

Syphilis in Pregnancy and Congenital Syphilis

GP Obstetric Shared Care Clinical Refresher

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Communicable Disease Control Branch, Public Health Division



**Government
of South Australia**

SA Health



We would like to acknowledge this land that we meet on today is the traditional lands 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 greater Adelaide region and that their cultural and heritage beliefs are still as important to the living Kaurna people today.





Learning Objectives

1. To develop an understanding of the syphilis outbreak and current epidemiology in SA and nationally.
2. To develop an understanding of the proposed forthcoming changes to the SA Perinatal Practice Guidelines (SAPPG) for Syphilis in Pregnancy.
3. To develop an understanding of the role of obstetric shared care in supporting congenital syphilis prevention.



Session Overview

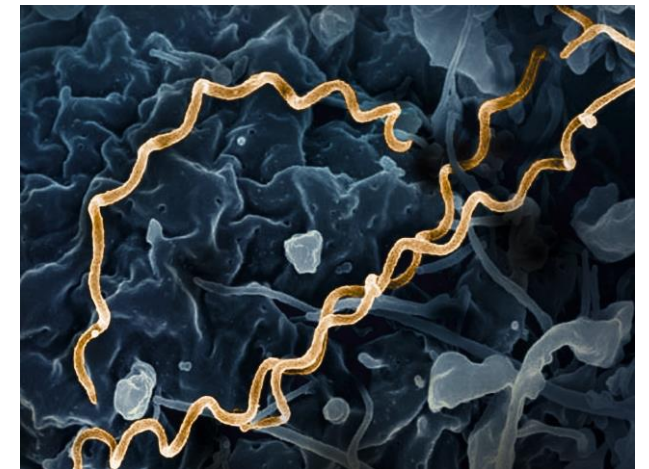
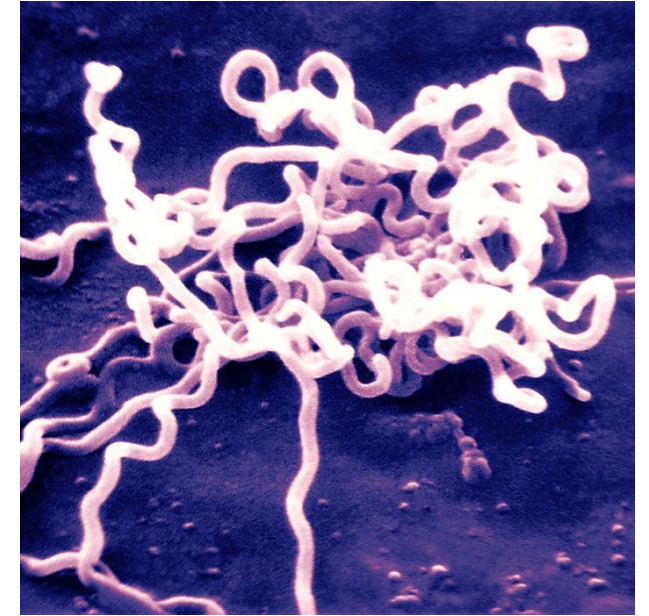
1. History of syphilis (Bel)
2. Clinical overview (Tom)
3. Syphilis and congenital syphilis surveillance trends in SA and Australia (Tom)
4. SA syphilis response overview (Tom)
5. Key themes from congenital syphilis cases nationally (Bel)
6. Forthcoming changes to recommendations for syphilis screening in pregnancy in SA + implementation considerations (Bel)



History of syphilis

Syphilis: a brief overview

- > Etiologic agent: bacterium *Treponema pallidum*, subspecies *palladium*
- > Organism type: Spirochete (corkscrew shaped)
- > Transmission: sexual contact, contact with chancre (lesion), vertical
- > Clinical features: manifold, can affect the heart, skin, bones, hearing, vision, brain/mental health, known as “the Great Imitator” – difficult differential diagnosis



Syphilis: key historical events

- > 1452: Emerged in Europe after Columbus' return from the Americas
- > 1800-1900s: Regulation of sex work in many European countries to control STIs
- > 1905: Discovery of *treponema palladium*
- > 1906: First serologic test developed (Wasserman test)
- > 1909: Discovery of Arsphenamine compound 606 (Salvarsan, arsenic-derivative antibiotic)
- > 1920s-1950s: Malarial fever therapy for neurosyphilis
- > 1932-1972: Tuskegee Syphilis Study
- > 1943: Discovery of penicillin as an effective treatment
- > 1950s-present: Widespread use of penicillin as treatment



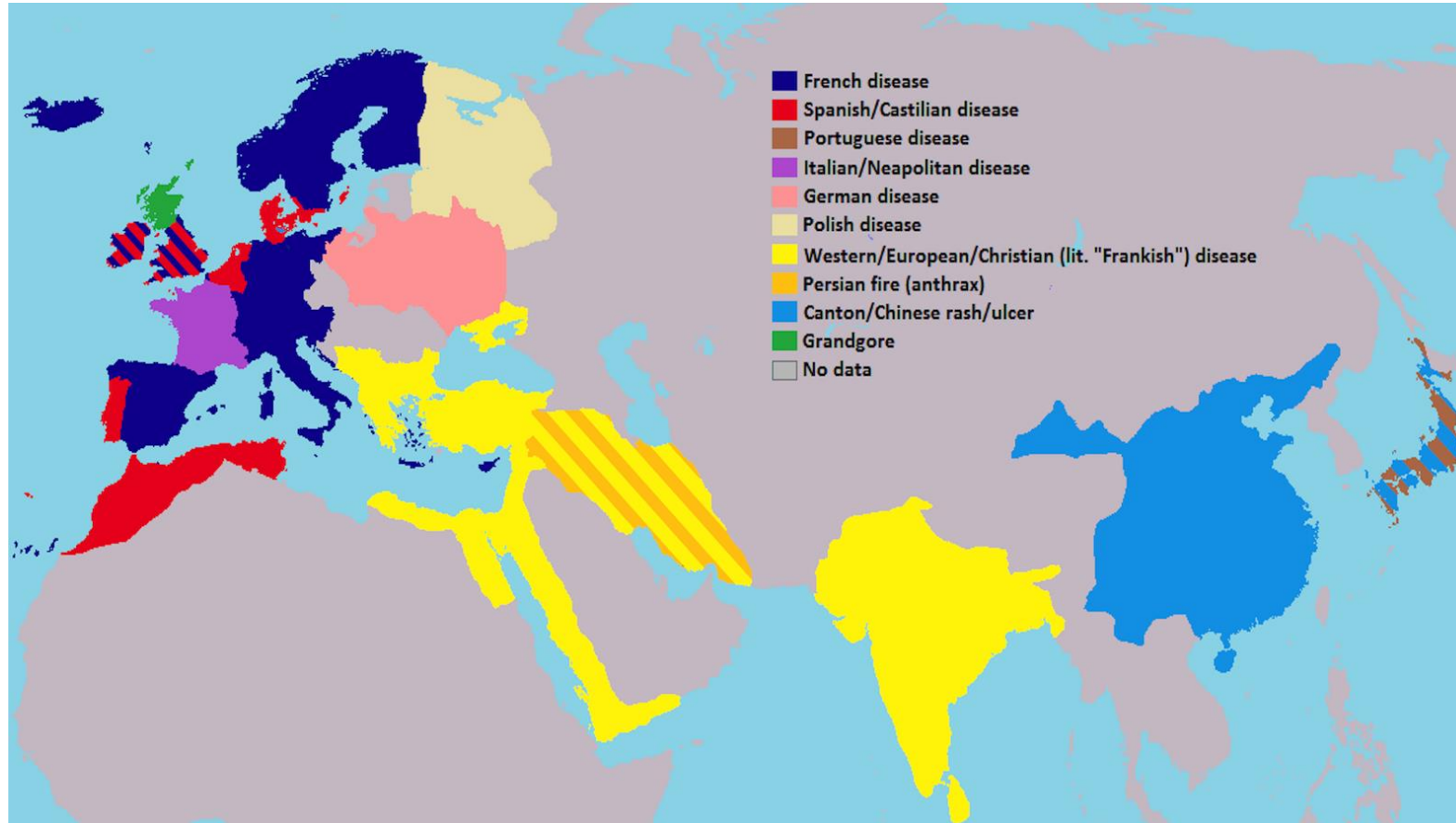
The Inheritance (1897-1899), Edvard Munch



Portrait of a mother with her son, who is affected by congenital syphilis.

Prior to the discovery of *T Palladium* in 1905, some assumed that syphilis in neonates was a hereditary disease.

A history of stigma, blame and moralising



Source: [Maps on the Web, 2017](#)

A history of stigma, blame and moralising

For the former, besides the before-mentioned visitations, and which ought to extend to men who may infect the prostitutes, cleanliness, the use of lotions and injections, ought to be recommended, with chlorides and soap, and the other means best calculated to clean and disinfect by chemically changing the morbid secretions. *If, in general, women were more cleanly and careful of themselves, the venereal disease would be far less common.* How many women have received the contagious matter, and transmitted it, without becoming infected themselves!

For the latter are to be advised, a free use of the chlorides, soap, and all the means which can cleanse and disinfect, by chemically changing the material of the morbid secretions; remembering that the more the suspicious tissues are washed and cleansed, the less liable are they to infection. Before the act of coition, a scrupulous examination of the organs, to ascertain that no lesions exist. Here the alkaline lotions, &c., are hurtful, as they are liable to wound the surface, and thus cause a peculiar liability to infec-

WIGAN ELECTION.

A PUBLIC

MEETING

WILL BE HELD ON

THURSDAY, JAN. 6th, 1881,

IN THE

PUBLIC HALL, KING STREET,

TO PROMOTE THE UNCONDITIONAL REPEAL

OF THE

CONTAGIOUS DISEASES ACTS

RELATING TO WOMEN.

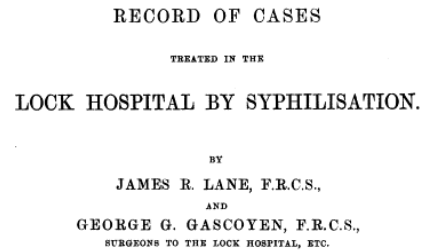
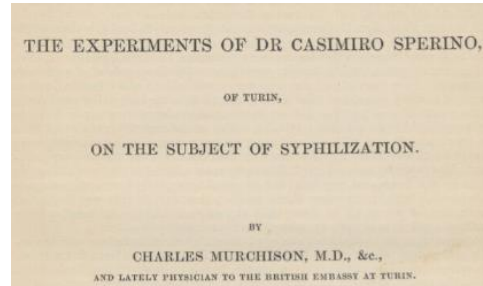
CHAIR TO BE TAKEN AT 8 O'CLOCK.



Treatments pre-penicillin: “One night with Venus, a lifetime with Mercury”



Treatments pre-penicillin



Syphilisation aka inoculation with *treponema palladium* circa mid-late 1800s.



The Psychiatrist Who Won a Nobel Prize for Treating Syphilis With Malaria



Pyrotherapy for tertiary syphilis / syphilitic paresis circa early 1900s.



Arsenic-based antibiotic 'Salvarsan', first effective treatment, widely used from the 1920s.

History of syphilis: extensive disease burden

LIGUE NATIONALE FRANÇAISE CONTRE LE PÉRIL VÉNÉRIEN

LA COURSE A LA MORT

TUBERCULOSE : 150.000 MORTS PAR AN
SYPHILIS : 140.000 " "
CANCER : 40.000 " "

OFFICE D'HYGIÈNE SOCIALE de TARN-&-GARONNE

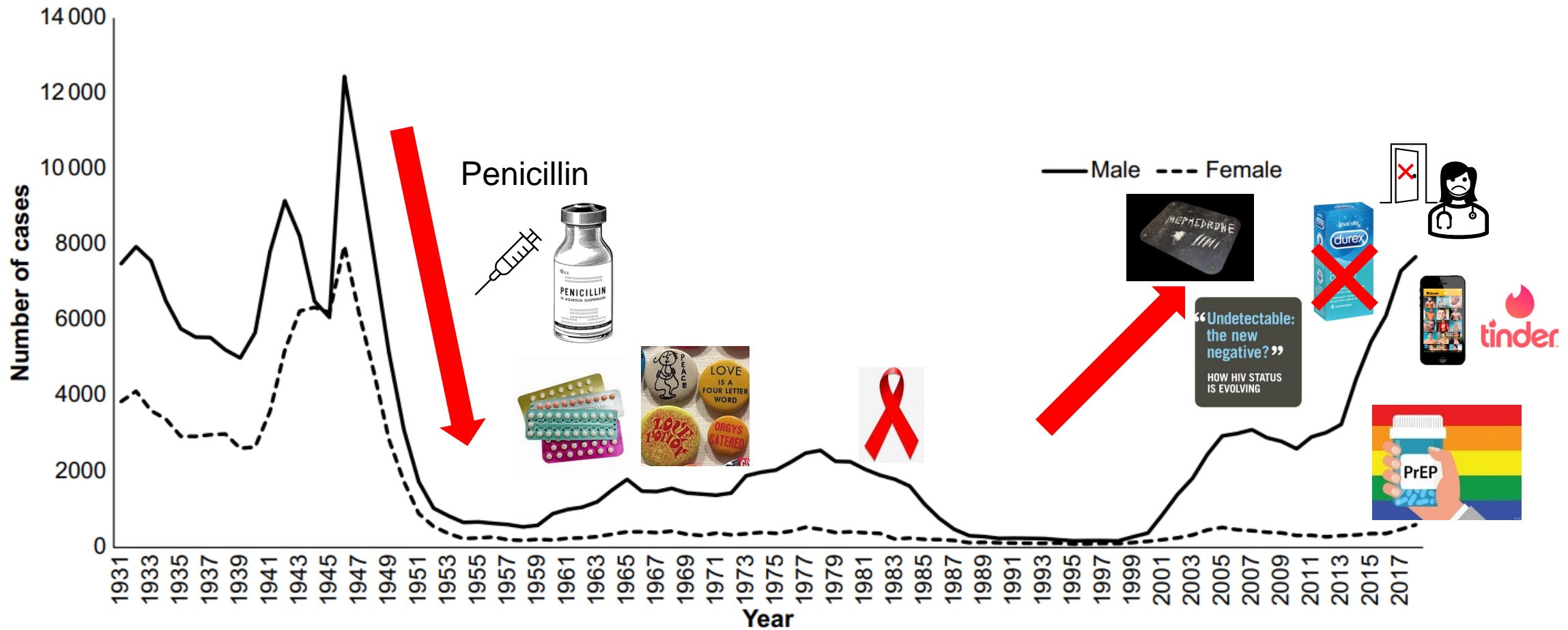
Publ. par le Ministère du Travail et de Prévoyance Sociale

ANTE-NATAL AND POST-NATAL SYPHILIS
THAVIES INN VENEREAL DISEASE CENTRE FOR PREGNANT WOMEN
RESULT OF TREATMENT OF CASES
FROM SEPT 1917 TO JUNE 1929

CASES TREATED	EXPECTED MORTALITY	BABIES BORN ALIVE	BABIES DYING FROM SYPHILIS	TOTAL STILLBORN FROM SYPHILIS
267	178	86	159	4
				1928
				TOTAL 5

History repeating?

Figure 1: Number of cases of infectious syphilis notified in the UK 1931-2018



Source: UK Health Security Agency



Clinical overview



Numerous medical images of:

- Male and female genitalia showing syphilitic lesions
 - Babies affected by congenital syphilis



Contact with *Treponema pallidum*
(ID₅₀ = 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)

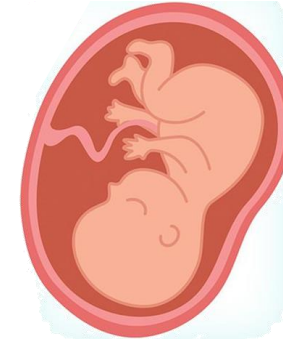
Infectious syphilis
(<2 years duration)

Non-infectious syphilis
(>2 years duration)

Neurosyphilis and Congenital syphilis



- > Infection of the central nervous system.
- > Can occur weeks to years after acquisition of infection.
- > Loss of vision or hearing, meningitis, meningovascular disease, palsies, dementia, and other severe neurological complications.



- > Transmission of syphilis during pregnancy or childbirth.
- > Can occur up to 8 years after acquisition of maternal infection.
- > High rates of infant mortality, preterm birth, and congenital abnormalities (which can lead to severe, permanent disability)

Clinical overview: neurosyphilis

Figure 2: Neurosyphilis-related hospital admissions, Australia, 2007 to 2020

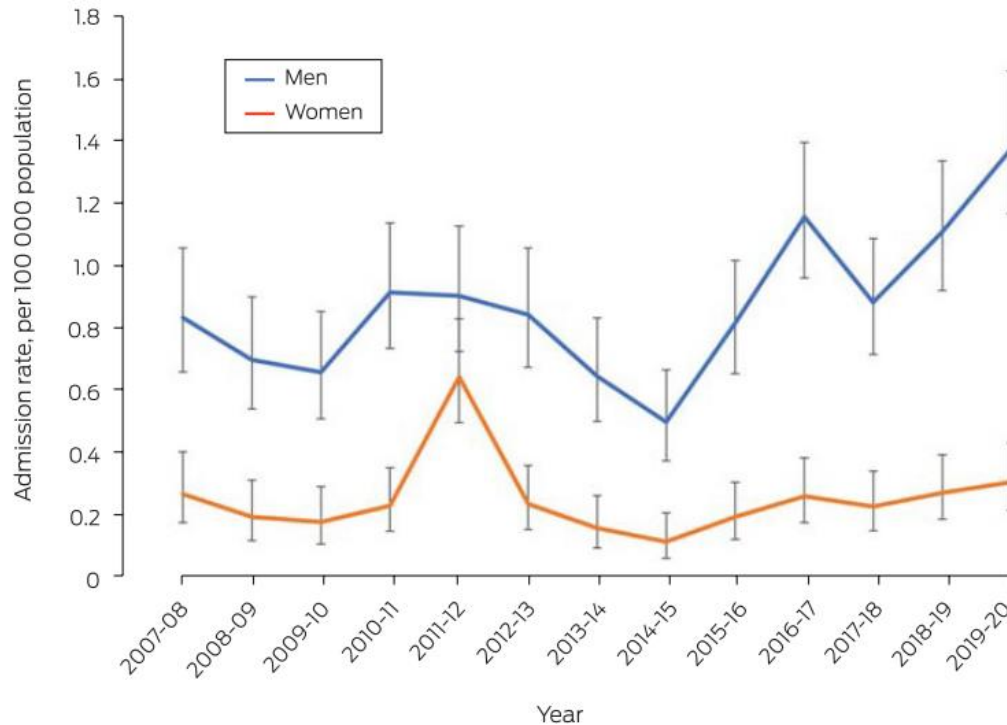
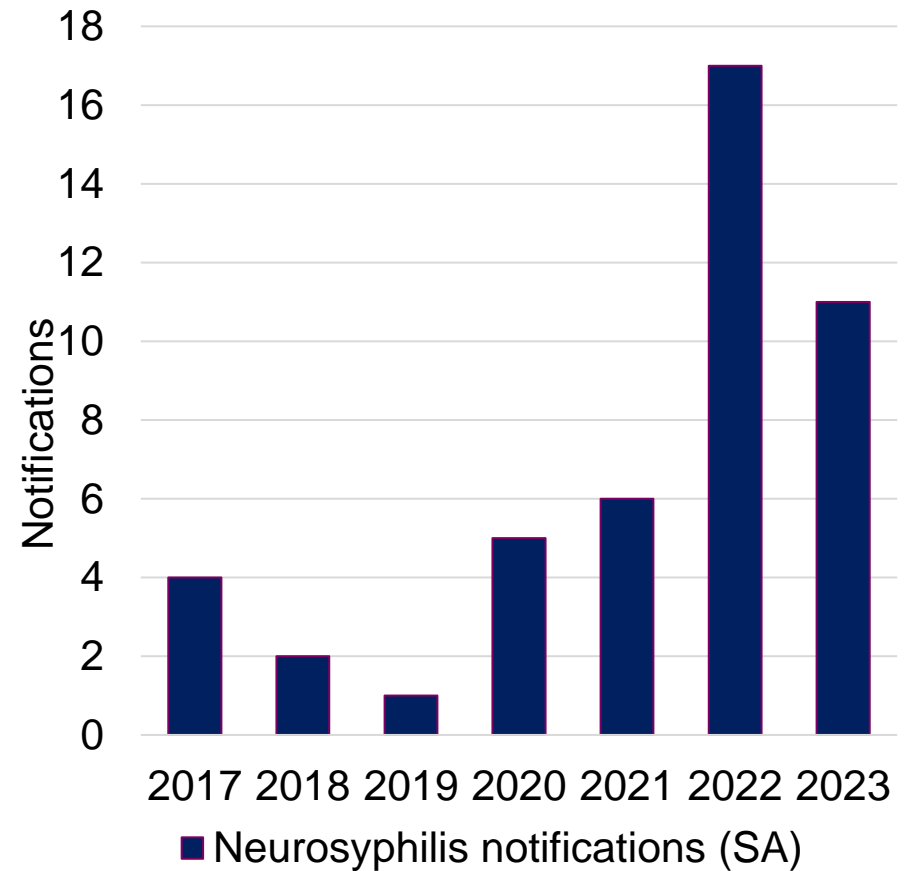


Figure 3: Notifications of neurosyphilis, South Australia, 2017 to 2023



Cases of neurosyphilis are increasing in parallel with increasing syphilis prevalence. Typically require specialist inpatient management involving extended LOS and post-discharge care and rehabilitation.

Clinical overview: congenital syphilis

- > Primary or secondary syphilis in pregnancy
 - Virtually 100% fetuses 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

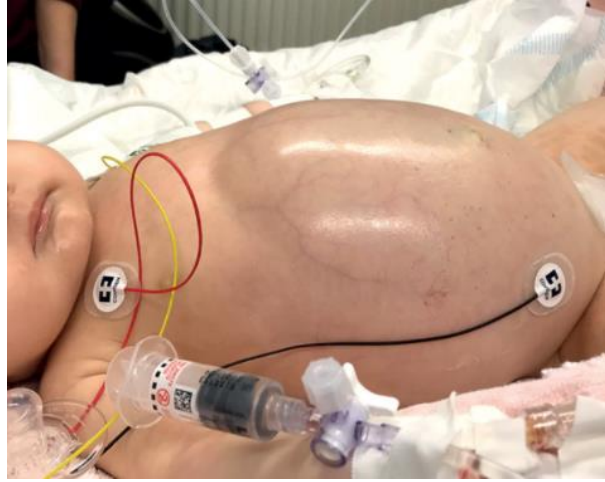
Almost 100% preventable if treated before 28 weeks



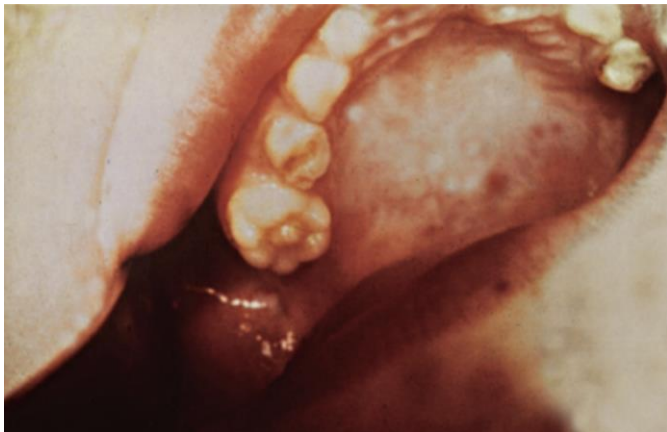
The screenshot shows a news article from ABC News. The header includes the ABC NEWS logo and a navigation menu with categories: Politics, World, Business, Analysis, Sport, Science, Health, Arts, Fact Check, and Corona. The main headline reads: "Syphilis has returned to Queensland in epidemic proportions, and it's killing babies". Below the headline is a sub-headline: "How did this happen?". The article text states: "The outbreak started in the Indigenous community of Doomadgee, on the Gulf of Carpentaria, in 2011 with a handful of cases. At the time, sexual health services across Queensland were cut by the Campbell Newman-led Queensland government, and health workers claimed the opportunity to stop the escalation was missed. The number of cases quickly spiralled out of control because of the transient nature of people in Indigenous communities, and the outbreak spread across Queensland, into the Northern Territory, and into South and Western Australia." A quote in purple text follows: "So, from almost eradicating it, it's turned into one of the biggest epidemics in recent history".

Spurrier warns syphilis outbreak has spread into SA

Early congenital syphilis (diagnosed before 2 years of age)



Late congenital syphilis (diagnosed after 2 years of age)





Syphilis and congenital syphilis surveillance trends in SA and Australia

Figure 4: Notifications of infectious syphilis, by sex, Australia, 2011 – 2023

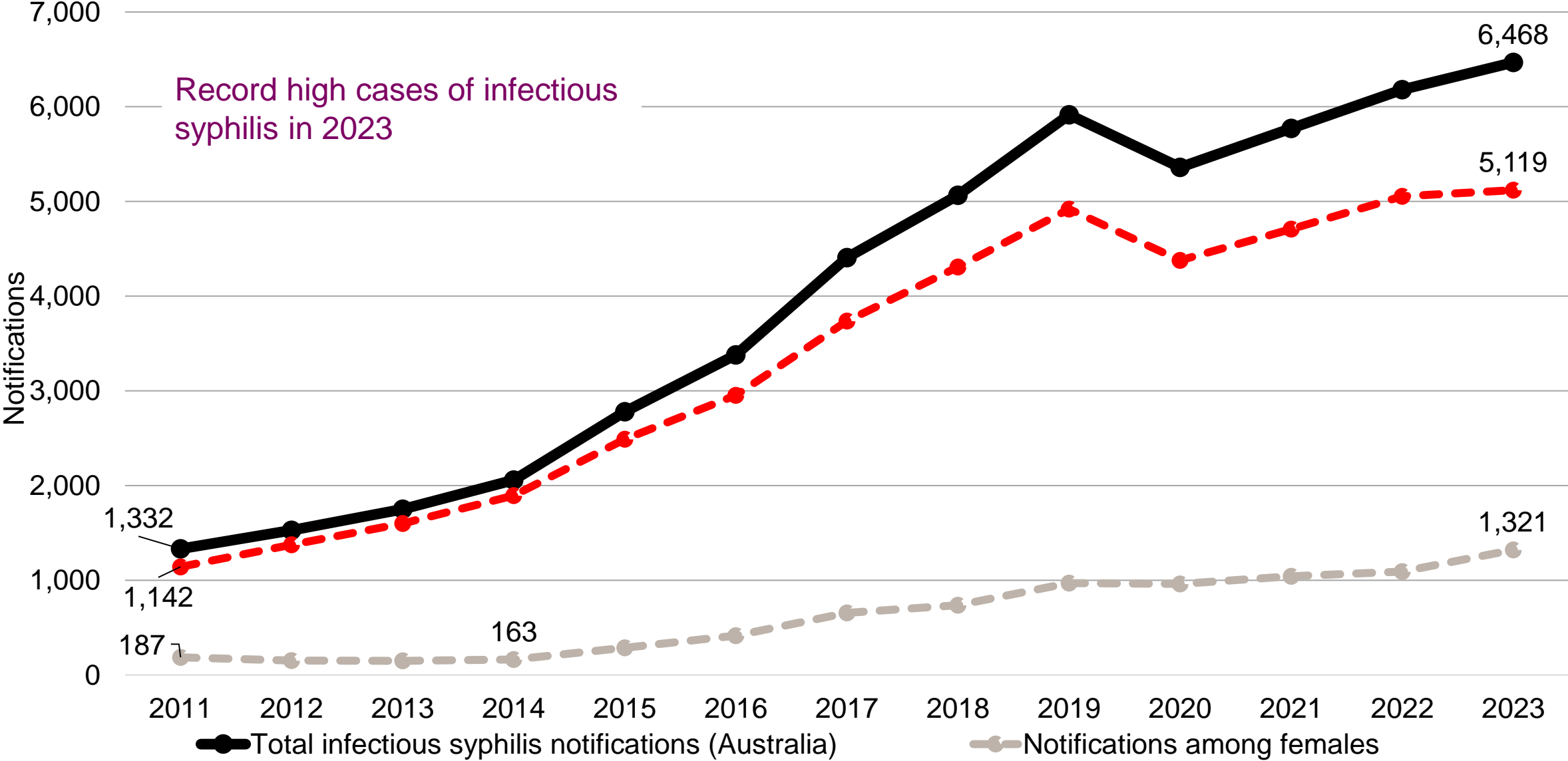


Figure 5: Notifications of infectious syphilis, by sex, South Australia, 2011 – 2023

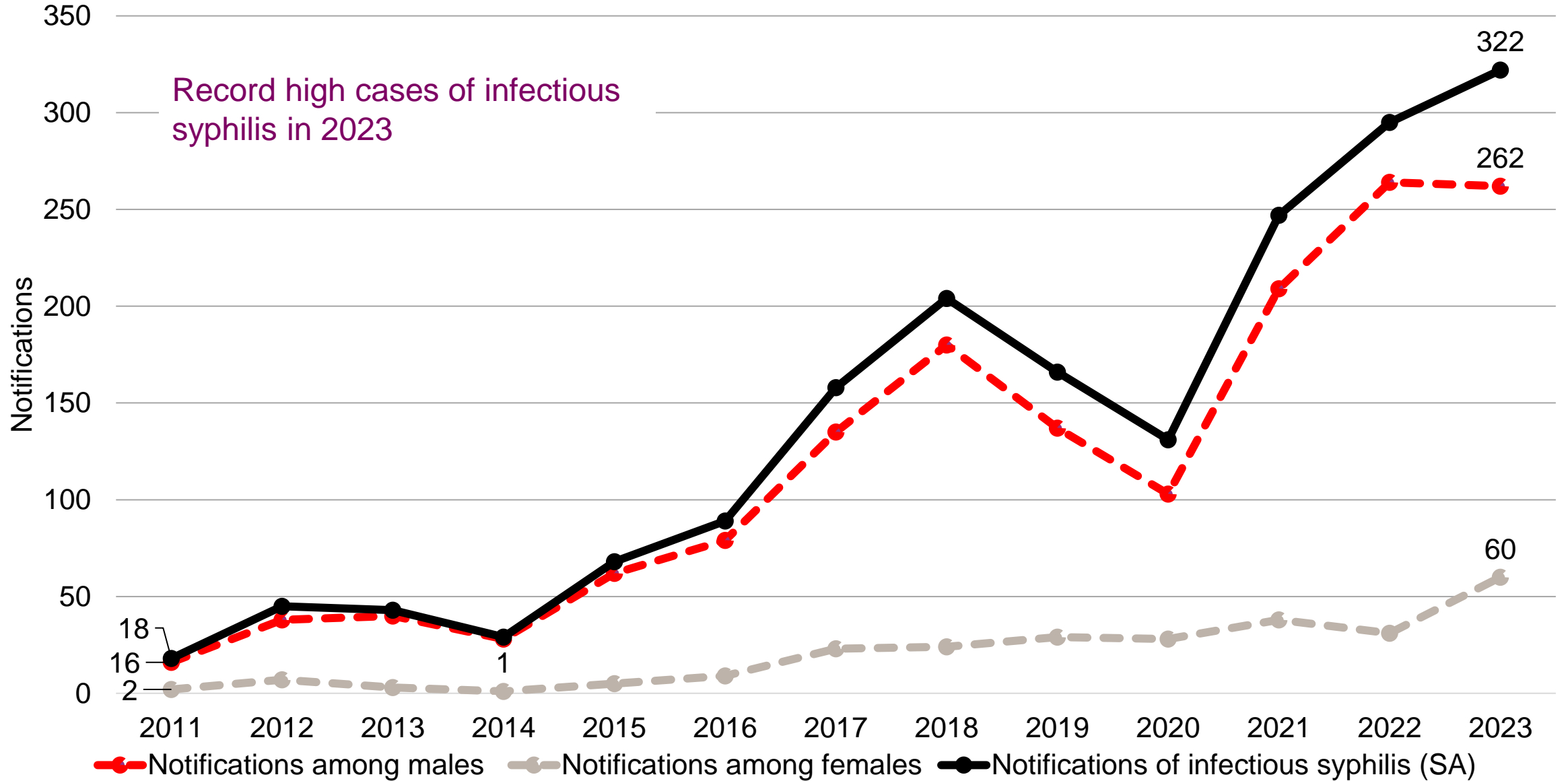


Figure 6: Infectious syphilis notification rate per 100,000 population, by Indigenous status, South Australia, January 2013 – September 2023

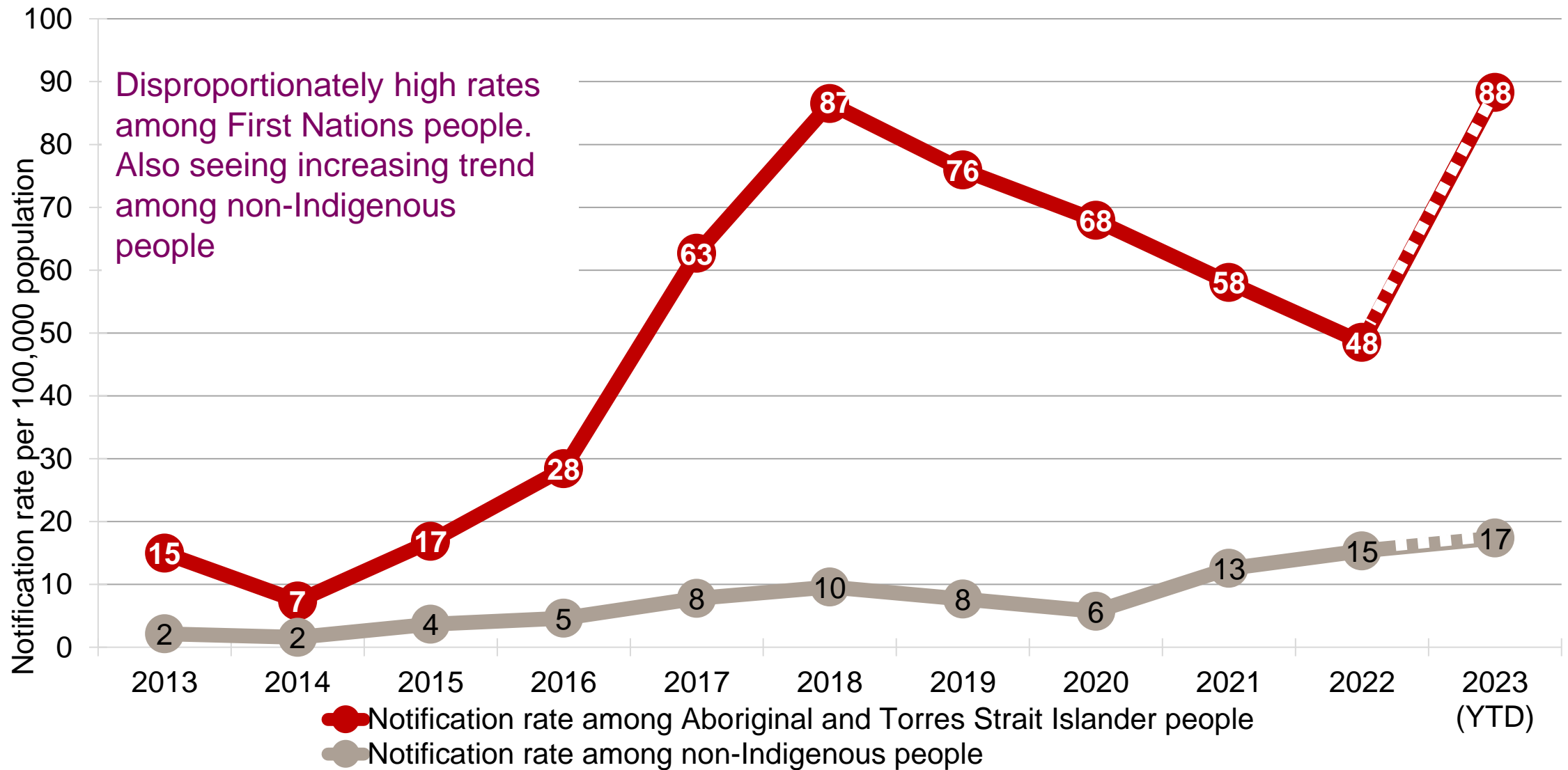


Figure 7: Infectious syphilis notifications among Aboriginal and Torres Strait Islander people, by region of residence, by year, South Australia, 2011 – 2023

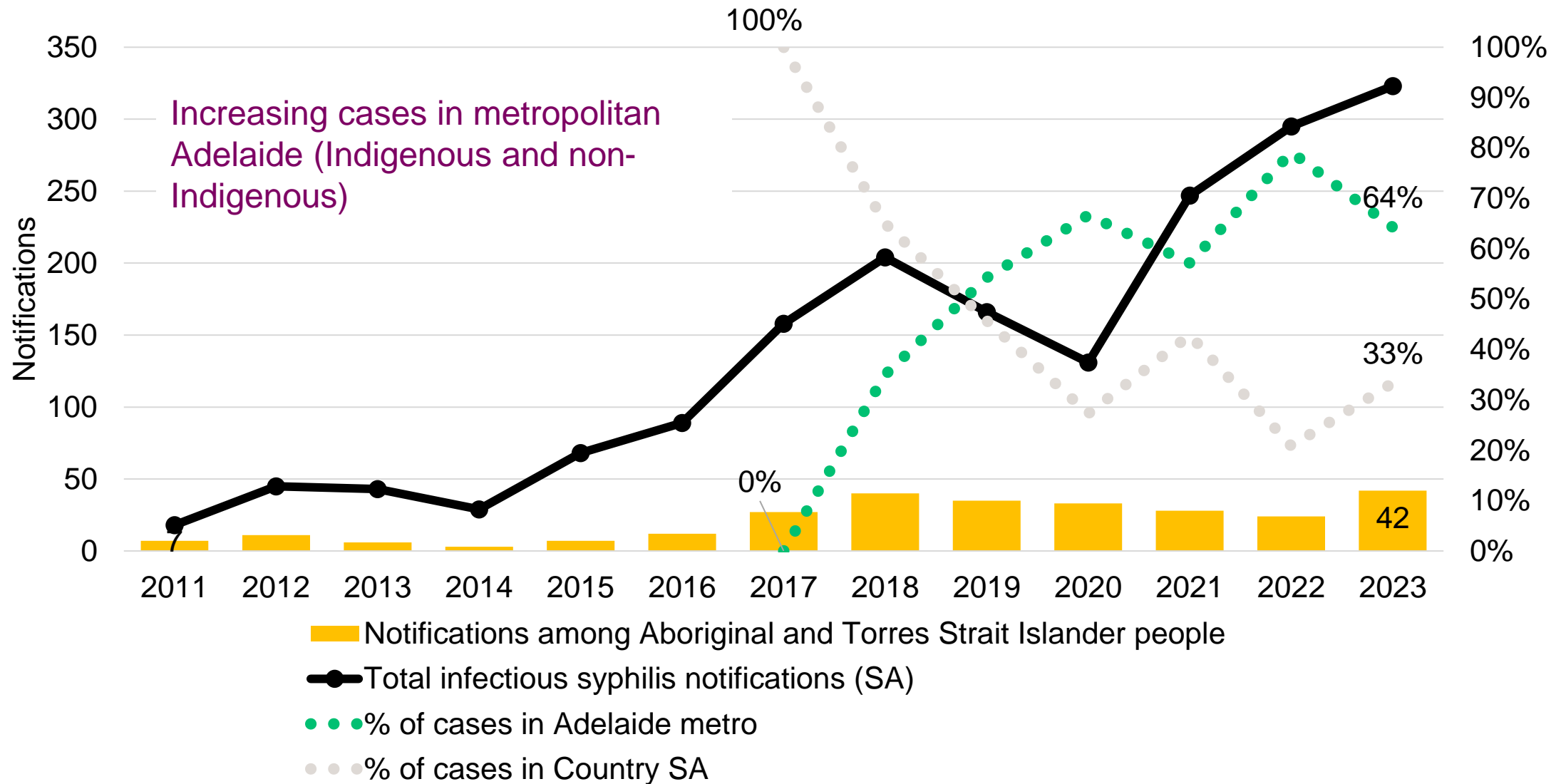


Figure 8: Notifications of infectious syphilis among males, by sexual exposure, South Australia, 2017 to 2023

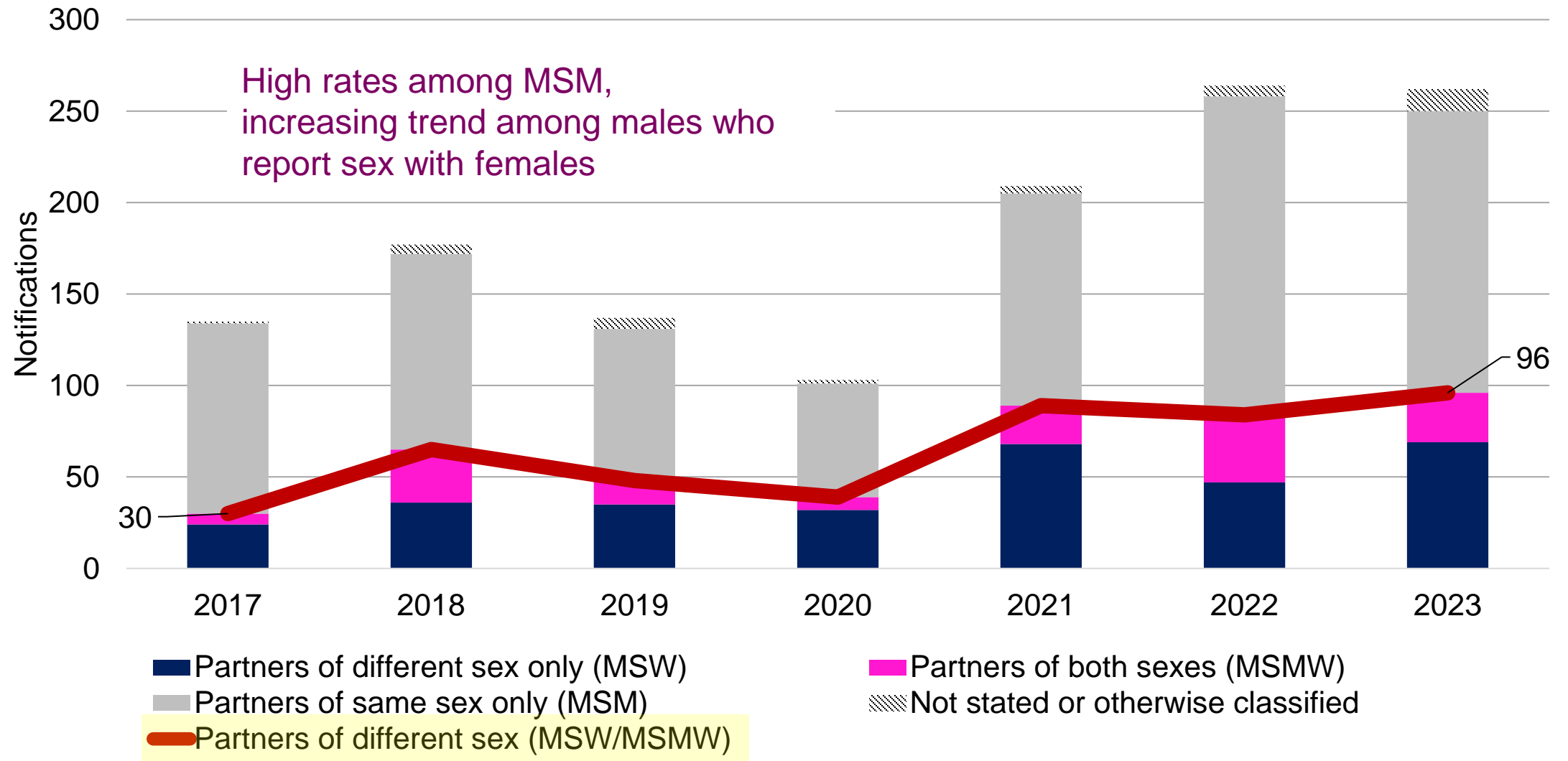


Figure 9: Notifications of infectious syphilis among females, South Australia, 2011 to 2023

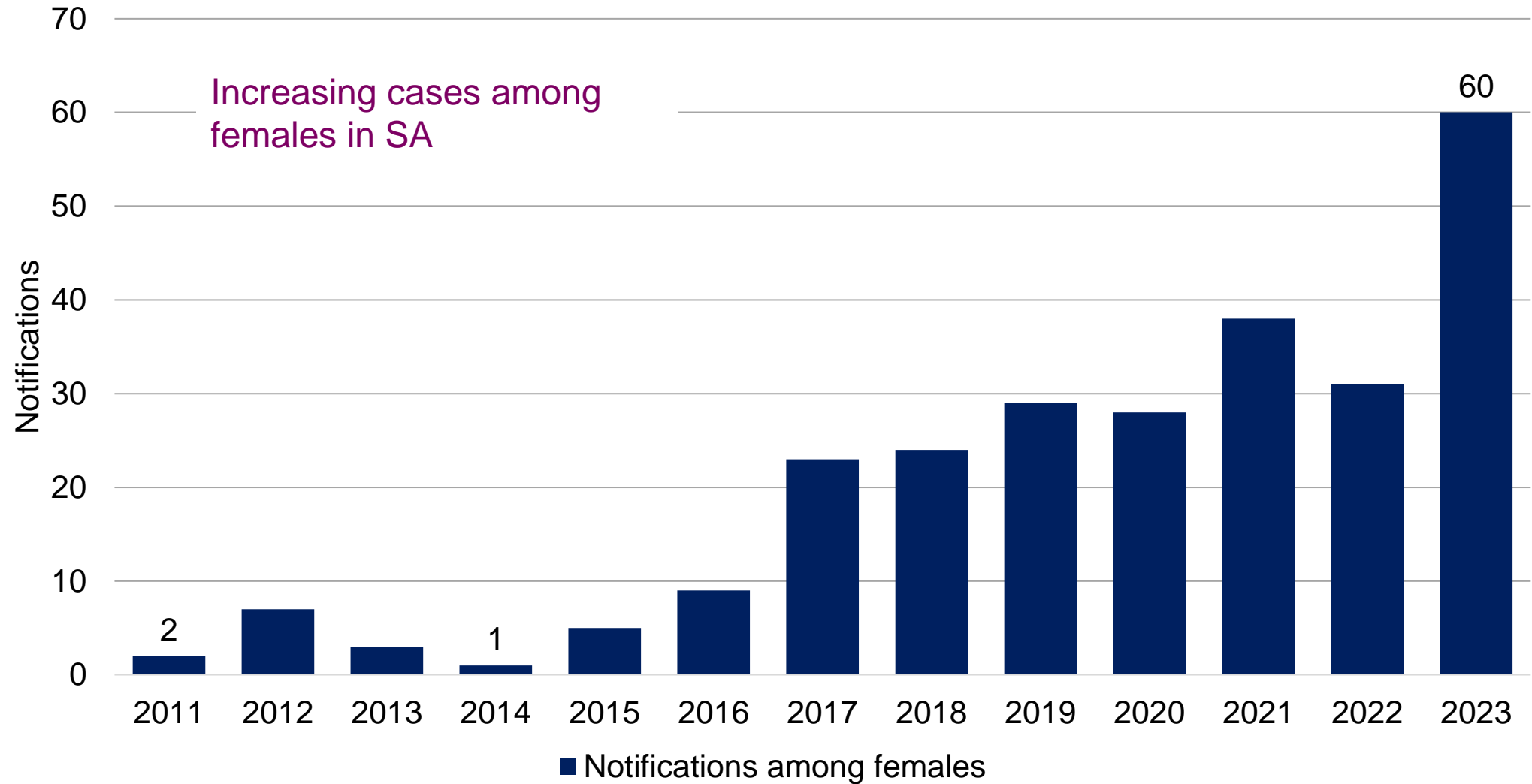


Figure 10: Notifications of infectious syphilis among females, Australia, 2011 to 2023

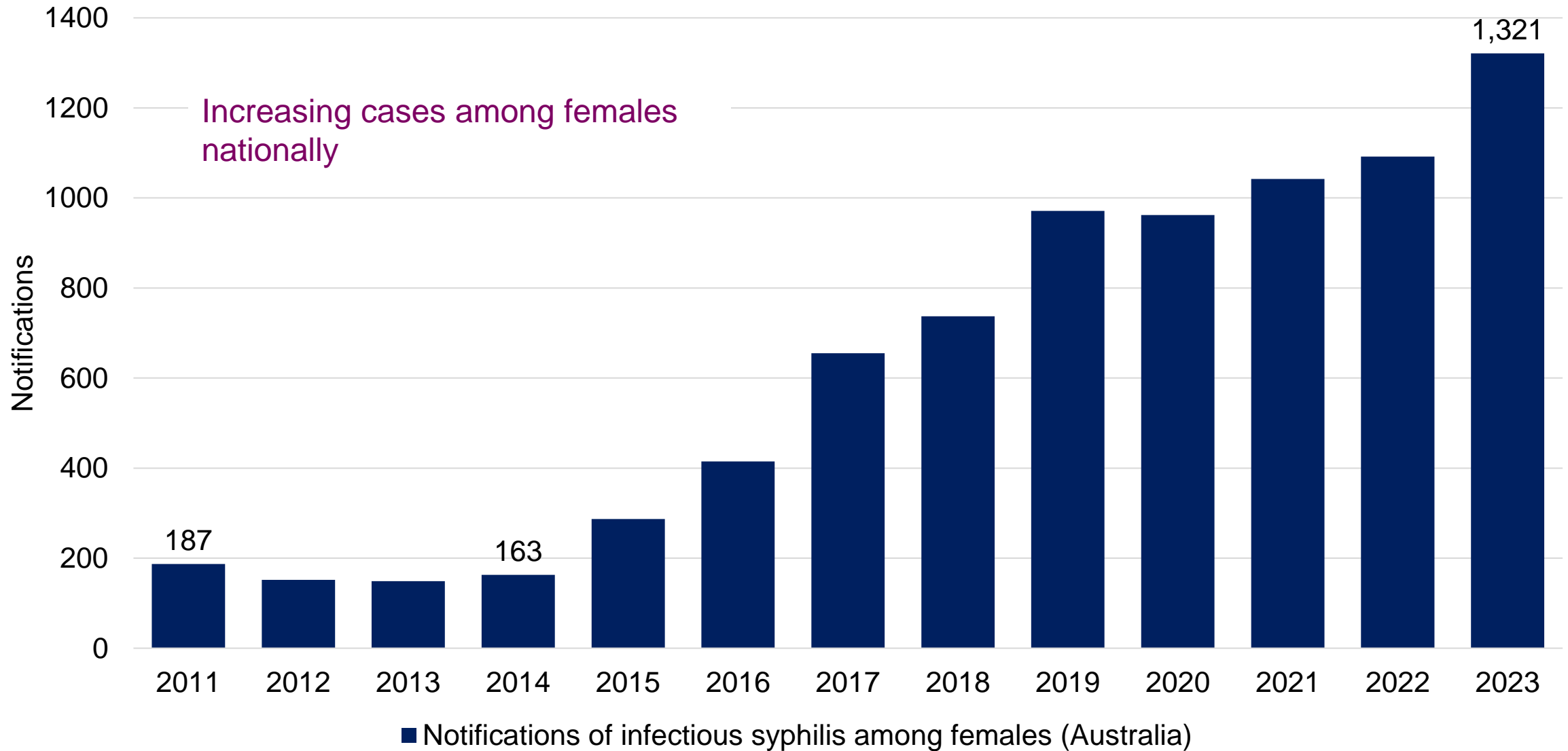
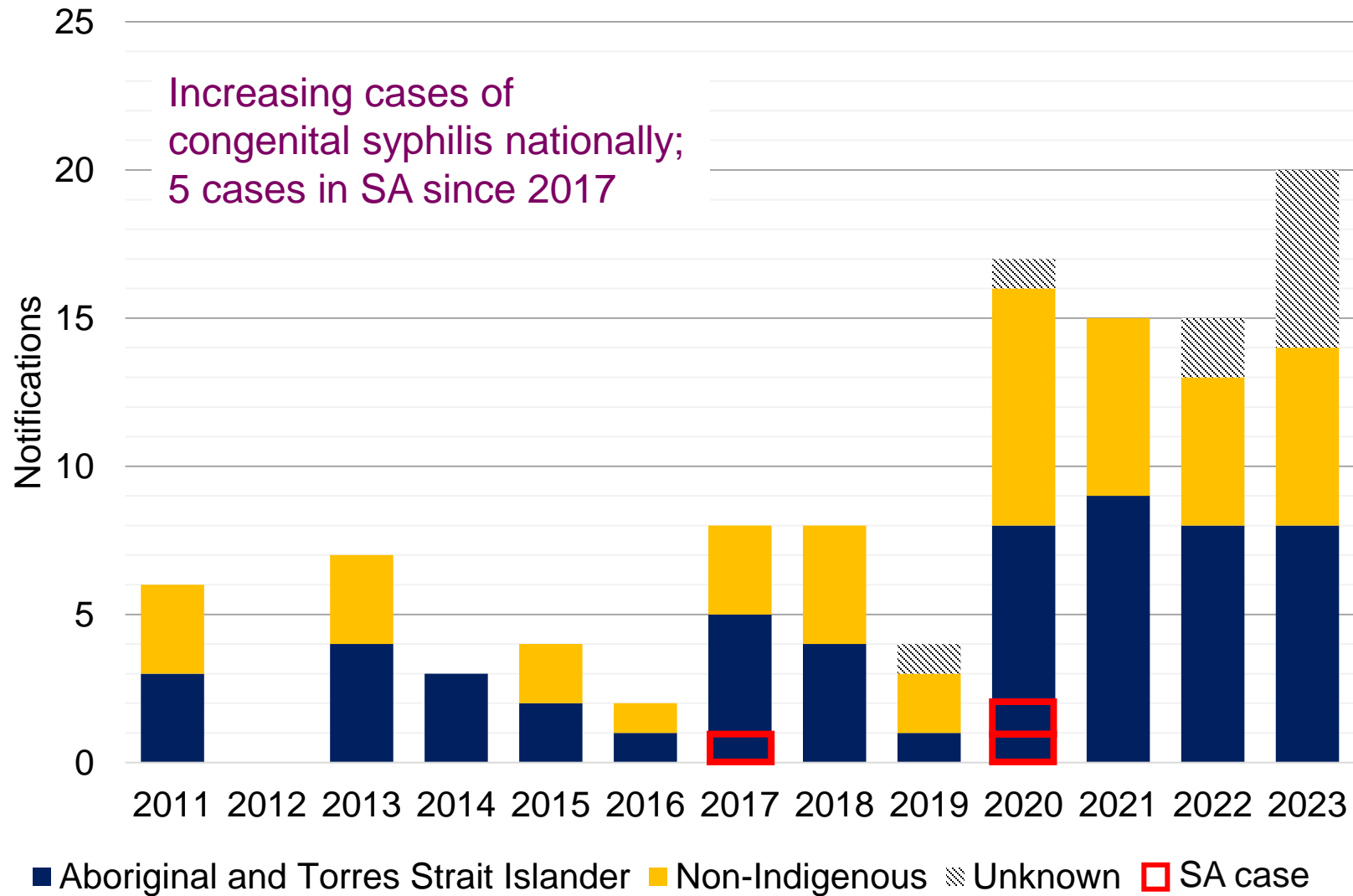


Figure 12: Notifications of congenital syphilis, by Indigenous status, Australia, 2011 to 2023

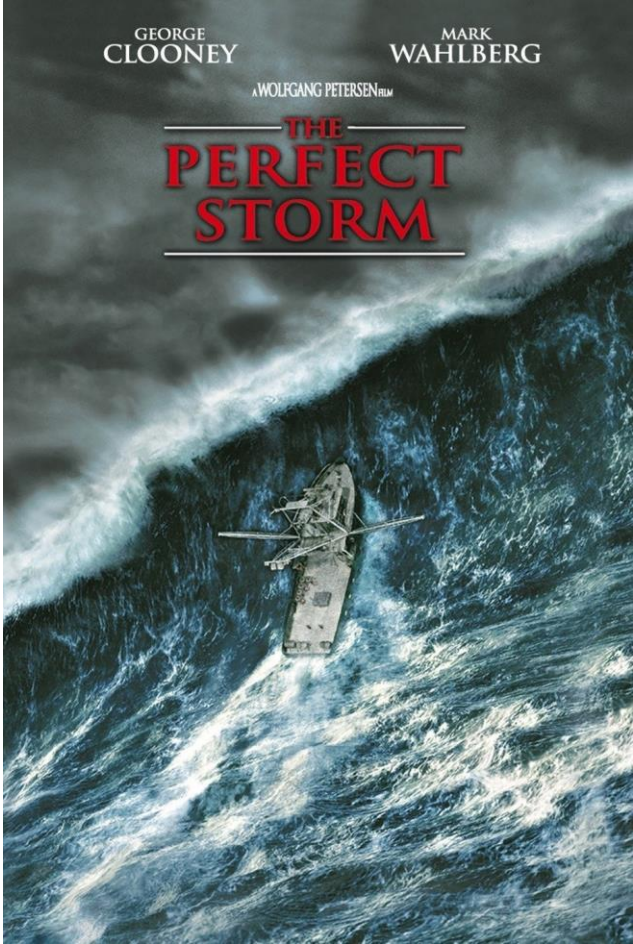
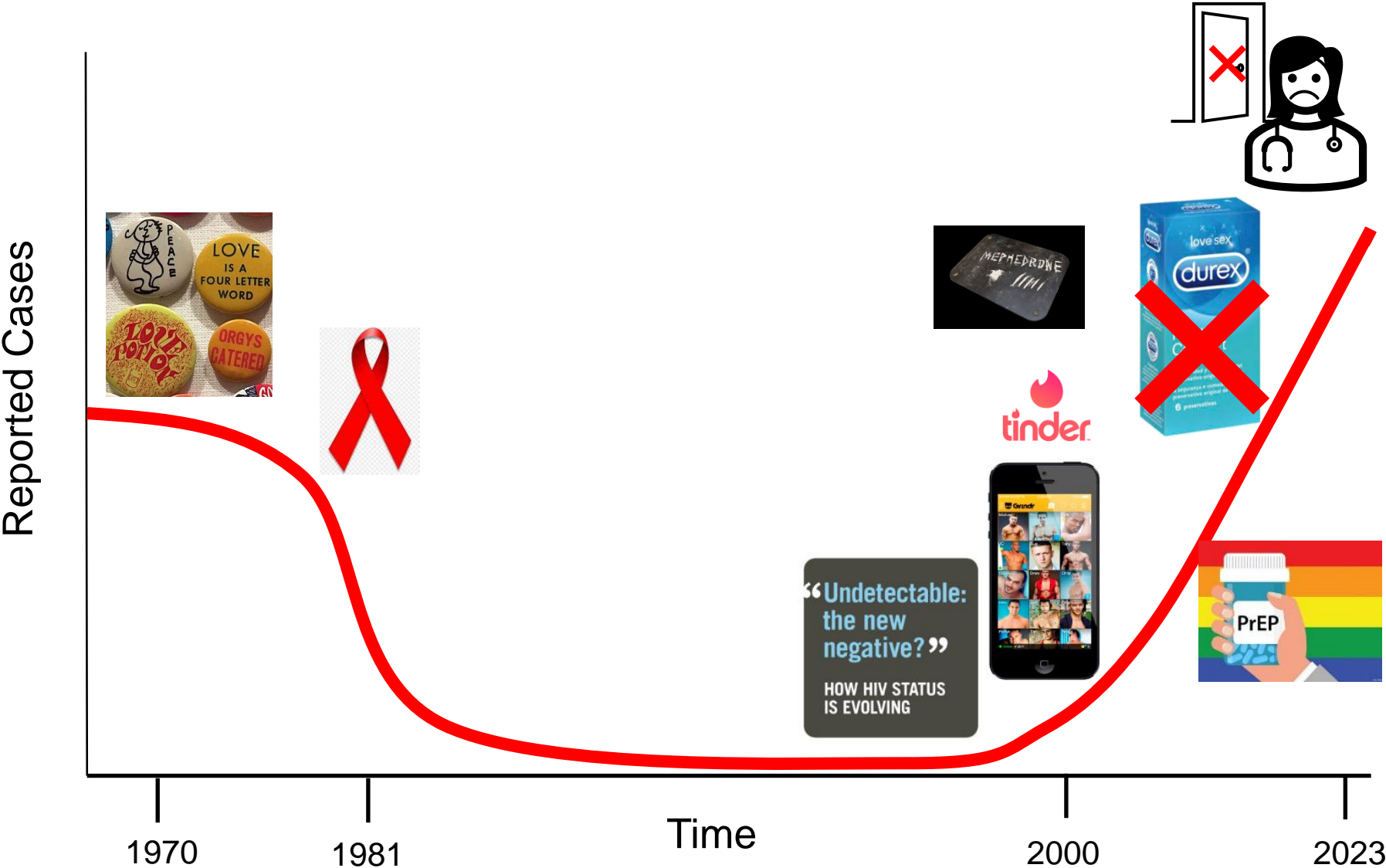


- Syphilis during pregnancy is associated with high rates of premature delivery, congenital abnormalities, infant mortality and severe, permanent disability.
- 36 cases of syphilis in pregnancy reported in SA since 2020 including 13 in 2023.
- 5 cases of congenital syphilis reported in SA since 2017.
- Provision of extensive support to the pregnant parent has been crucial to preventing vertical transmission in some cases.



SA syphilis response overview

The perfect storm: re-emergence of syphilis





What causes STI epidemics to escalate?

1. Probability of transmission per sexual encounter

- Condom use – still important, but...
 - inconsistent and declining across most population groups
 - global trend, and challenging to influence
 - not completely protective.

2. Rate of sexual partner change

- Impact of dating apps on sexual behaviour including mixing between networks
- Increasingly effective HIV prevention playing a role
- *“Reducing the rate of partner change is challenging because, like condoms, reducing partner numbers involves reducing pleasure”*
- Not the role of government to regulate this.

3. Reducing duration of infectiousness

- Requires prompt diagnosis, treatment and sexual partner notification.

What can we do about it?

Reducing time from STI acquisition to treatment (i.e. infectious period) is key to preventing poor outcomes including onward transmission, and the **most viable prevention strategy**.

Syphilis stages

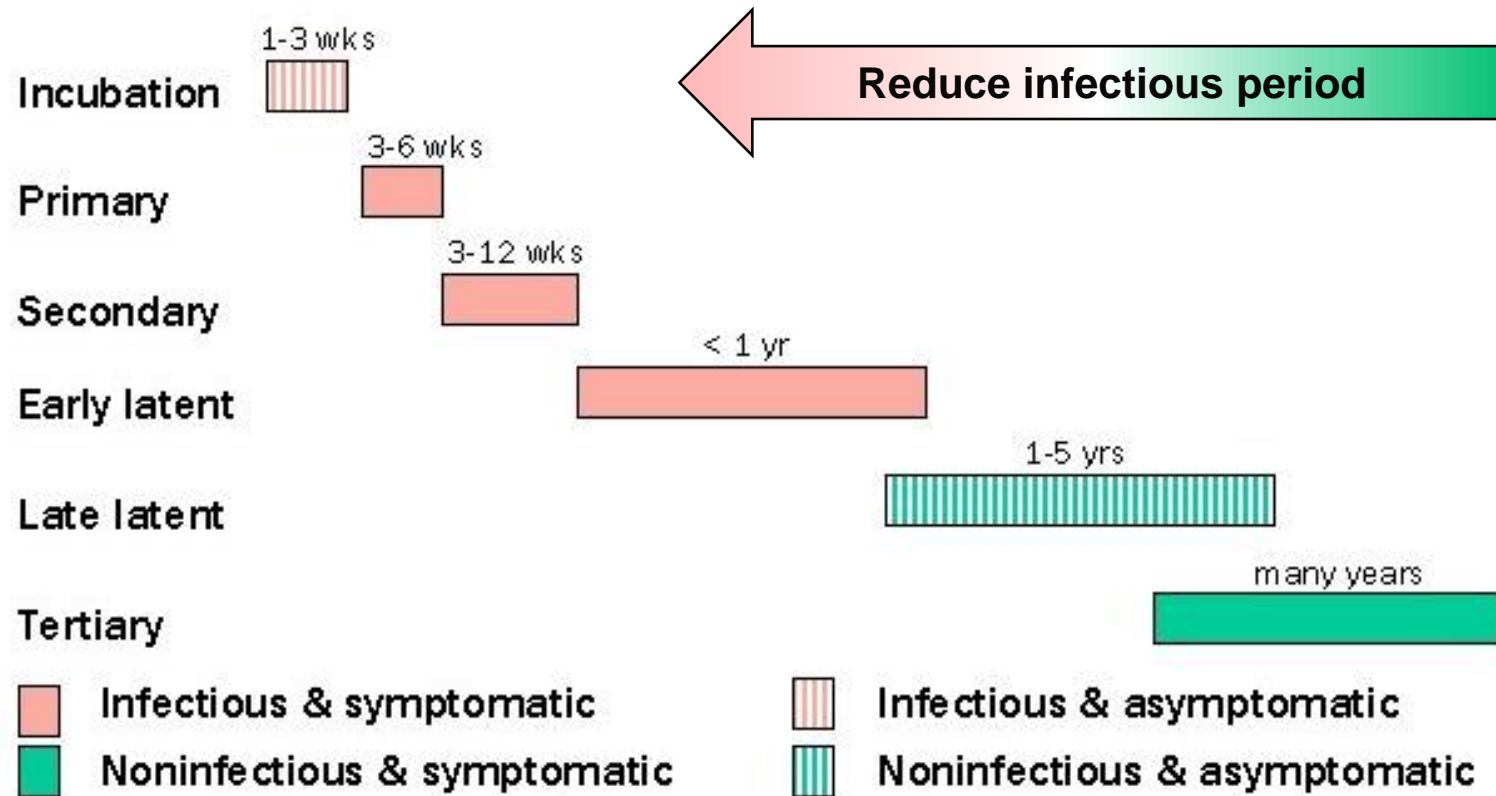
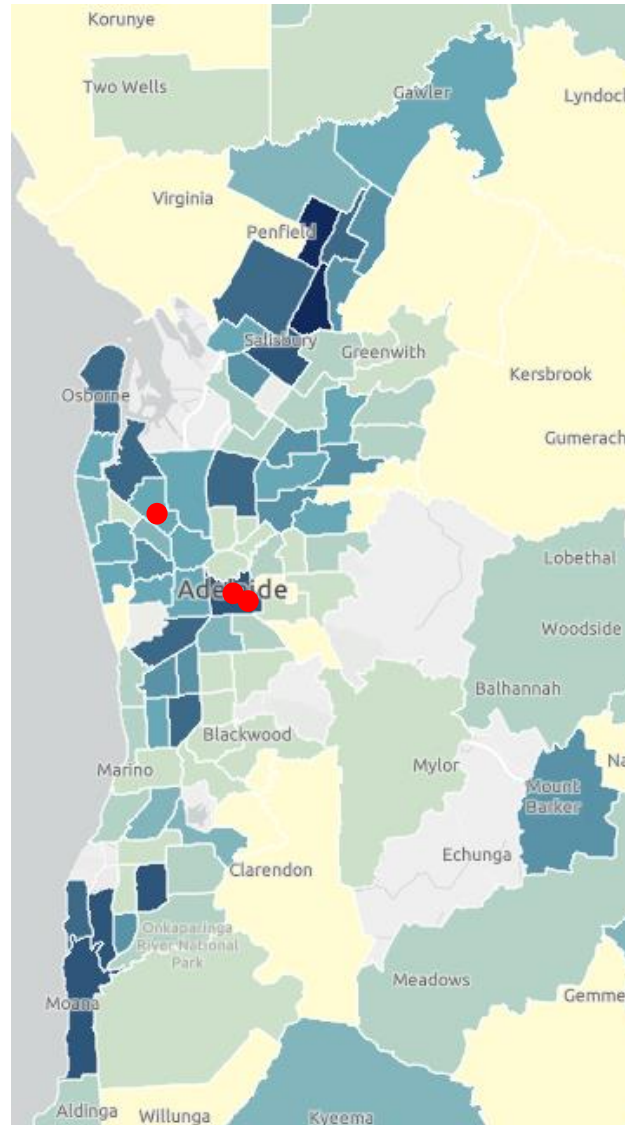


Figure 13: STI related public hospital inpatient admissions by SA2 of residence, South Australia, 2016 to 2022



STI related inpatient admissions

● Location of publicly funded sexual health services

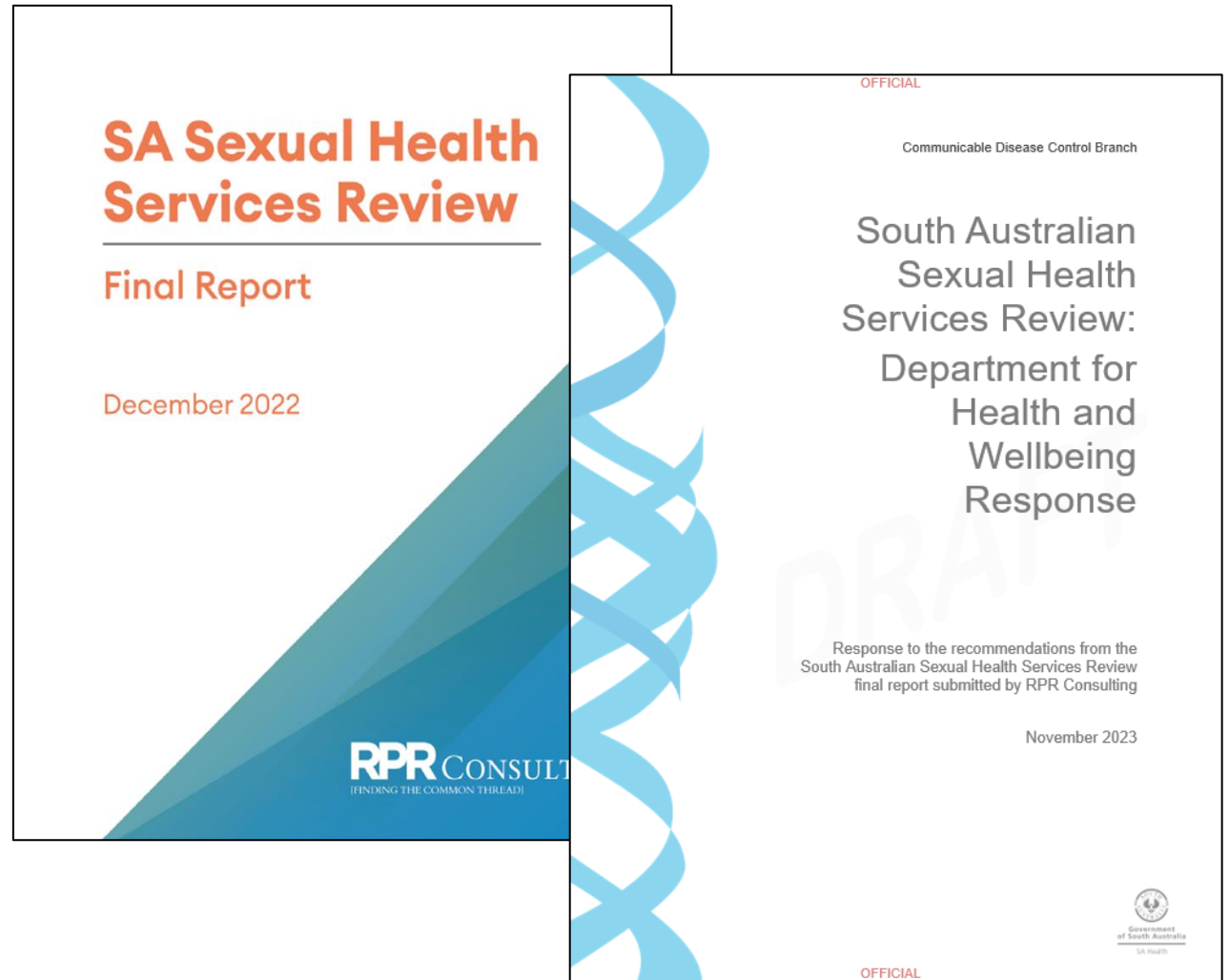
Improving the accessibility of sexual health care across the state is key to containing STI epidemics

Strengthening the sexual health system

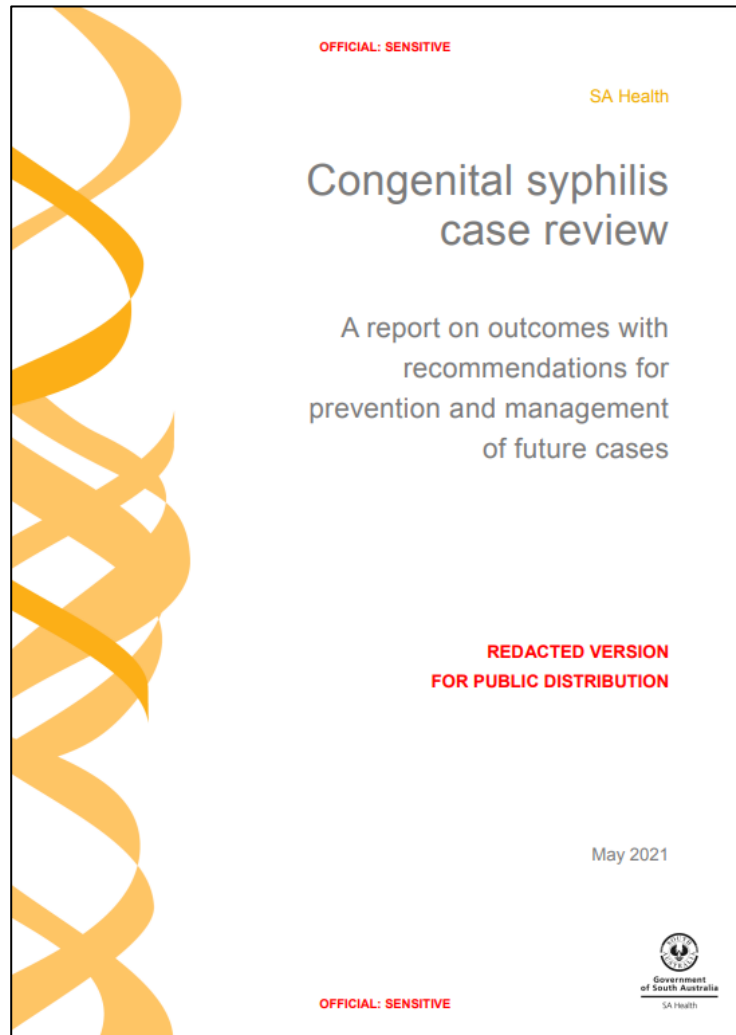
SA's central STI clinic limits service, citing overwhelming demand

LOCAL

UPDATED | Heterosexual people over the age of 25 have been excluded from South Australia's state-wide sexual health clinic for the first time, amid overwhelming demand for the service and the closure of other STI clinics.



Identifying solutions to prevent future congenital syphilis cases





Themes from Australian congenital syphilis cases

Video: Barriers to accessing healthcare during pregnancy for young, pregnant women



**The voices of
young, parenting
women....**

Individual and health system risk factors

- > **Nationally, 114 cases of congenital syphilis were notified from 2011 to 2024.**
- > **64% (73/114) of cases reported since 2020.**
 - Most cases occur among people with **limited or nil antenatal care**
 - 3 in 4 cases (77%) were **diagnosed 'late' in pregnancy** (i.e. less than 30 days prior to delivery)
 - 60% were **diagnosed either on the day of delivery or post birth.**
 - **Infection late in pregnancy** following a negative serology result in the first trimester or re-infection post treatment – emphasises the need for repeat screening.
- Risk factors associated with congenital syphilis are complex and intersecting, most have 1 or more:
 - **Homelessness, mental illness, illicit drug use, family violence, history of incarceration, removal of children, etc.** Around half of cases nationally (and 4 of 5 cases in SA) have been among **Aboriginal or Torres Strait Islander people.**

Health system factors

- > Around 1 in 4 cases occur among people who are engaged in antenatal care (incl. February 2024 SA case). Preventable through strengthening guidelines for antenatal syphilis screening.
- > A range of health system factors identified through analysis of cases nationally related to diagnosis, treatment, access to services/care coordination and partner notification including:
 - Inconsistent clinical guidelines,
 - Testing not ordered per guidelines,
 - patient LTFU
 - patient not identified as at risk
 - test results not communicated to patient
 - clinical error
 - incorrect or incomplete treatment
 - lack of bulk billing clinics
 - out of pocket cost for treatment
 - lack of coordination and integration between providers
 - siloed medical records
 - missed opportunities to test
 - delayed notification to health departments
 - incomplete partner notification,
 - reinfection by untreated partner.

Congenital syphilis prevention – learnings from case reviews


Antenatal care guidelines

- > Risk stratification for repeat antenatal syphilis screening is impractical and problematic.
- > Need to move to universal repeat antenatal syphilis screening.
- > Address root causes of why people don't engage with mainstream antenatal care.

What about the pregnant people who do not present for antenatal care or present late?

- > Multiple complex intersecting factors. Socioeconomic disadvantage and marginalisation.
- > Very small % of all births (1-1.5% in SA).
- > How do we reach them (and their sexual partners)? What services might they be engaging with?
- > Whole of system “no wrong door” approach is key. Role for health services that do not provide antenatal care.

Syndemics

- > Structural determinants  increased vulnerability to poor health outcomes (incl. infectious diseases).
- > Priority populations/equity focus



Proposed forthcoming changes for antenatal syphilis screening in SA & implementation considerations

Challenges with risk stratification for repeat antenatal syphilis screening

- > Risk stratification for repeat syphilis screening during pregnancy is impractical and problematic.
- > There is evidence that this approach has contributed to missed cases of syphilis during pregnancy across Australia.
- > Detailed sexual histories required to assess risk are time consuming and can be challenging to navigate for clinicians and patients alike due to their sensitivity and complexity, the stigma associated with some of these risk factors, and the threat (perceived or real) that disclosure of these risk factors may result in removal of children.
- > In addition to both understanding and being willing to disclose their own risk profile, reviews of congenital syphilis cases in WA and Victoria have highlighted that often the pregnant person is unaware of their partner's behaviours that may be putting them at increased risk of syphilis.

Challenges with risk stratification for repeat antenatal syphilis screening

Our surveys indicate risk-based screening is not effective, as risk is not routinely identified.

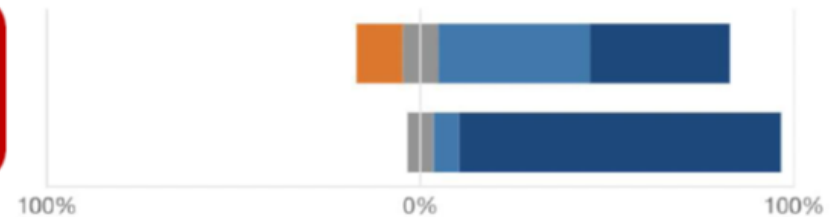
How often do you ask women about the following during routine antenatal care?

Service A

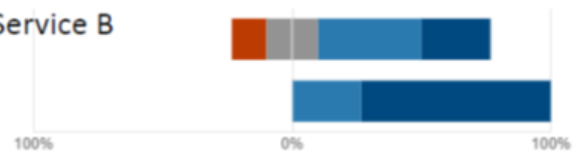
Always Most of the time Sometimes Rarely Never

Number of recent sexual partner/s

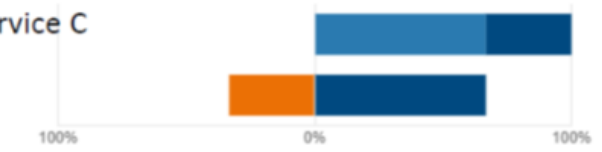
If male sexual partners have sex with other men



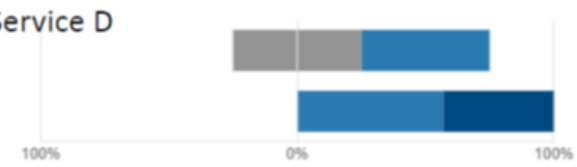
Service B



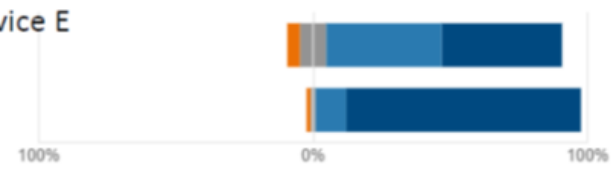
Service C



Service D



Service E



Chen (2024), 'Improving Syphilis Testing and Control' (Unpublished), Melbourne Sexual Health Centre

SAPPG – current

South Australian Perinatal Practice Guideline Syphilis in Pregnancy

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Table 1: Antenatal syphilis screening guidelines, by jurisdiction, Australia

	WA	NSW	Queensland	SA
1st screen	First antenatal visit	First antenatal visit	First antenatal visit	First antenatal visit
2nd screen	28 weeks gestation	26-28 weeks gestation	26-28 weeks gestation	-
3rd screen	36 weeks gestation (or at time of any preterm birth)	-	36 weeks gestation	-
Additional risk-based screening	Refer to guidelines	Refer to guidelines	Refer to guidelines	Refer to guidelines

1. 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
 - o Consider offering a full STI screen including syphilis serology, chlamydia, gonorrhoea and HIV
 - o If there are difficulties taking a detailed history consider offering a full STI check as part of a general health screen.
 - o **This group should be offered an additional syphilis screening at a minimum at:**
 - 28 weeks
 - 36 weeks

2. People who may be impacted by the defined syphilis outbreak areas

- > The current Multijurisdictional Syphilis Outbreak increases the risk for Aboriginal people who reside in, or travel through these areas, of acquiring syphilis.
- > At 2022, outbreak areas included Far North, Eyre and Western regions of SA and metropolitan Adelaide. Further information at: <https://www.sahealth.sa.gov.au/wps/wcm/connect/public/content/sa+health+internet/clinical+resources/clinical+programs+and+practice+guidelines/infectious+disease+control/syphilis/infectious+syphilis+outbreak+in+sa>
- > Enhanced screening is recommended for pregnant people :
 - o Who identify as Aboriginal and/or Torres Strait Islander origin and who reside in, or have travelled through/from an outbreak area
 - o Whose partners identify as Aboriginal and/or Torres Strait Islander people who reside in, or have travelled through/from an outbreak area
- > **The recommendation is for enhanced syphilis screening as follows:**
 - o **First antenatal visit (routine)**
 - o **28 weeks**
 - o **36 weeks**
 - o **At birth**
 - o **6 week post-natal**

The woman should be informed of this recommendation with corresponding documentation in their SA Pregnancy Record

Offer syphilis screening to all women who present in labour with no antenatal care or if investigation results unavailable.

Aboriginal women should be offered or referred to an Aboriginal health professional as soon as practicable to ensure culturally sensitive and appropriate support.

SAPPG – proposed changes

South Australian Perinatal Practice Guideline

Syphilis in Pregnancy

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3rd screen	36 weeks gestation (or at time of any preterm birth)	-	36 weeks gestation	<i>36 weeks gestation (or at time of any preterm birth)</i>
Additional risk-based screening	Refer to guidelines	Refer to guidelines	Refer to guidelines	Refer to guidelines

Additionally, birthing hospitals must not discharge a neonate without confirming that the mother's syphilis status has been documented at least once during pregnancy. If in doubt, maternal syphilis serology should be ordered at birth.



Implementing universal repeat syphilis screening

> Questions for OSC GPs to consider:

- What are the likely benefits to implementing the proposed changes to universal repeat syphilis screening for you and your patients?
- What are the potential challenges to implementing the proposed changes to universal repeat syphilis screening for you and your patients?
- When the proposed changes are approved for implementation, what are the best way/s to communicate the guideline update to OSC GPs? What type of information or support would be beneficial?
- What, if any, information or support will OSC GPs need to help with communicating the guideline change to patients or practice colleagues?

“No wrong door” approach for people not engaged in antenatal care

NSW Health ‘Syphilis in Pregnancy and Newborns’ policy directive

- > Statewide mandatory policy directive introduced in October 2023.
- > All Local Health Districts to develop protocols to ensure pregnant people are offered screening for syphilis and other BBV regardless of which service they present to.

Proposed SA strategy – use digital systems to prompt antenatal syphilis screening

- > Recommendation from statewide STI and BBV advisory committees - explore solutions using Sunrise EMR and other digital systems to prompt syphilis screening whenever a pregnant person presents to any SA Health service.
- > Seeking support within SA Health to prioritise and progress this strategy. CDCB seeking to work in partnership with a range of key stakeholders to design and implement this proposed enhancement.



Syphilis in Pregnancy and Newborns

This Policy Directive outlines the minimum standards for syphilis screening of pregnant women in New South Wales, and the establishment of Local Health District pathways that enable appropriate referrals for assessment and management of syphilis in pregnancy and newborns.



Key messages

1. Think ‘Could it be syphilis?’ (“The Great Imitator”).
2. Increasing risk of congenital syphilis in SA due growing number of cases of syphilis among pregnant people and females of reproductive age.
3. Early diagnosis, treatment, patient education and monitoring during pregnancy and **partner notification and treatment** are key.
4. Congenital syphilis is 100% preventable if detected early enough:
 - Antenatal screening – proposed increased to min. 3 universal screens in every pregnancy in SA
 - Upstream prevention – address epidemic at a population level.
5. Obstetric shared care GPs have a critical role to play.



Information and support for GPs and patients

Information and support is available for GPs and patients.

- Support available from CDCB and Adelaide Sexual Health Centre
- ASHM resources to support clinicians ([Link](#))
- Australian STI Guidelines
- STIBBV NGO sector developing tailored health promotion strategies