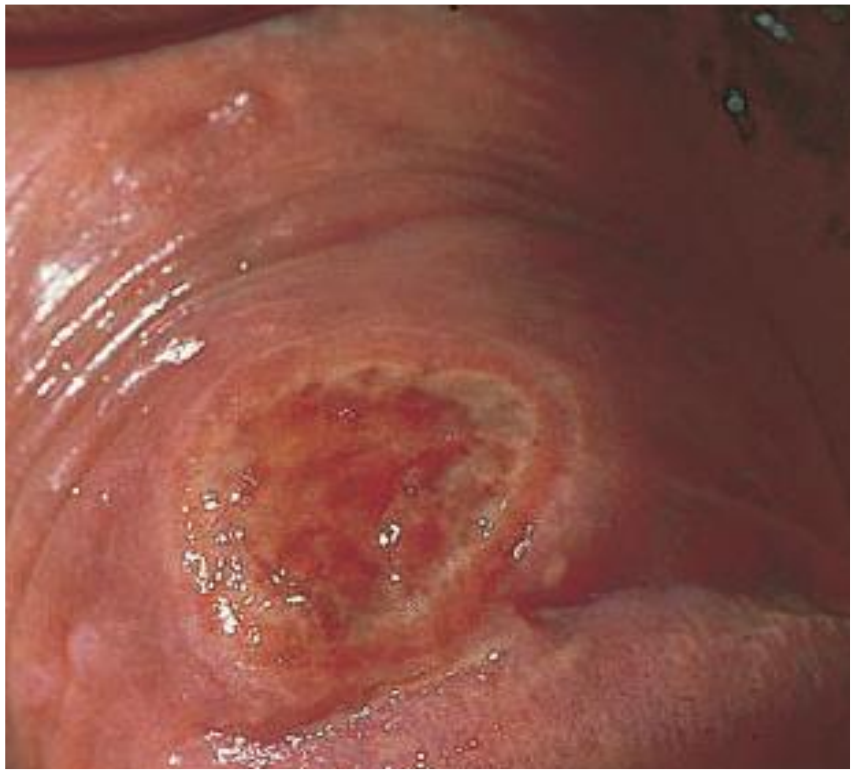


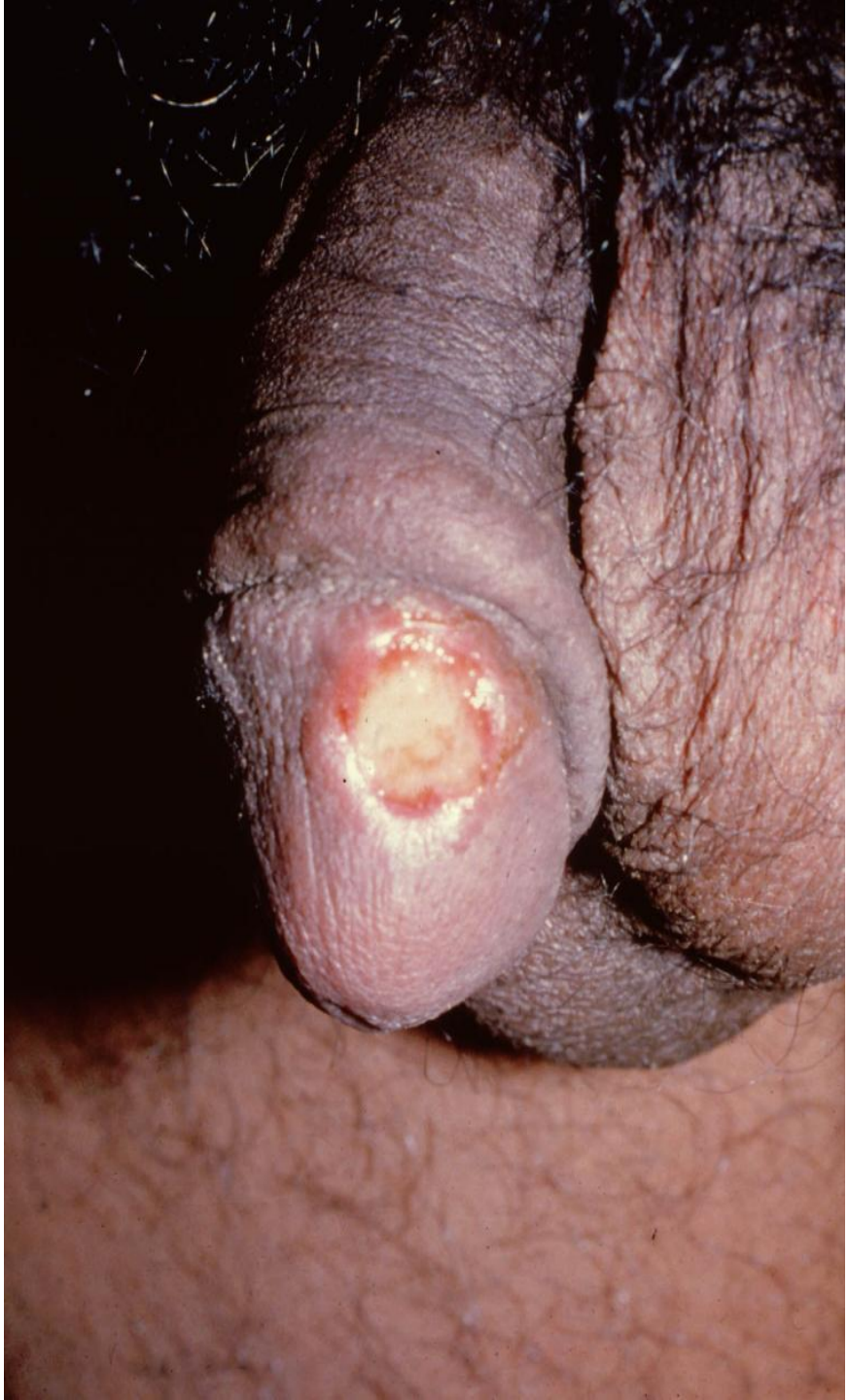


- Next slide is of chancres on female genitalia


© Cornell University Medical College

- Next two slides are of chancres on male genitalia





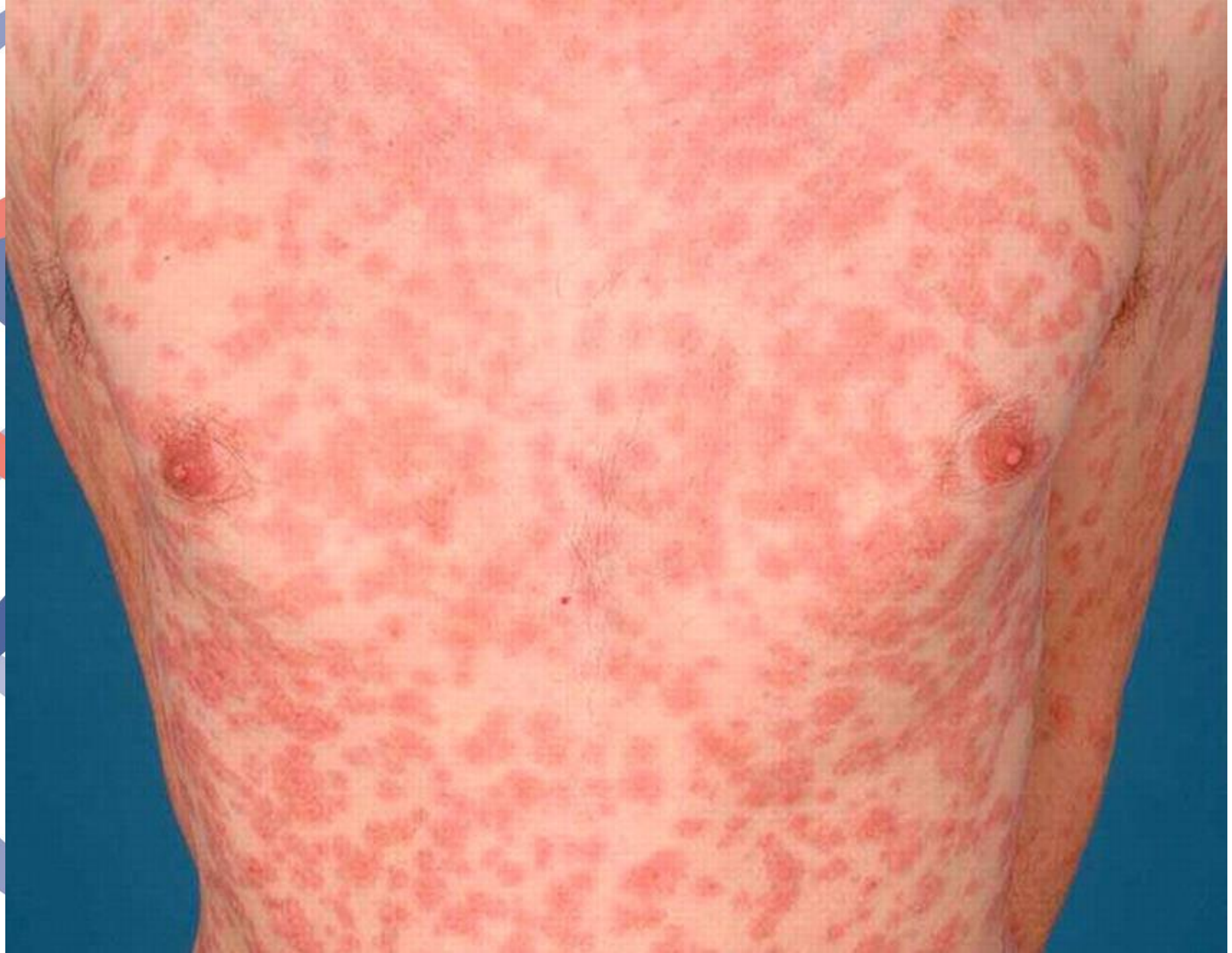
Government of South Australia

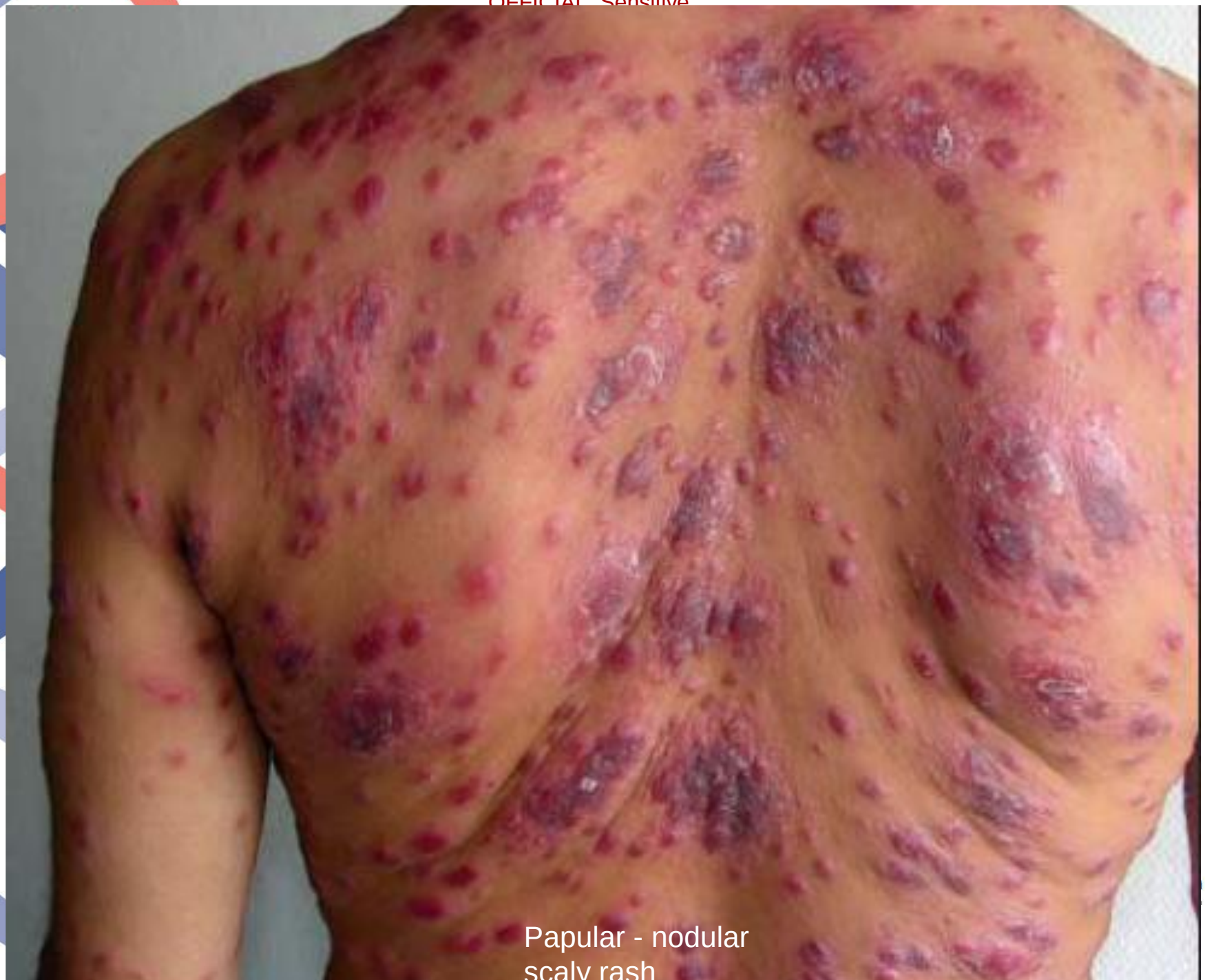
SA Health

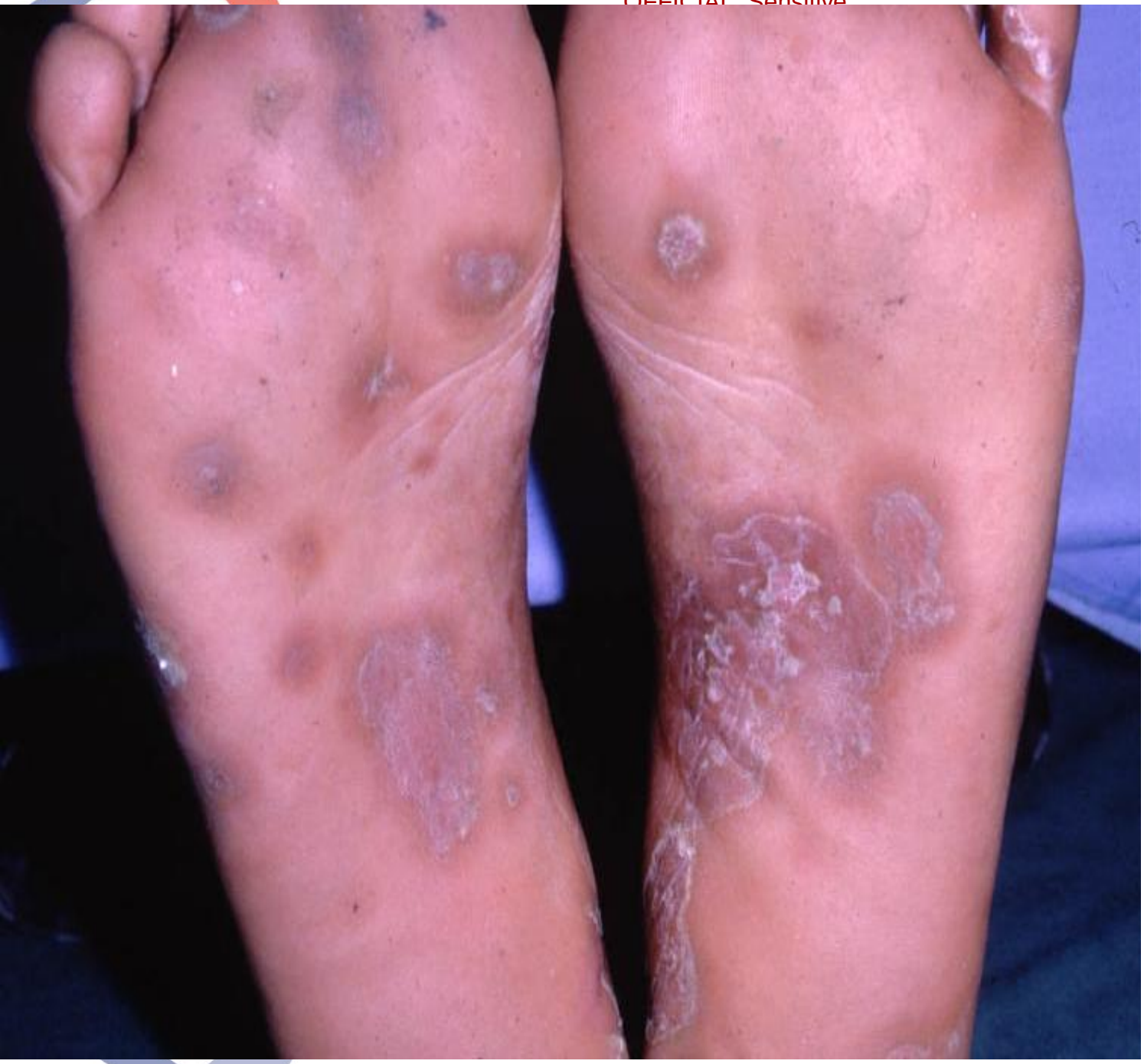
# Secondary Syphilis

Government of South Australia

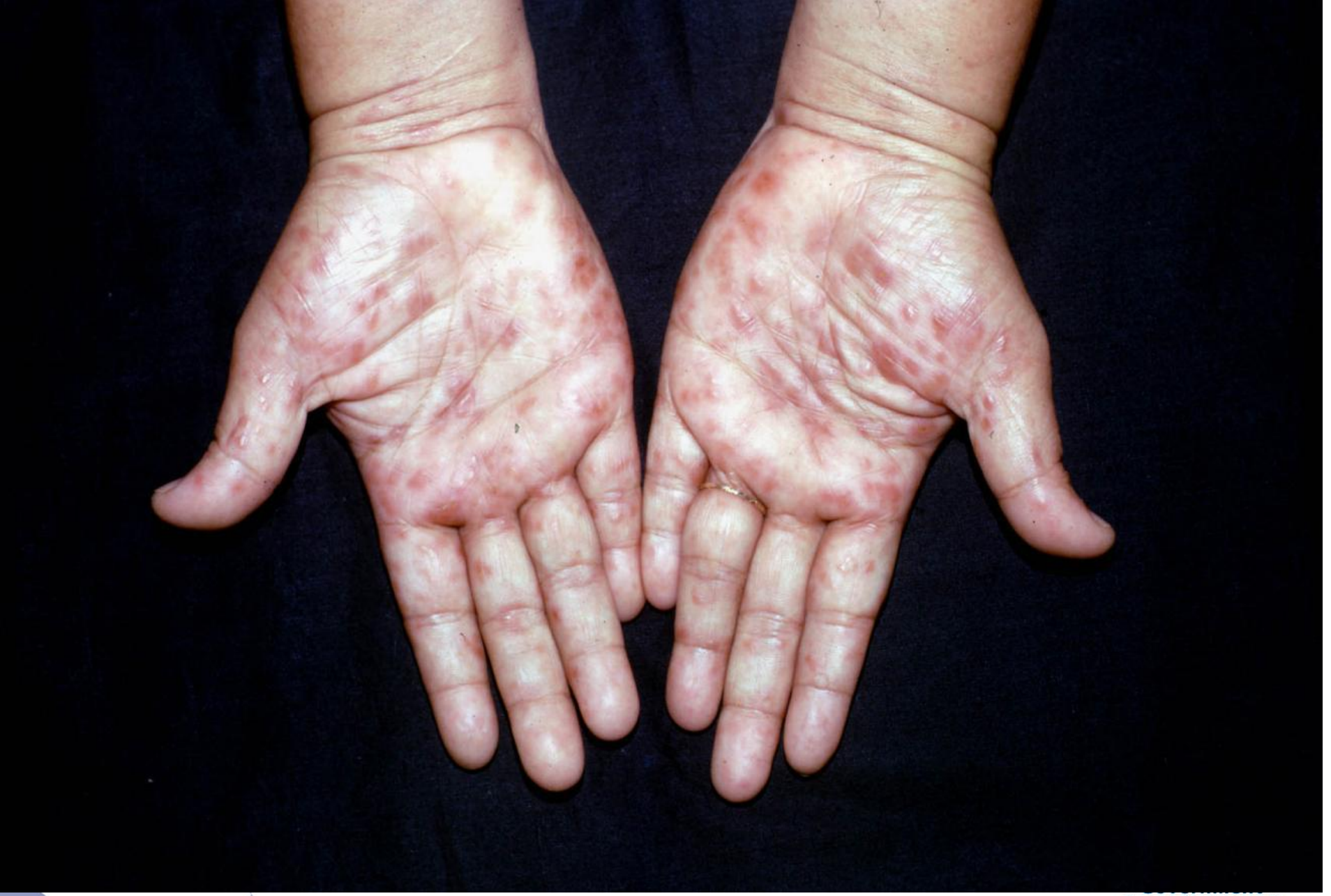
SA Health



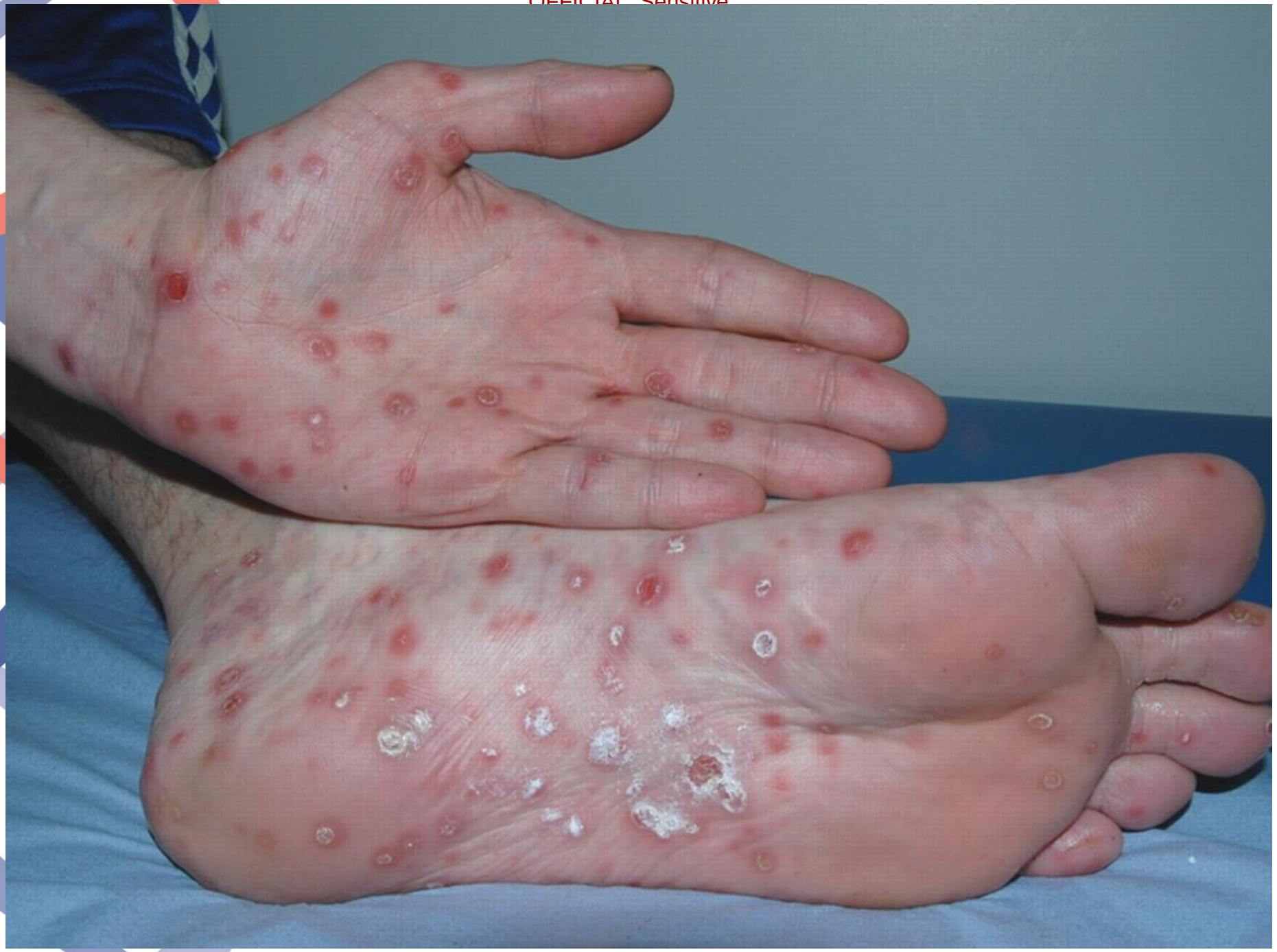

Papular - nodular
scaly rash

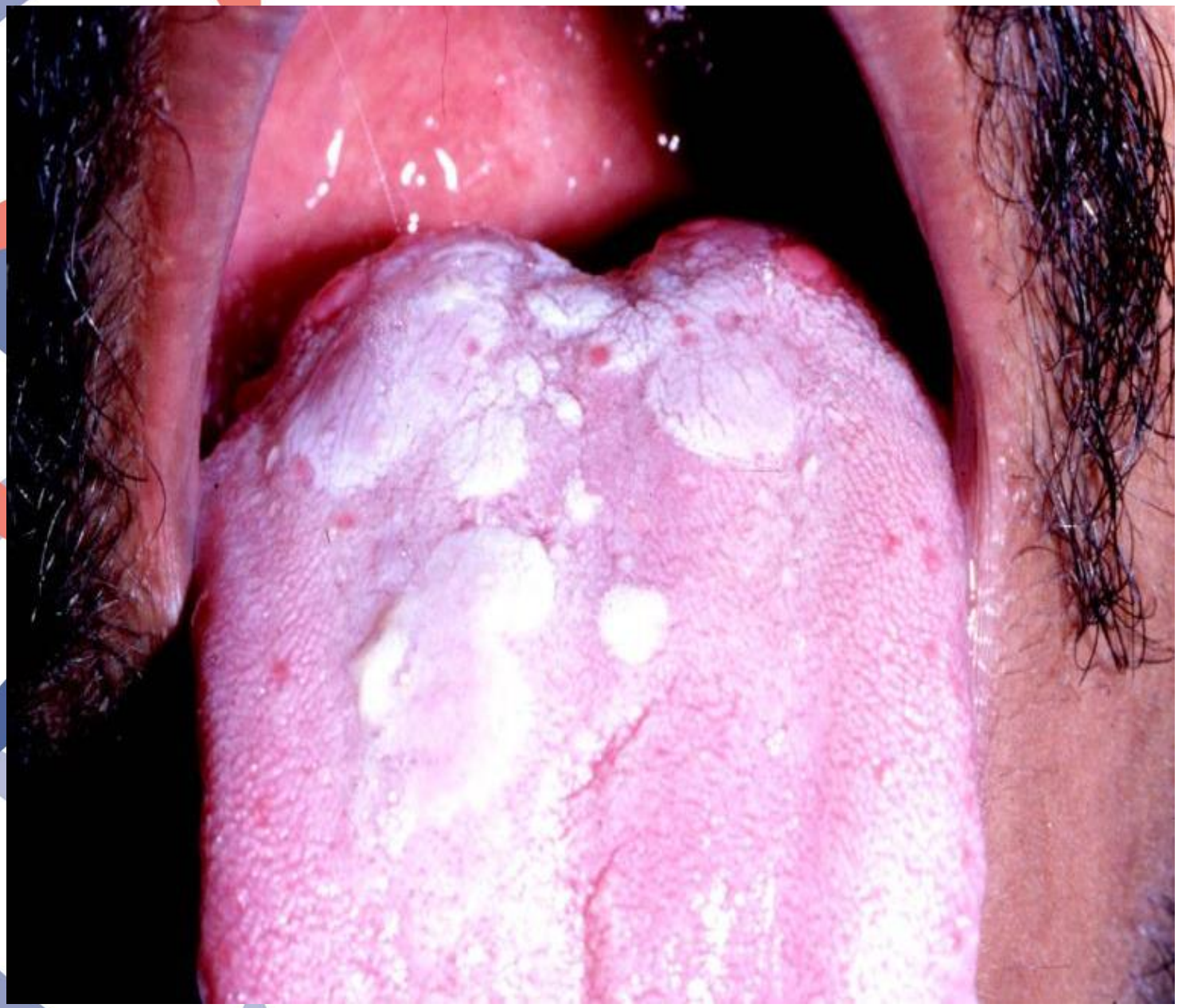


Rash on soles in secondary syphilis



# Rash on palms in secondary syphilis



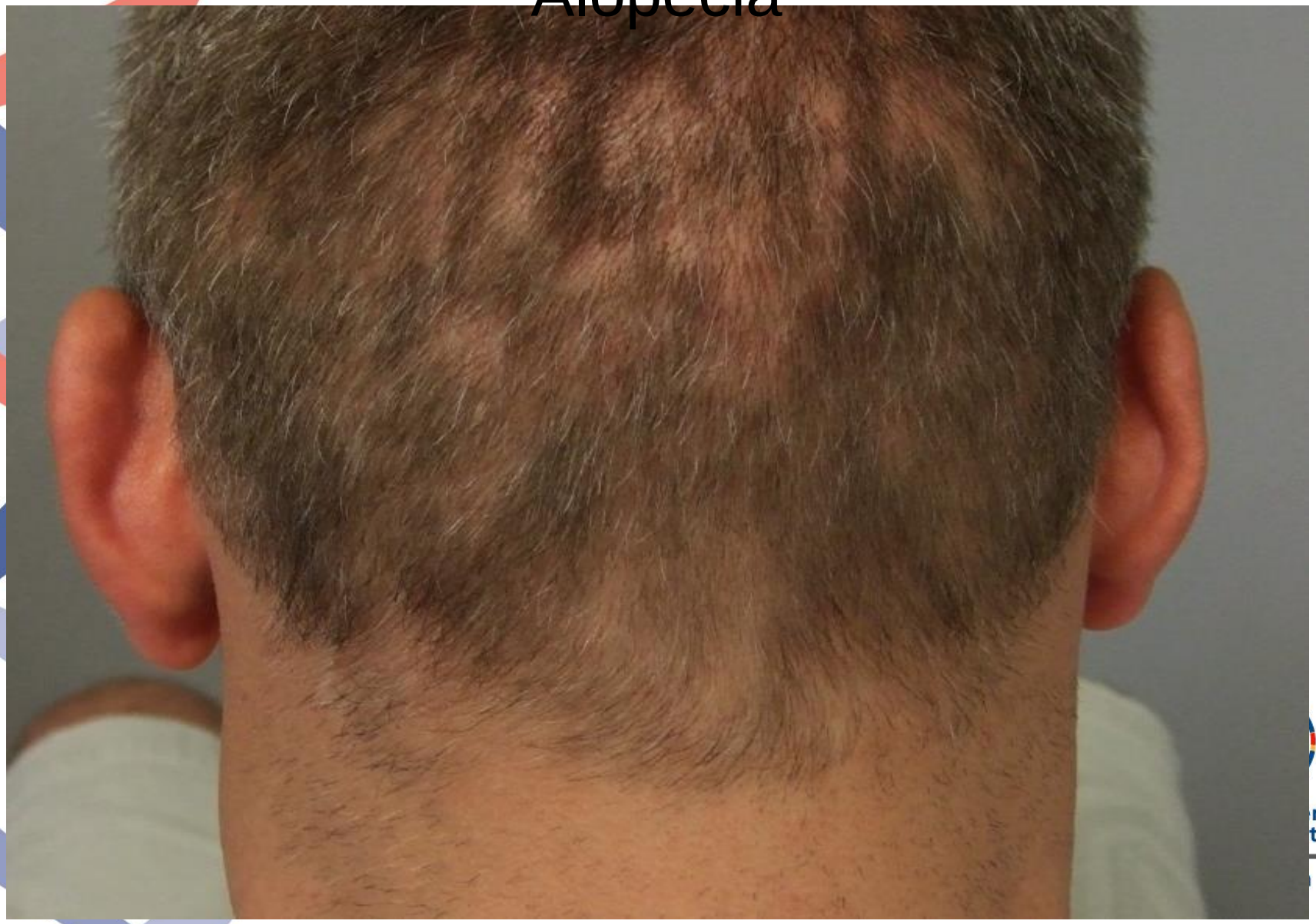


Mucous patches in secondary syphilis

# Secondary Syphilis
# Moth-Eaten Alopecia (Hair Loss)

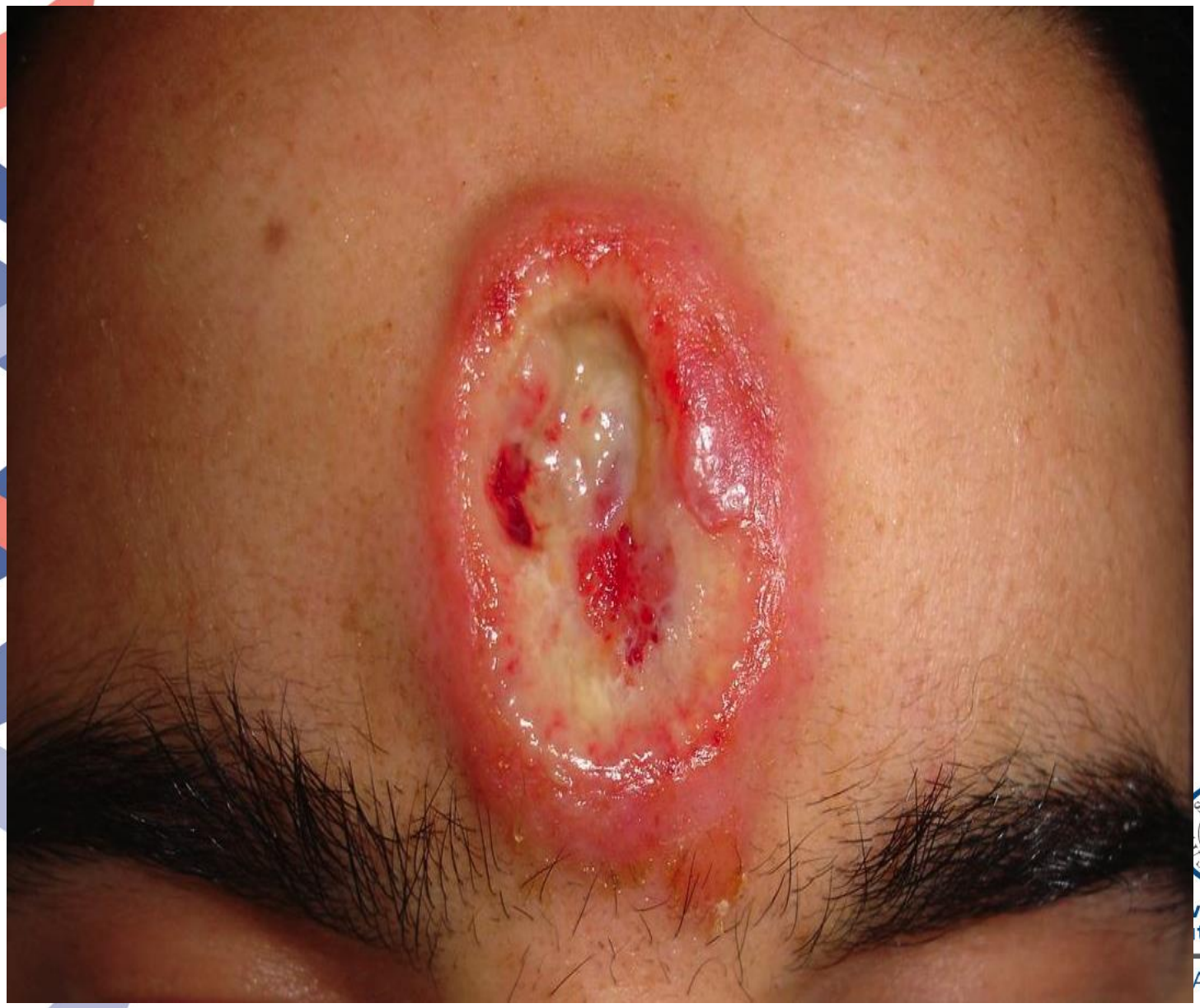

Copyright © Lasion Europe

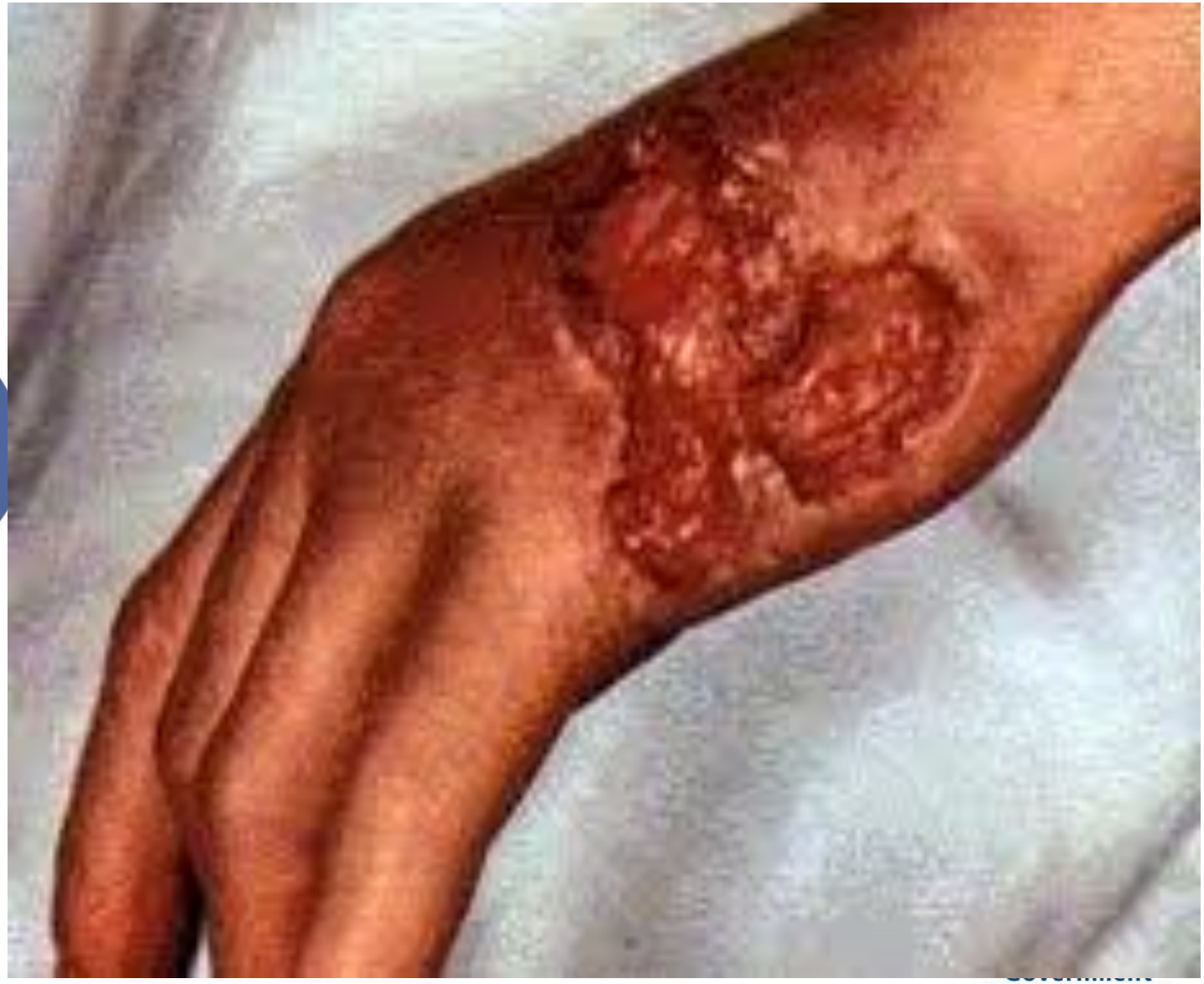
# Patchy, non scarring Alopecia



# Gumma of tertiary syphilis

# Syphilitic gumma





# Congenital syphilis

- Two categories
  - Early
    - identified within first 2 years of life
    - somewhat analogous to secondary syphilis
  - Late
    - recognised after 2 yo
- Some newborns with congenital syphilis (who survive to birth) have no signs of syphilis at birth

# Early Congenital syphilis

Early signs and symptoms

- Usually occur within 3-7 weeks of birth
- Hepatosplenomegaly, hepatitis, jaundice, skin lesions and mouth lesions, rhinitis (blood stained “snuffles”), rhagades, inflammation of long bones,(osteochondritis, perichondritis), lymphadenopathy, anaemia, thrombocytopenia
- Low birth weight
- Failure to thrive
- Necrotising funisitis – inflammation of umbilical cord, spiral stripes – red and blue discolouration (“barber’s pole”)

# Late Congenital syphilis

Late signs and symptoms

“Stigmata of congenital syphilis”

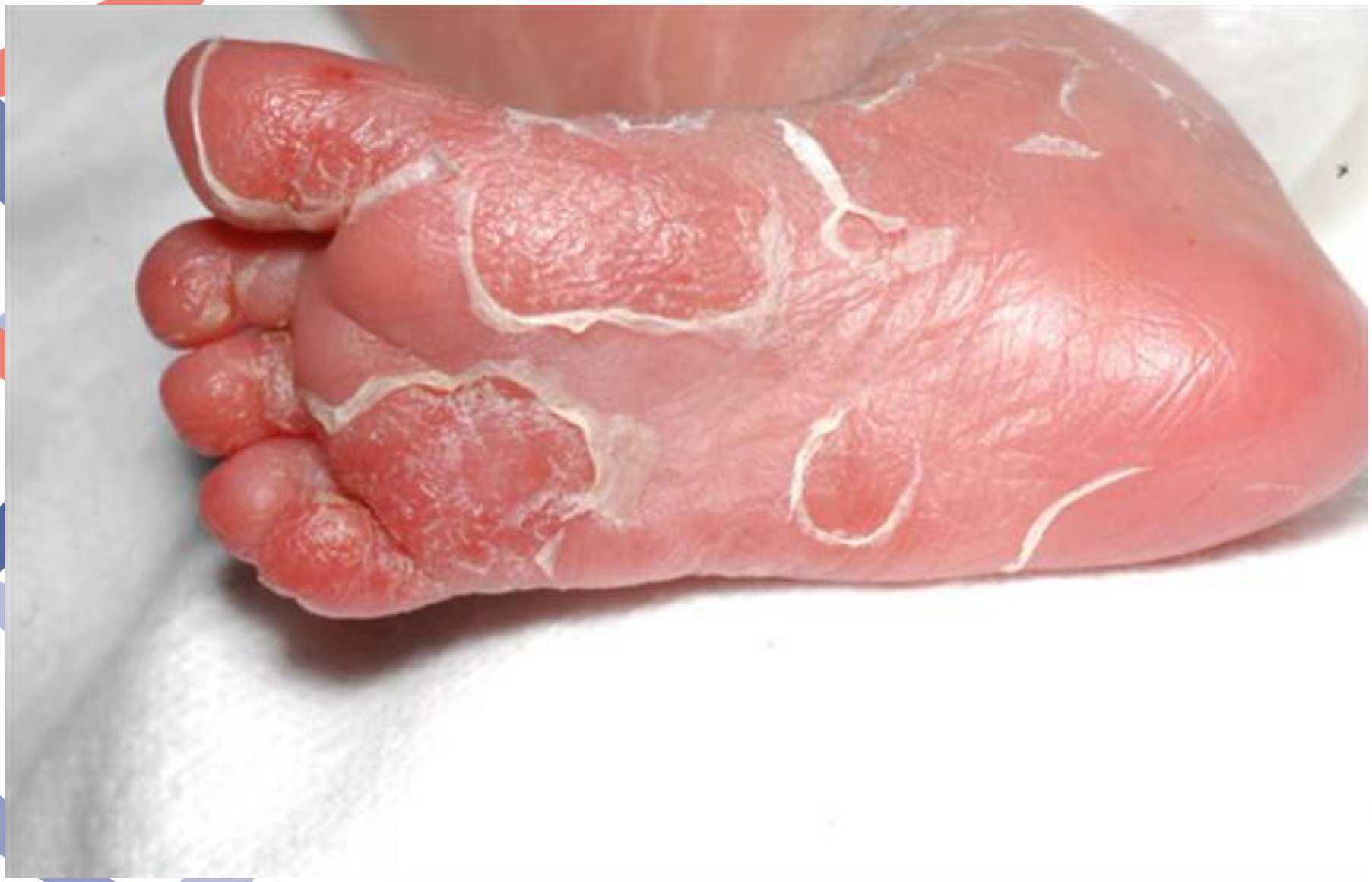
- Teeth abnormalities
  - short, notched incisors
  - Poorly developed first lower molars with multiple cusps (Mulberry molars)
- Interstitial keratitis (5-20yrs of age)
- 8th nerve deafness
- Saddle nose and protuberant mandible
- CNS involvement
  - Developmental impairment
  - Optic nerve atrophy
  - Seizures
- Bone or joint involvement:
  - Frontal bossing of the skull, sabre shins, hypertrophy of the sternoclavicular joints

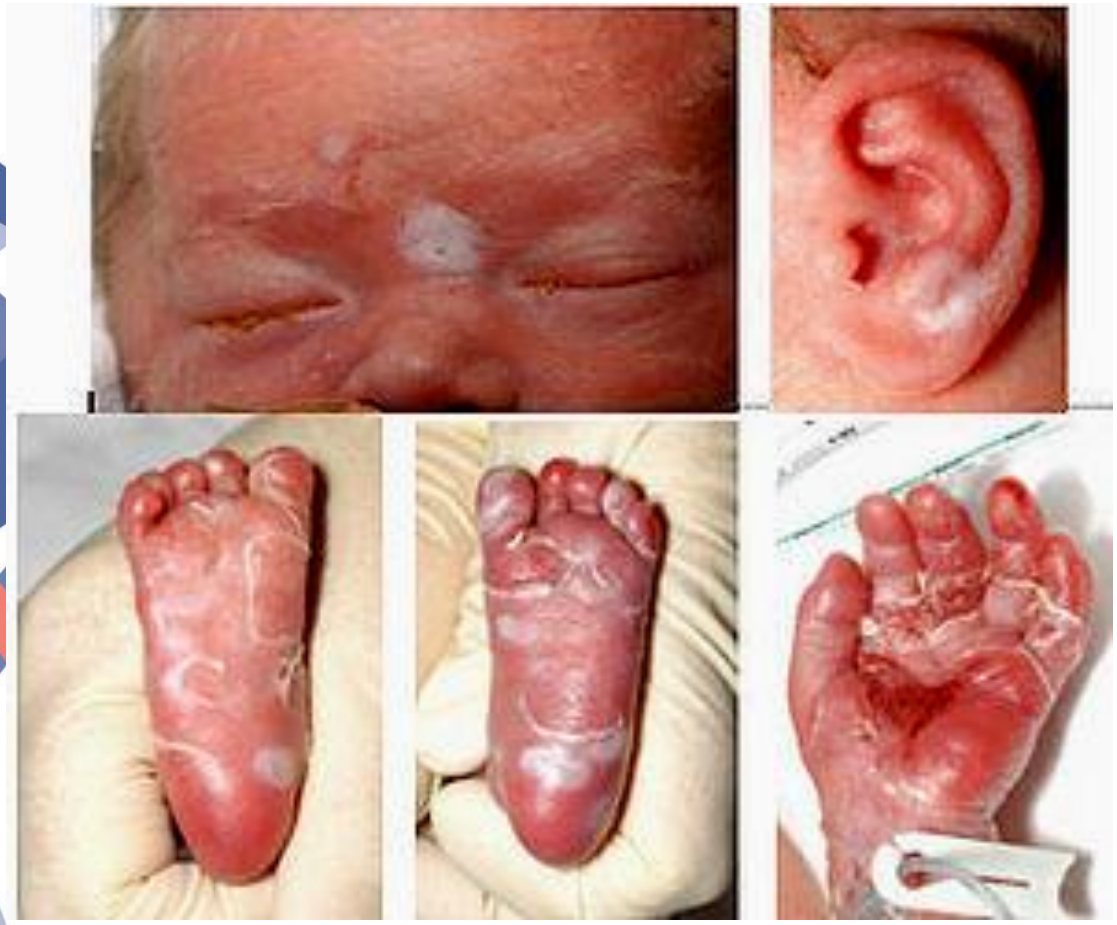
# Congenital Syphilis
## (acquired at birth)

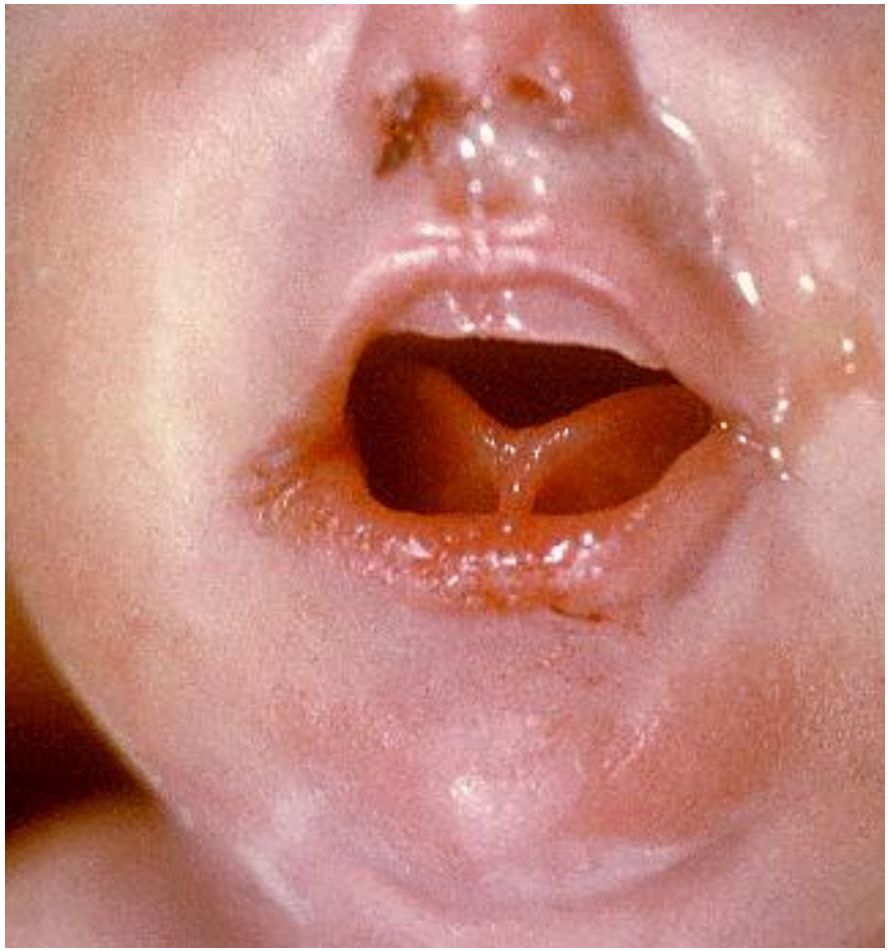
**Warning: photos of affected babies**

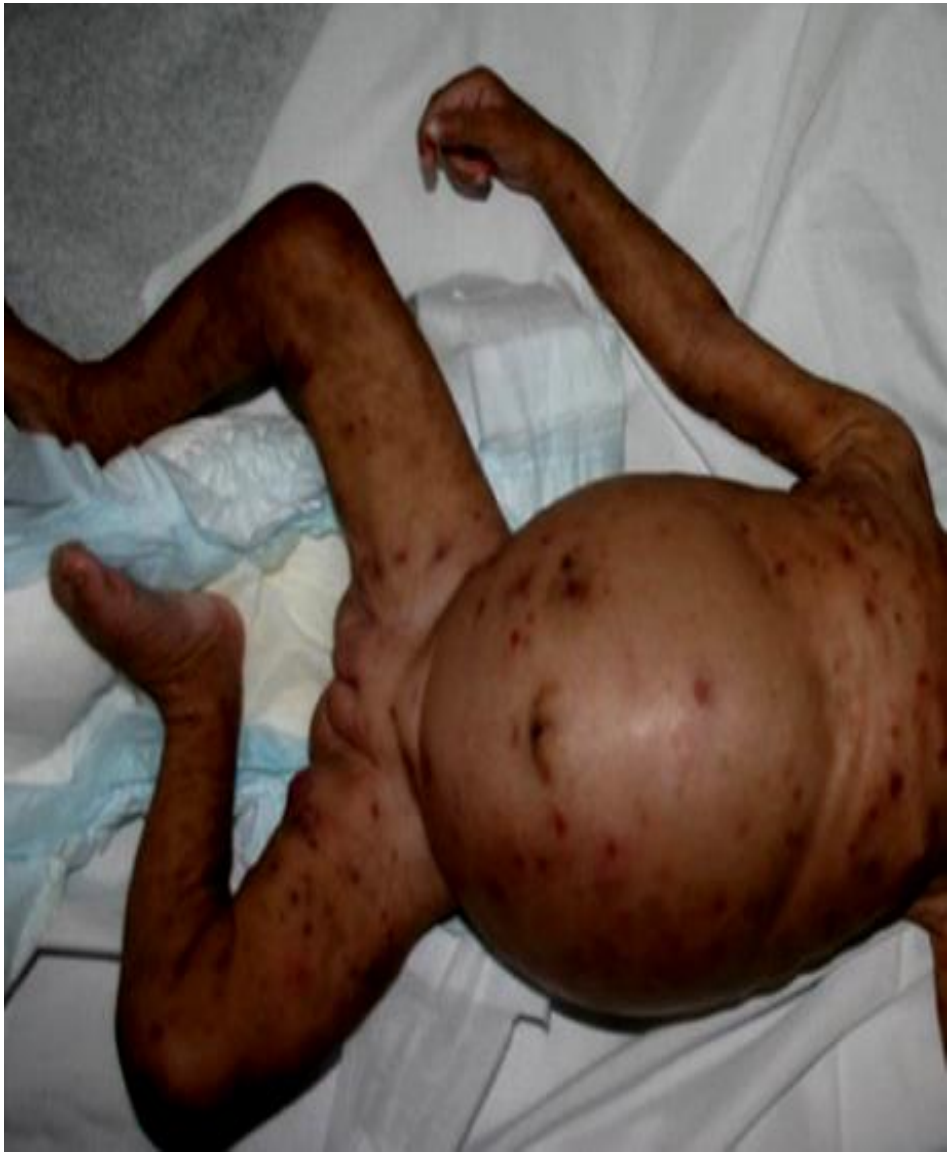
Government of South Australia

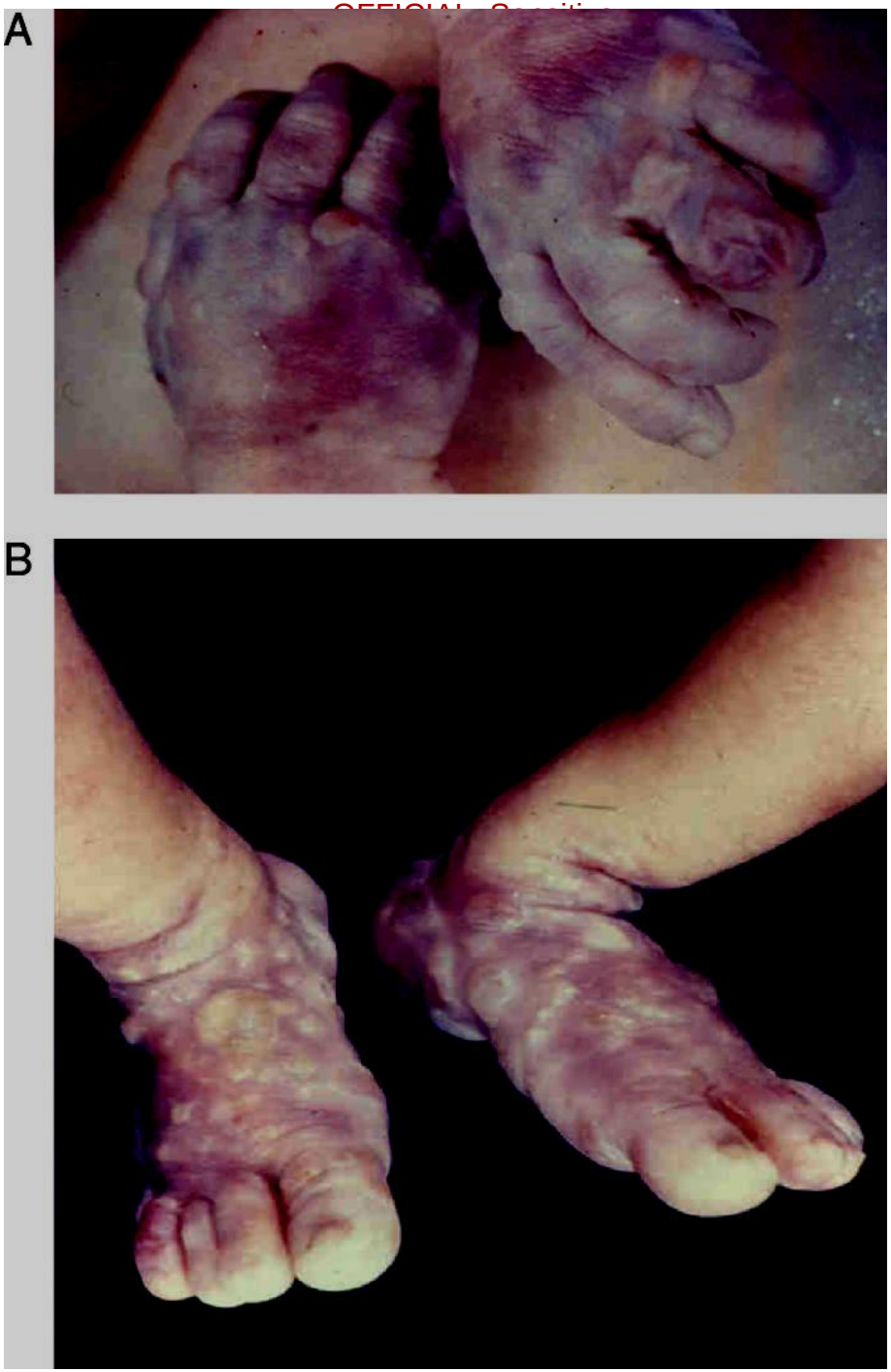
SA Health





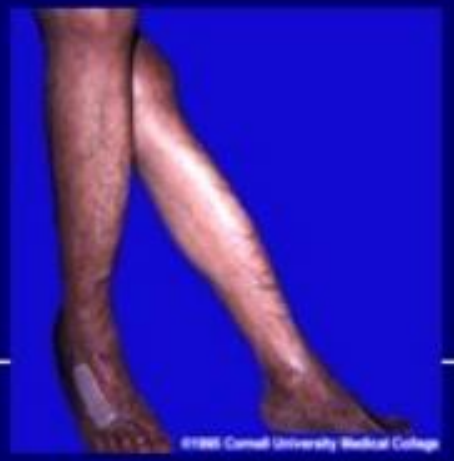






# Stigmata of congenital syphilis

- Dental abnormalities:
  Hutchinson's teeth Moore's molar
  - Frontal and parietal bossing.
  - Saber tibia.
  - Saddle nose
  - Rhagades: furrowing and linear scarring around the angle of the mouth.
  - Corneal opacity due to interstitial keratitis.
  - 8th cranial nerve palsy.
  - Positive serological test of syphilis.



# Hutchinson teeth

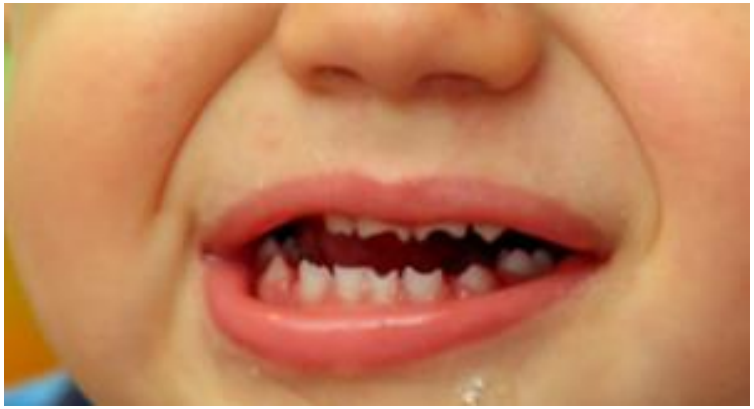


Photo: ASHM Syphilis Outbreak Training
https://syphilisoutbreaktraining.com.au/clinical-stages/

# Mulberry molars

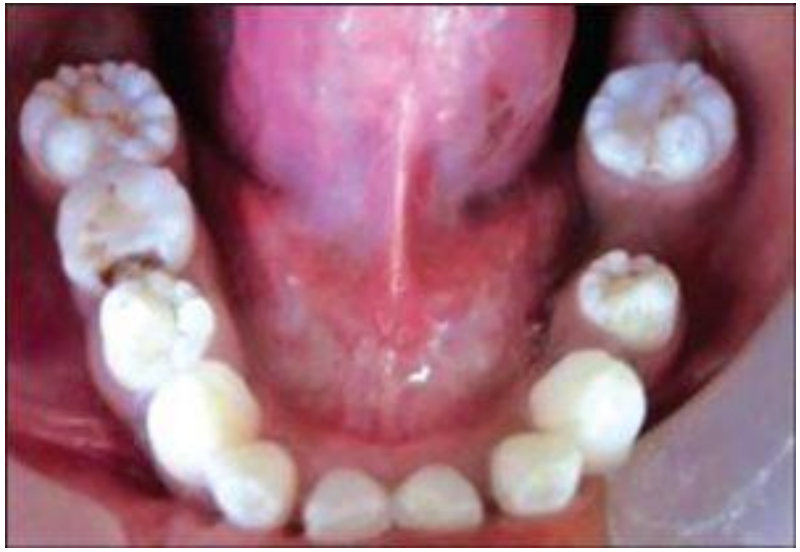


Photo: ASHM Syphilis Outbreak Training
https://syphilisoutbreaktraining.com.au/clinical-stages/

# Perforation of palate

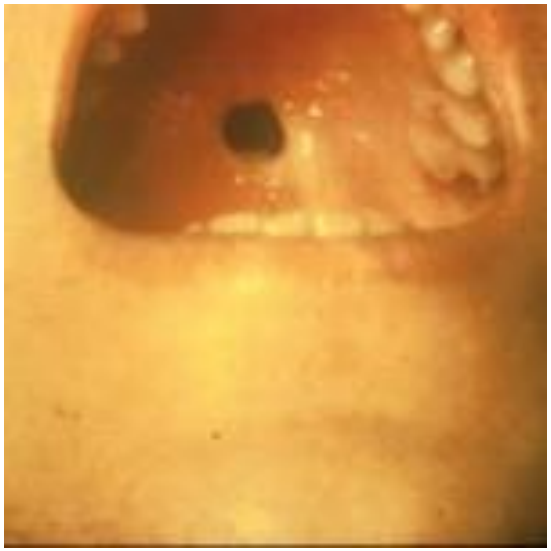
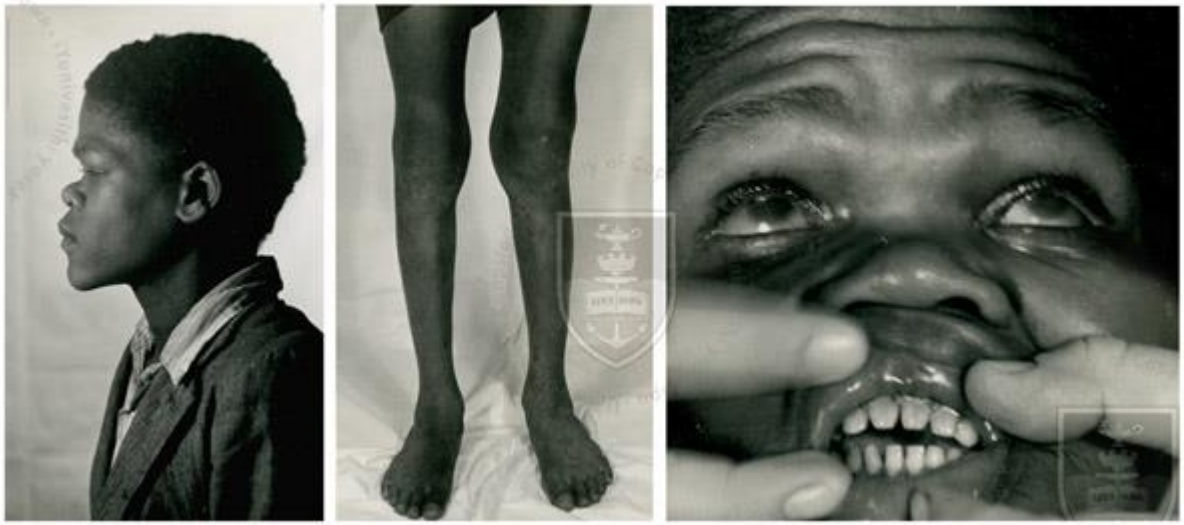
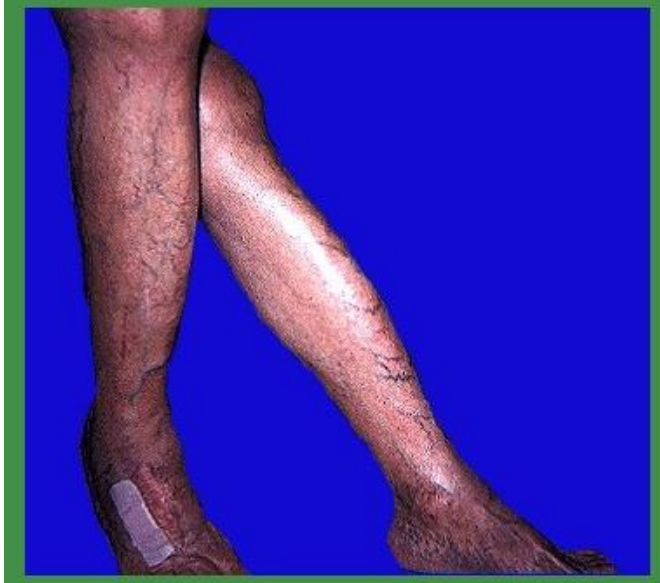


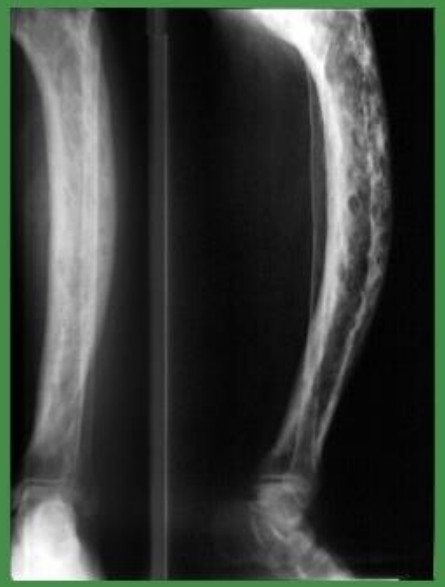
Photo: ASHM Syphilis Outbreak Training
https://syphilisoutbreaktraining.com.au/clinical-stages/

# Stigmata of congenital syphilis



# SABER SHINS





www.freelivedoctor.com

# Treatment regimen is determined by stage of syphilis

- Infectious syphilis (primary, secondary, early latent) (<2yrs duration)
  - **Single dose** 1.8gm (2.4 million units) benzathine penicillin
  - **Two doses** 1.8gm (2.4 million units) benzathine penicillin one week apart if diagnosed in third trimester of pregnancy
- Late latent syphilis
  - **Three weekly doses** 1.8gm (2.4 Million Units) benzathine penicillin
- Tertiary syphilis (refer to specialist)
  - **10-14 days** iv benzyl penicillin 4 hourly or
  - **10 days** daily procaine penicillin imi plus probenicid QID orally

# Penicillin Allergy

- Penicillin is the recommended treatment for syphilis
- Doxycycline is an alternative therapy, (contraindicated in pregnancy)
  - Infectious syphilis: Doxycycline 100 mg orally twice a day for 14 days
  - Late latent syphilis: Doxycycline 100mg orally twice a day for 28 days
- Desensitize to penicillin
- In non-pregnant patient start doxycycline while awaiting desensitisation
- Penicillin is the only treatment proven to be efficacious in pregnancy

Government of South Australia

SA Health

# Jarisch-Herxheimer Reaction (JHR)

- Acute febrile reaction - headache, myalgia, arthralgia, fever, rigors
- Within 24 hours of initiation of therapy for early syphilis (<2yrs duration)
- Resolves spontaneously
- Reaction to endotoxin-like products (lipoproteins, cytokines, TNF alpha, interleukin-6, interleukin-8) released by lysis of bacterial cell membrane
- Systemic inflammatory response.
- Rx: Antipyretics - paracetamol

# Jarisch-Herxheimer Reaction in pregnancy

- Can induce early labour or foetal distress in pregnancy beyond 20 weeks
- Should not prevent or delay therapy
- 67% pregnant women with JHR
  - uterine contractions
  - decreased foetal movement
  - signs of foetal distress
- Hospitalisation recommended for treatment of early syphilis beyond 20 weeks gestation
  - close observation during initiation of therapy
  - foetal monitoring
  - early tocolytic therapy
- Some guidelines recommend:
  - 20mg oral prednisolone BD x 3 doses before treating syphilis in the second half of pregnancy

# Treatment in pregnancy – key points

- Treat as for same stage of infection in non-pregnant cases
- Missed doses are not acceptable in pregnancy – restart course
- For infectious syphilis treated in third trimester, add second dose Benzathine Penicillin one week after the first dose
- Jarisch Herxheimer Reaction from treatment of infectious syphilis after 20 weeks of pregnancy can trigger premature labour
- Follow up serology monthly until delivery, and assessment +/- treatment of neonate

# Stage determines treatment regimen so How do we stage syphilis?

Gather all available information from:

1. Sexual history
2. History and examination for: chancres, rash, hair loss, mouth lesions, neuro and cardiovascular systems)
3. Current and previous serology results
4. Treatment history, and follow up RPR results

- Can always seek assistance with staging from ASHC or CDCB

# Diagnosis

1. PCR swab from chancre or rash – confirms infectious (early) syphilis

2. Serology (blood tests)

3. Point of Care tests (POCT)
   - Positive POCT cannot differentiate between treated and untreated syphilis.
   - Positive POCT requires follow up standard serology and assessment for previous treatment

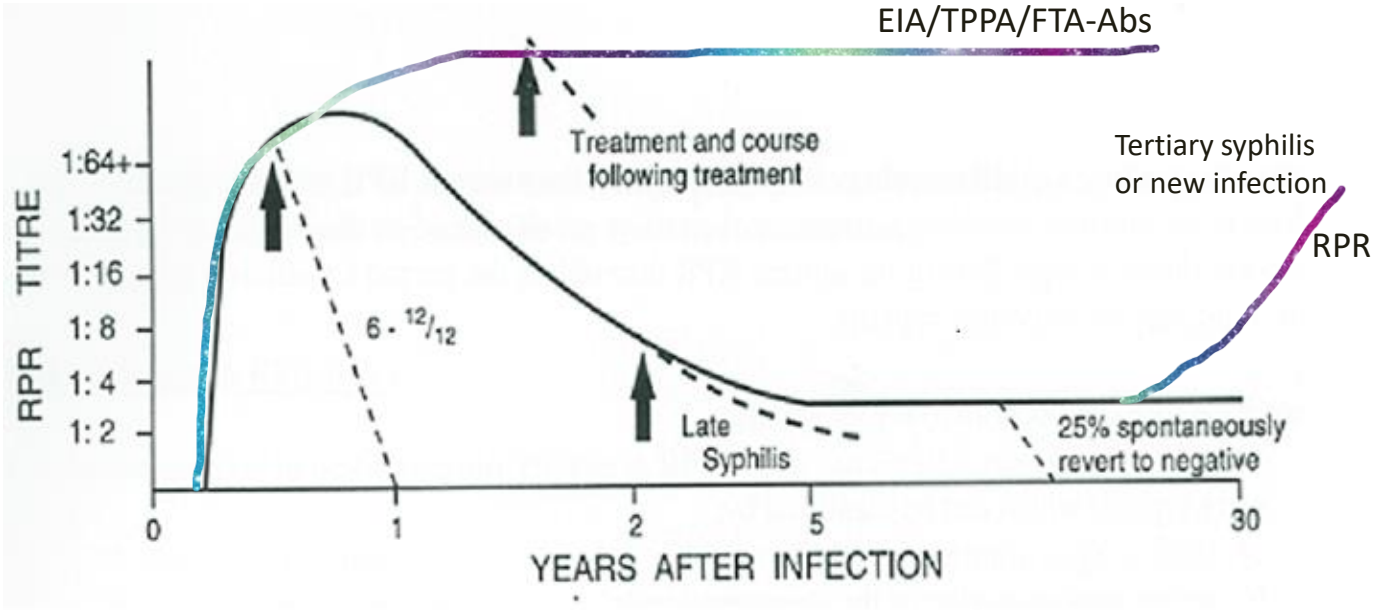
# Syphilis serology

- Two groups ("families") of blood tests
  - "treponemal" syphilis blood tests
    - EIA, TPPA, FTA-Abs
    - Must have 2 positive tests from this family to confirm infection
    - remain positive for life, even after successful treatment
  - "non-treponemal" tests
    - RPR, VDRL
    - Reported in titres (1:1, 1:2, 1:4, 1:8, 1:16, 1:32, 1:64….)
    - Used to monitor response to treatment
    - Fall as disease enters latent stage, and with or without treatment
    - Rise in re-infection or reactivation (tertiary syphilis) occurs
    - A four fold change in titre is significant

# Syphilis serology – general principles

- All blood tests are positive by three months after infection
- Must have two treponemal tests positive to confirm syphilis diagnosis
- Treponemal tests remain positive for life, even after successful treatment ("serological scar")
- Always do syphilis serology on day of treatment as a baseline

# Syphilis serology




Government of South Australia

SA Health

# Follow up serology

- Four-fold drop in RPR titre after treatment indicates cure
- Four-fold rise in RPR indicates treatment failure, or tertiary syphilis, or new infection
- ***Always do RPR on day of treatment*** to establish pre-treatment baseline from which to identify 4-fold drop
- Follow up RPRs are crucial to:
  - Confirm cure (= 4-fold drop from pre-treatment RPR)
  - Document serofast status (2 identical RPR titres three months apart, performed in parallel)
  - Nadir RPR becomes new baseline from which to detect new infection (a four-fold rise from baseline serofast titre)

Government of South Australia

SA Health

# Follow up serology

- Four fold drop is expected within
  - 12 months from treatment of early syphilis
  - 24 months from treatment of late latent syphilis

- Four fold rise from baseline RPR indicates
  - new infection (where adequate treatment is documented)
  - treatment failure, or
  - tertiary syphilis (where no adequate treatment documented)

Government of South Australia

SA Health

# Follow up - non-pregnant patients

- Infectious syphilis: follow up RPR at 1, 3, 6, and 12 months until serofast
- Late latent syphilis: follow up RPR at 3, 6 and 12 months until serofast
- Then 6 monthly RPR until negative or serofast status documented
- If RPR is non-reactive at treatment, one routine follow up serology is required at 3 months to confirm persisting non-reactivity.

# Follow up in pregnancy

- Monthly RPR until delivery
- Aim is to document a 4-fold drop before delivery
- Plus detect and treat reinfection during pregnancy
- Repeat maternal RPR at 3, 6, 12 months after delivery
- Titres showing 4 fold rise or not dropping appropriately suggest reinfection or treatment failure – discuss with specialist service and retreat

| Date | EIA (Syphilis screen) | RPR | TPPA | Treatment history |
|---|---|---|---|---|
| 01/07/2016 | Reactive | Non-reactive | Reactive | Serofast at non-reactive RPR |
| 01/01/2016 | Reactive | Non-reactive | Reactive | |
| 01/05/2015 | Reactive | 1:2 | Reactive | |
| 01/02/2015 | Reactive | 1:16 | Reactive | |
| 01/01/2015 | Reactive | 1:64 | Reactive | Treated single dose Benzathine penicillin 1.8gms imi |
| 01/01/2014 | Non-reactive | Non-reactive | Non-reactive | |

# NT syphilis register - example

Northern Territory Government

DEPARTMENT OF HEALTH

## Syphilis Register Information System
## Syphilis Results and Treatment

Name:

DOB:

Sex:

Indigenous Status: **Indigenous**

Community:

HRN:

| Date Done | Laboratory | Trep Test | | Trep Test 2 | | RPR | Treatment Date | Treatment |
|---|---|---|---|---|---|---|---|---|
| 1/11/2017 | Westerns | EIA | Negative | | | | | |
| 13/05/2019 | Westerns | EIA | Positive | TPPA | Positive | 1: 256 | 22/05/2019 | LA Bicillin 2.4 mu IM |
| 18/06/2019 | Westerns | EIA | Positive | | | 1: 128 | | |
| 30/07/2019 | Westerns | EIA | Positive | | | 1: 64 | | |
| 8/09/2019 | Westerns | EIA | Positive | | | 1: 32 | | |
| 10/10/2019 | Westerns | EIA | Positive | | | 1: 32 | | |
| 4/11/2019 | Westerns | EIA | Positive | | | 1: 32 | | |

| Date | EIA (Syphilis screen) | RPR | TPPA | Treatment history |
|---|---|---|---|---|
| 01/01/2016 | Reactive | Non-reactive | Non-reactive | Never treated before |

| Date | EIA (Syphilis screen) | RPR | TPPA | Treatment history |
|---|---|---|---|---|
| 01/01/2016 | Reactive | Non-reactive | Reactive | No history available |

Government of South Australia

SA Health

# Lucy

- 28 yo asymptomatic Aboriginal woman living in Adelaide, comes into the clinic at 28 weeks pregnancy for a routine check up.

  NB Current infectious syphilis epidemiology is changing, and includes non-Indigenous women of reproductive age whose sexual network includes MSM, IVDU or unknown risk factors

- Her earlier antenatal syphilis screen was negative.

- Syphilis serology is reactive:
- screen detected, TPPA detected, RPR 1:32

| Date | Clinical findings | EIA (Screen) | TPPA | FTA | RPR | Treatment history and comments |
|---|---|---|---|---|---|---|
| 24/3/2018 | Asymptomatic antenatal screen at 12 weeks pregnancy | negative | negative | negative | Non-reactive | |
| 20/7/2018 | Asymptomatic. 28 weeks pregnant. On examination faint maculopapular rash on trunk, palms and soles | Reactive | Reactive | | 1:32 | Secondary syphilis. Treated x1 Benz Pen, monitored in hospital for JHR and preterm labour (as treated in second half of pregnancy) |
| 21/8/2018 | Follow up at 1 month, 32 weeks pregnant | Reactive | | | 1:16 | |
| 20/9/2018 | Follow up at 36 weeks pregnant | Reactive | | | 1:4 | Four fold drop demonstrated before delivery |

# Lucy's further management?

- Full STI/BBV screen
- Notify syphilis case to CDCB
- Partner notification – testing and treatment to prevent reinfection, especially prior to delivery
- RPR monthly till delivery, then repeat RPR at 3, 6, 12 months after delivery till serofast state documented
- Assess baby at birth – seek paediatric advice if any concerns
- Other? (eg education, safer sex information, free condoms and lubricant, social and emotional support)

# Case - Syphilis management in pregnancy

- Unbooked mother presents in labour, with reactive syphilis serology at time of delivery, and no history adequate syphilis treatment
  - Seek specialist paediatric assessment
  - Examination and serology of neonate
  - Request placental pathology/syphilis PCR
  - CSF, skeletal XRays, PCR of lesions, as indicated by examination findings
- Decision to treat infant based on
  - Maternal and neonatal RPR
  - Maternal treatment history
  - Clinical, lab and radiology findings
  - Ability to follow up baby

# Malcolm

- 29yo man who has sex with men living in Adelaide, (or Port Augusta, or Port Lincoln, or Coober Pedy, or Mount Gambier)
- Travels to Sydney and Melbourne occasionally and has sex with casual partners interstate and in Adelaide. Generally uses condoms for anal sex but never for oral sex.
- Routine full STI screen has been negative for syphilis, to date, although Malcolm has had two episodes of rectal chlamydia and one episode of pharyngeal gonorrhoea detected on routine STI screening in the past 3 years.

| Date | Clinical findings | EIA (Screen) | TPPA | FTA | RPR | Treatment history and comments |
|---|---|---|---|---|---|---|
| 1/1/2016 | Asymptomatic screen | Non-reactive | | | | |
| 1/5/2016 | Rash noted, involving trunk, palms and soles | Reactive | Reactive | Reactive | 1:128 | Secondary syphilis<br>Treated x1 Benzathine Penicillin |
| 1/6/2016 | Follow up at 1 month | Reactive | | | 1:32 | 4 fold drop confirmed - cured |
| 1/9/2016 | 3 mths | Reactive | | | 1:4 | Continued monitoring to establish baseline RPR and serofast status |
| 1/12/2016 | 6 mths | Reactive | | | 1:1 | |
| 1/5/2017 | 12 mths | Reactive | | | 1:1 | Serofast |
| 1/5/2018 | 24 mths, asymptomatic | Reactive | | | 1:64 | Repeat infection<br>Early latent syphilis<br>Requesting information on HIV PREP |

# Vanessa

- 42 year old Aboriginal woman who recently travelled to your community from the NT, is tested for STIs during the annual six week STI screening program
- Vanessa's syphilis serology (screen, TPPA and FTA Abs) come back reactive with a non-reactive RPR. All other STI and HIV tests are negative
- You ask about symptoms such as painless genital ulcers and rashes, and Vanessa has never noticed any of these.
- Vanessa has three adult children and is married. She reports no other partners than her husband since she was married.

| Date | Clinical findings | EIA (Screen) | TPPA | FTA | RPR | Treatment history and comments |
|---|---|---|---|---|---|---|
| 1/4/2018 | Asymptomatic | Reactive | Reactive | | Non-reactive | Travels from interstate. Tested for the first time at your clinic |

Government of South Australia

SA Health

# Vanessa

- You contact the NT syphilis register and ask for previous serology and treatment history

Government of South Australia

SA Health

| Date | Clinical findings | EIA (Screen) | TPPA | FTA | RPR | Treatment history and comments |
|---|---|---|---|---|---|---|
| 24/3/2002 | Asymptomatic screen in NT | Reactive | Reactive | Reactive | Non-reactive | Recalled for treatment |
| 1/4/2002 | Asymptomatic. Normal genital, dermatological, neurological, ocular and cardiovascular examination | Reactive | Reactive | | Non-reactive | Treated x3 weekly imi Benz Pen for late latent syphilis |
| 1/7/2002 | Follow up at 3 months | Reactive | | | Non-reactive | |
| 1/10/2002 | 6 mths | Reactive | | | Non-reactive | |
| 1/10/2002 | 18 months | Reactive | | | Non-reactive | |
| 5/5/2013 | Asymptomatic | Reactive | | | Non-reactive | |
| 1/4/2018 | Asymptomatic | Reactive | | | Non-reactive | Travels interstate. Tested for the first time at your clinic |

# Andrew

- 52 yo asymptomatic Aboriginal man
- Has a history of reactive syphilis serology
- At a routine screen including syphilis testing serology is reactive again

| Date | Clinical findings | EIA (Screen) | TPPA | FTA | RPR | Treatment history and comments |
|---|---|---|---|---|---|---|
| 24/3/2002 | Asymptomatic screen | Reactive | Reactive | Reactive | Non-reactive | Recalled for treatment |
| 1/4/2002 | Asymptomatic. Normal genital, dermatological, neurological, ocular and cardiovascular examination | Reactive | Reactive | | Non-reactive | Treated x3 weekly imi Benz Pen for late latent syphilis |
| 1/7/2004 | Asymptomatic | Reactive | | | Non-reactive | Assumed serological scar. No treatment given |
| 1/8/2019 | Asymptomatic | Reactive | | | Non-reactive | Separated from wife 2005. Discloses “5 or 10” female partners since last test: re-treat? |

Government of South Australia

SA Health

# Will you treat Andrew for late latent syphilis now?

- What else would be useful further history to assess risk of re-exposure since treated?
- Sexual history, including epidemiological characteristics of partners
  - Known syphilis diagnoses in partners?
  - paid partners?
  - Remote area of residence?
  - Condom use
- Travel history
  - Andrew's travel history
  - Partners' travel history
- History of syphilis testing or treatment elsewhere in intervening years – check syphilis registers
- History of other STIs, BBVs or IVDU, in intervening years since syphilis treatment? (indicating risk of exposure to syphilis as well)
- History of rash or chancres, in intervening years, or neurological or cardiovascular symptoms and signs currently
- Make a decision with Andrew on retreatment or ongoing monitoring for future rise in RPR suggesting reinfection had occurred in intervening years.

Government of South Australia

SA Health

# Some approaches to managing patients with serological scar

a) Never repeat treponemal tests in patients with previous history of treated syphilis – only ever use RPR as follow up test.

b) Repeat RPR opportunistically at any opportunity, eg at every venepuncture for other routine health care

c) Add to recall system and repeat annually – at annual STI screening program

# Other management steps

- Notify CDCB – notifiable infection
- Partner notification and treatment
  - All partners for last 2 years in infectious syphilis
  - Triggered by Notification to CDCB
  - For indigenous cases: Syphilis Register staff
  - For non-indigenous cases: local clinicians should make judgement about best service to provide PN on case by case basis:
    - Local clinicians
    - Adelaide Sexual Health Centre staff
  - Consider individual factors affecting confidentiality and stigma in each case.
- Full STI screen, including HIV test

# When I need advice?

- Non-indigenous cases, phone the **Adelaide Sexual Health Centre Duty Doctor phone line**
- **Indigenous cases phone: CDCB, and Syphilis Register team 1300 232 272**
- Available every weekday
- Speak to Consultant Sexual Health Physician for clinical advice
- Speak to Partner Notification Officer for support with Partner Notification

- **ASHC Ph: (08) 7117 2800**

Government of South Australia
SA Health

# Resources

ASHM (Australasian Society for HIV Medicine)

1. Decision making in Syphilis Interactive Tool
https://ashm.org.au/resources/syphilis-decision-making-tool/

2. Syphilis Outbreak Training Website
https://syphilisoutbreaktraining.com.au/guidelines/

SA Health Perinatal Practice Guidelines: Syphilis in Pregnancy
https://www.sahealth.sa.gov.au/wps/wcm/connect/4f3188804eedeac1b604b76a7ac0d6e4/Syphilis+in+pregnancy+PPG+V_4.0.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-4f3188804eedeac1b604b76a7ac0d6e4-oc-MO.L

Government of South Australia
SA Health

# STI diagnosis and management guidelines

**Diagnosis and Management Guidelines**

Adelaide Sexual Health Centre, STI Diagnosis and Management Guidelines
https://www.sahealth.sa.gov.au/wps/wcm/connect/Public+Content/SA+Health+Internet/Health+services/sexual+health+services/Adelaide+sexual+health+centre

Australian STI Management Guidelines for use in Primary Care
http://www.sti.guidelines.org.au/

RACGP Guidelines for preventive activities in general practice, 9th edition
http://www.racgp.org.au/your-practice/guidelines

**STI Screening guidelines:**

STIPU (NSW Health) screening guidelines
https://stipu.nsw.gov.au/

Silver Book (WA) STI screening guidelines
http://ww2.health.wa.gov.au/Silver-book

STIGMA Guidelines for STI screening in MSM
www.ashm.org.au/pdfs/STIGMATestingGuidelines

**Partner Notification Guidelines:**

Australasian Contact Tracing Guidelines
http://contacttracing.ashm.org.au/

Government of South Australia

SA Health

# Thank you

# Any questions?

Government of South Australia

SA Health