



Government of **Western Australia**
Department of **Health**

Public Health Review of Congenital Syphilis Cases in WA Jan 2019 – June 2021: Summary Report

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1. Executive Summary

Infectious syphilis is a notifiable sexually transmissible infection (STI) and is a significant public health concern, predominantly due to the risk of congenital syphilis. In Western Australia (WA), the occurrence of a case of congenital syphilis is a sentinel event and public health reviews for each case of congenital syphilis are conducted for the purpose of health system improvement and preventing future cases. Nine public health reviews have been carried out for eight cases of congenital syphilis and one 'near miss' case notified between Jan 2019 and June 2021. The cases occurred in both regional (six cases) and metropolitan (three cases) public health regions and seven cases were born to Aboriginal women.

The *Public Health Review of Congenital Syphilis Cases in WA Jan 2019 – June 2021: Summary Report* provides an overview of the review process and a synthesis the findings and recommendations from the reviews of these nine cases reviews. It also includes an update on the recent syphilis epidemiology and an outline of the public health response to date. Analysis of the review findings was conducted to identify key themes and potential reasons for the cases of congenital syphilis. The themes have been categorised into regional and metropolitan, as well Aboriginal and non-Aboriginal. A list of recommendations from the public health reviews has also been included in the report.

Findings and common themes:

Metropolitan Themes (three women):

- Infrequent attendance for antenatal care
- All had a negative syphilis test at first antenatal visit and contracted syphilis during pregnancy but were not tested for syphilis at subsequent antenatal care visits.
- Testing for chlamydia and gonorrhoea was done more than once during pregnancy but syphilis tests were not included subsequent to the first antenatal screen.
- History of methamphetamine use, homelessness/unstable accommodation.

Regional Themes (six women):

- Reduced access to health care as local health services had altered their service delivery models.
- Highly transient patients with no clearly identified antenatal care provider.
- Of women attending antenatal care syphilis testing during pregnancy was in accordance with the [WA Silver Book – A guide for managing sexually transmitted infections and blood-borne viruses](#) (Silver Book) recommendations and contracted syphilis during pregnancy.
- First presentation for antenatal care in the second or third trimester.

Aboriginal Women Themes (seven women):

- Concealed pregnancies (defined as a woman who knew she was pregnant and did not present for antenatal care or inform a healthcare professional of their pregnancy status).
- Presentations in labour with no antenatal care.
- Previous children are under the care of Department of Child Protection and Family Support Services (DCPFSS).
- Complex social issues; i.e. family and domestic violence, family substance use issues, and sexual assault.

These reviews have highlighted the inequity in access to healthcare which is being experienced between Aboriginal and non-Aboriginal Western Australians. These case reviews suggest that the model of antenatal care that currently exists is not adequate to prevent congenital syphilis even if the Silver Book guidelines for syphilis testing in pregnancy are implemented. Although the recommended increased syphilis testing for all pregnant women is likely to improve timeliness of syphilis diagnosis and treatment in women presenting for antenatal care, it does not address the

issues of women not presenting for antenatal care or moving so frequently between addresses and antenatal care providers that follow-up of a positive syphilis test is critically delayed. Alternative models need to be explored in consultation with Aboriginal women and key stakeholders to ensure that pregnant women can access comprehensive and culturally safe primary health care services that include provision of holistic antenatal care.

2. Introduction

Infectious syphilis is a notifiable sexually transmissible infection and is a significant public health concern in Western Australia (WA), predominantly due to the risk of congenital syphilis. WA has experienced a marked increase in syphilis notifications over recent years which has also included cases of congenital syphilis. This has resulted in a targeted and comprehensive response at both state-wide and local levels. One component of this response has included public health reviews of the congenital syphilis cases (reviews).

This report will provide an overview of the congenital syphilis public health reviews, including a description of the process and a summary of both the findings and recommendations. It will also include an update on the recent syphilis epidemiology and an outline of the public health response to the congenital cases.

It is important to note that the information included in the report relates to the public health reviews of eight cases of congenital syphilis and one near miss notified between Jan 2019 and June 30 2021.

2.1 Overview of syphilis epidemiology and antenatal syphilis testing in WA

There has been an ongoing infectious syphilis outbreak affecting Aboriginal people in regional and remote Northern and Central Australia primarily in people aged 15 to 34 years. The outbreak began in northern Queensland in 2011 and reached the Northern Territory in 2013. The outbreak moved into the Kimberley region in mid-2014 with related clusters identified in mid-2018 in the Pilbara region and the Goldfields in mid-2019. In mid-2020 the Chief Health Officer authorised a state-wide public health response to infectious syphilis in identified at-risk populations after increasing syphilis notifications in the Perth metropolitan area and South West region, the majority of which were not epidemiologically linked to the Kimberley, Pilbara or Goldfields.

From 2014 to 2020, the annual number of infectious syphilis notifications increased from 93 to 723 in WA (Figure 1), 11 to 100 in the Kimberley, 0 to 80 in the Pilbara, 4 to 27 in the Goldfields, 75 to 465 in metropolitan Perth and 0 to 18 in the South West. Over the same time period, the number of pregnant women diagnosed with infectious syphilis each year also increased from one to 33 (Figure 2). Characteristics of the 71 pregnant cases from January 2019 to June 2021 are detailed in Table 1.

Figure 1 Number of infectious syphilis notifications, WA, January 2014 to 30 June 2021

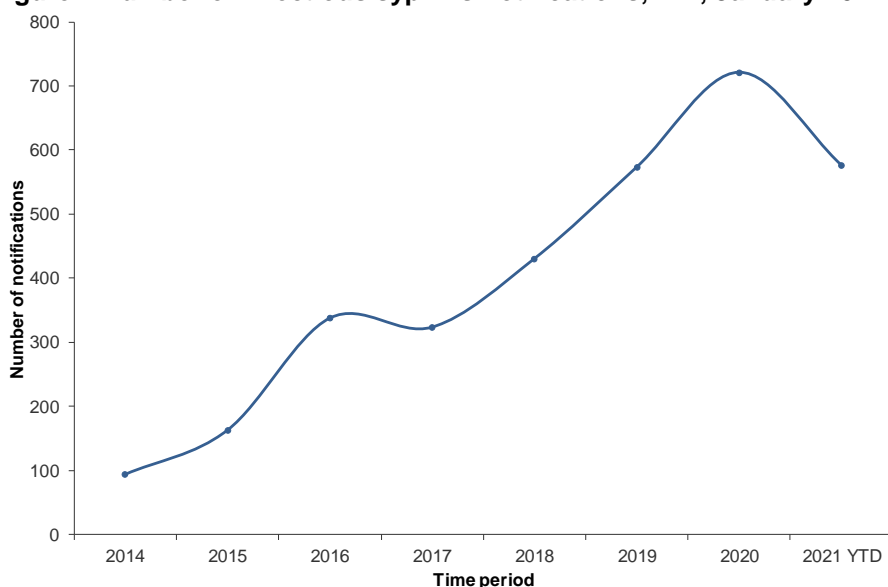


Figure 2 Number of infectious syphilis notifications among females by pregnancy status and area, WA, January 2014 to June 2021

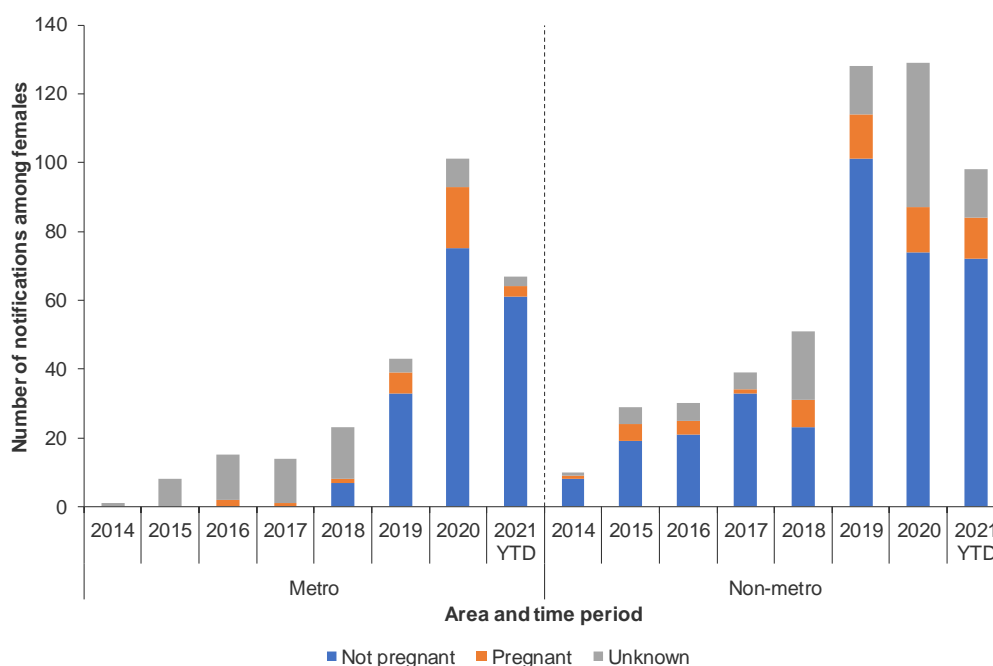
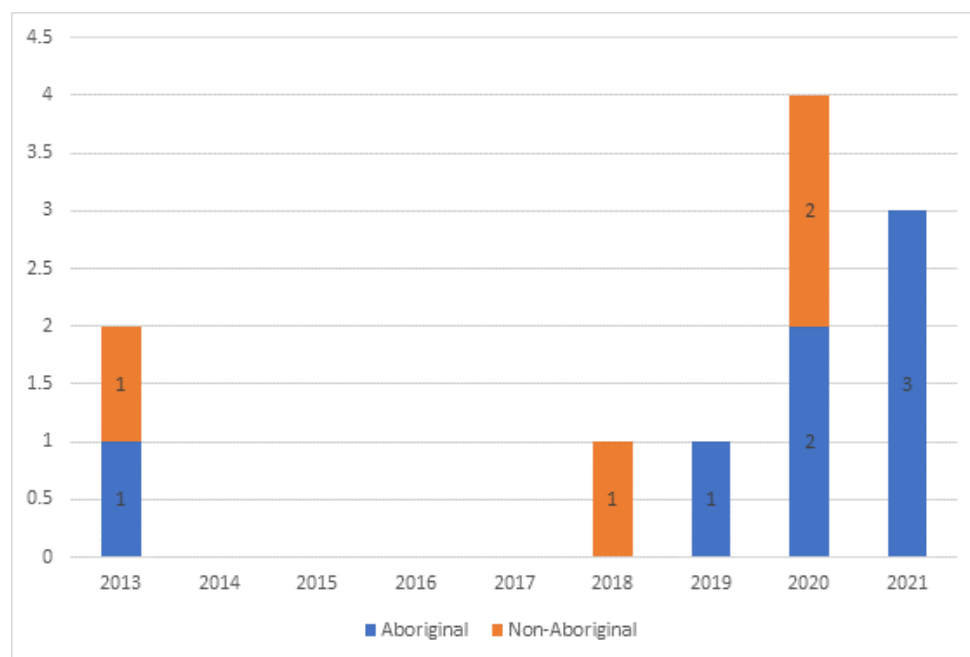


Table 1 Characteristics of pregnant women diagnosed with infectious syphilis, WA, January 2019 to June 2021

Characteristics	Number	Percent
Aboriginality		
Aboriginal	48	68%
non-Aboriginal	23	32%
Country of birth		
Australia	65	92%
Overseas	6	8%
Area of residence		
Metro	27	38%
Non-metro	44	62%
Gestation at diagnosis		
Median (weeks)	16	-
Range (weeks)	4 to 37	-

From January 2019 to June 2021, there were eight congenital syphilis notifications born to mothers aged from 20 to 31 years. Of these eight congenital syphilis cases, two were stillbirths (one in 2020 and one in 2021). Of the six live births, three were term babies, three were pre-term (born at 26, 28 and 36 weeks).

Figure 3 Number of congenital syphilis notifications by Aboriginal status and year, WA, January 2013 to June 2021.



All public maternity services within WA Health use the application, STORK, to report mandatory perinatal notification data to the Midwives Notifications System. STORK enables midwives in the Kimberley, Pilbara and Goldfields regions to record the number of syphilis tests a woman had during her pregnancy, whether she was tested for syphilis at the time of delivery and whether she was referred to a follow-up syphilis test at the six-week postnatal check. A WACHS policy was written to support and require midwives to complete these data entry requirements as soon as possible after delivery. STORK data are used to assess the completeness of antenatal syphilis testing of Aboriginal women in these WACHS regions. From January to June 2021, the majority of Aboriginal women in these regions were tested for syphilis at the first antenatal visit or booking. Just over one-third of pregnant women had a total of three syphilis tests during their pregnancy, but few received all five antenatal and post-natal tests recommended in the Silver Book (Table 2 and Table 3).

Table 2 Number and proportion of antenatal syphilis tests among Aboriginal women by region and time of test from 01 January 2021 to 30 June 2021

Region	No. of pregnant women	No of tests										No. of pregnant women with no treponemal tests	
		At booking		At week 28		At week 36		At birth		At post-natal follow-up			
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Goldfields	53	48	90.6%	35	66.0%	38	71.7%	21	39.6%	0	0.0%	0	0.0%
Kimberley	163	153	93.9%	114	69.9%	129	79.1%	43	26.4%	4	2.5%	0	0.0%
Pilbara	71	56	78.9%	39	54.9%	39	54.9%	12	16.9%	1	1.4%	0	0.0%
Total	287	257	89.5%	188	65.5%	206	71.8%	76	26.5%	5	1.7%	0	0.0%

Table 3 Total number and proportion of antenatal syphilis tests among Aboriginal women by region from 01 January 2021 to 30 June 2021

Region	Total no. of tests												Total
	0		1		2		3		4		5		
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Goldfields	0	0.0%	9	17.0%	11	20.8%	18	34.0%	15	28.3%	0	0.0%	53
Kimberley	0	0.0%	28	17.2%	32	19.6%	72	44.2%	29	17.8%	2	1.2%	163
Pilbara	0	0.0%	24	33.8%	23	32.4%	22	31.0%	2	2.8%	0	0.0%	71
Total	0	0.0%	61	21.3%	66	23.0%	112	39.0%	46	16.0%	2	0.7%	287

2.2 WA Syphilis Outbreak Response Group

The WA Syphilis Outbreak Response Group (WA SORG) was formed in August 2018 and is responsible for coordinating a state-wide response to the increasing notifications of infectious syphilis that are being experienced in WA. The group is chaired by the Director of the Communicable Disease Control Directorate (CDCD) and the Public Health Medical Officer of the Aboriginal Health Council of WA (AHCWA).

The aim of the WA SORG is to control the outbreak of syphilis among communities and eliminate congenital syphilis in WA using partnership strategies that, wherever possible, are applicable to the sustainable control measures for STIs and promotion of sexual health in WA communities.

The WA SORG developed the *Western Australian Syphilis Outbreak Response Action Plan* (the Action Plan) following a state-wide consultation with key stakeholders in November 2018. The Action Plan was launched by the Minister for Health in Broome in July 2019. An accompanying monitoring framework has also been developed.

There are five priority areas in the Action Plan. These include:

- prevention, education and community engagement
- workforce development
- testing, treatment and contact tracing
- surveillance and reporting
- antenatal and postnatal care.

Working Groups were established to progress the strategies outlined in the Action Plan according to each priority area. The Antenatal and Postnatal Care working group and the Surveillance and Reporting working group continue to meet regularly.

Local Syphilis Outbreak Response Teams (SORTs) have also been activated in the following regions:

- Kimberley
- Pilbara
- Goldfields
- South West
- Perth Metropolitan

At-risk populations in the following outbreak regions include:

- Goldfields, Kimberley and Goldfields – Aboriginal people
- South West – young Aboriginal and non-Aboriginal heterosexual people, people who use methamphetamine and/ or inject drugs, men who have sex with men (MSM) and women who have sex with MSM.

- Metropolitan area – young Aboriginal and non-Aboriginal people, people experiencing homelessness, people who use methamphetamine and/ or inject drugs, culturally and linguistically diverse people, MSM and women who have sex with MSM.

The SORTs have their own actions plan that closely align to the state-wide action plan to guide their local responses to the syphilis outbreaks.

A *WA Syphilis Outbreak Response Action Plan Annual Report 2019-20* was developed to provide an overview of the syphilis epidemiology, WA SORG activities and progress made against the Action Plan in the 2019–20 financial year. This report is available on the WA Syphilis Outbreak Response [site](#).

3. Case Reviews

The case reviews were guided by the *Guidelines for public health review of congenital syphilis case* (the Guidelines). This section will provide a high-level summary of the processes involved. The full version of the Guidelines is available in Appendix 1.

3.1 Overview

The occurrence of a case of congenital syphilis is a sentinel event reflecting potential missed opportunities for prevention in the public health, antenatal and primary health care systems. Therefore, it is important to review each case of congenital syphilis for the purpose of health system improvement and preventing future cases.

The purpose of the public health review process is to:

- Review the clinical and public health management of a congenital syphilis case
- Identify areas for health service improvement
- Identify need, if any, to update relevant clinical and public health guidelines
- Raise awareness and educate health care staff about syphilis.

The process of undertaking a public health review of each congenital syphilis notification or near miss was established in 20149. This was prompted by the notification of two congenital syphilis cases between November 2018 and March 2019 after four years of zero notifications.

3.2 Case Review Methodology

Activation

The public health unit should activate the review process upon receipt of a notification of congenital syphilis. The responsible public health unit is determined by the mother's residential address. The review should be conducted in the form of a formal meeting within eight weeks of notification of a confirmed or probable case of congenital syphilis to ensure that the event is still fresh in people's memories.

Participants

A chairperson, who is a consultant physician, and a secretariat are assigned for the review. Other people that may be involved include:

- Primary health care providers involved in antenatal care of the case's mother or who provide antenatal care in the mother's usual place of residence.
- Obstetric and infectious disease care providers involved in the mother's management.
- Paediatric care providers involved in the case's management.

- Other service providers involved in the management of the case or the case's mother or whom the case or the case's mother was referred to, e.g. Department of Child Protection and Family Support.
- Public health unit staff involved in contact tracing/partner notification.
- Heads of units/departments involved in any aspect of the case's, or the case's mother's, clinical or public health management.
- WA Department of Health (DoH) CDCD staff involved in disease notification and classification for public health reporting purposes.
- Clinical risk management and quality improvement staff in the health service/s responsible for the mother's antenatal care and mother's and baby's care at time of delivery. If the case or case's mother is Aboriginal or from a culturally and linguistically diverse background, appropriate health practitioners and/or liaison offers.
- Specialist obstetric, paediatric, midwifery, public health laboratory and other relevant experts not involved in public or clinical management of the case or case's mother, as appropriate.

Content

A range of information is collated and prepared for the review including:

- A timeline of events
- Medical records
- Syphilis epidemiology relevant to the case

In addition, the following points are discussed during the case review meeting:

- Timeframes and locations of antenatal care.
- Adherence with testing guidelines as per the [WA Silver Book – A guide for managing sexually transmitted infections and blood-borne viruses](#) (Silver Book) and the *National Pregnancy Care Guidelines*.
- Gestation at diagnosis and interval between diagnosis and treatment.
- Interval between treatment of the mother and the baby's delivery.
- Timeliness of contact tracing, as well as testing and treatment of named contacts.
- Follow-up care and repeat testing.
- Management of the baby in accordance with current best practice guidelines.
- Infection control guidelines.
- Aspects of the care and management of the mother and baby were done well and what could be improved.
- Possible prevention measures.
- Actions that need to be taken to prevent future cases of congenital syphilis and ensure best practice management.
- Justification for or against investigating the case as a clinical incident.

Action Plan

The final component of the case review process is forming conclusions and developing an action plan which details responsibilities and timeframes.

3.3 Analysis of Public Health Reviews

In analysis of the public health reviews, themes have been identified as probable contributing factors for the occurrences of congenital syphilis. This report draws information from nine case reviews (eight congenital syphilis cases and one near miss) that have occurred from May 2019 to July 2021. This report refers to a small number of incidents and so attributing cause to a singular problem is not possible. These cases have surfaced the complexities that demonstrate multiple impacting factors, including social factors and in some cases the healthcare that the mothers

received. This report identifies and describes the thematic consistencies across the pregnancies. Some of these themes are specific to a regional experience, some are specific for the metropolitan context and some are specific for the babies born to Aboriginal women.

3.4 Findings

These case reviews highlighted how different the circumstances were that these women were experiencing. What is suggested by these reviews is that Aboriginal women and non-Aboriginal women experiencing complex social issues are at increased risk of contracting syphilis before and during pregnancy. The majority of cases had unstable housing during their pregnancy which has disrupted continuity of antenatal care either because it resulted in them infrequently attending care or because they attended multiple services. The remainder of the women did not attend antenatal care at all.

Metropolitan area themes (three women):

- The women infrequently attended antenatal care or attended multiple services for antenatal care and had no clearly identified antenatal care provider. Both situations resulted in a disruption to their continuity of care.
- All women had multiple 'did not attend' (DNA) appointments with antenatal care providers
- All women had a negative syphilis test at first antenatal visit and contracted syphilis during pregnancy but were not tested for syphilis at subsequent antenatal care visits. Two of the women were retested throughout pregnancy for chlamydia, gonorrhoea and HIV but syphilis was not included the second or subsequent times.
- Two of the women disclosed a history of methamphetamine use.
- One of the women was experiencing homelessness.

Regional Themes (six women):

- Two of the pregnant women had reduced access to services as local health services had ceased service delivery in the community setting.
- Two women were highly transient and either infrequently attended antenatal care or attended multiple services for antenatal care resulting in no clearly identified antenatal care provider. These service providers were a combination of Aboriginal Community Controlled Health Organisations (ACCHOs) and public funded health services and were across multiple regions.
- Two of the six women received syphilis testing during pregnancy that was in accordance with Silver Book recommendations and contracted syphilis during pregnancy. Three of women did not attend any antenatal care and therefore could not be tested according to Silver Book recommendations. One woman presented to a health service suspecting she was pregnant. The appropriate first visit antenatal screening tests were done and syphilis was detected. However, despite being notified numerous times she did not present for treatment until she presented in labour at 26 weeks.

Aboriginal Women Themes (seven women):

- Two women appeared to conceal their pregnancy (defined as a woman who knew they were pregnant but did not tell healthcare professionals).
- Four women presented in labour with no history of antenatal care, although one of these women did have basic antenatal care given while presenting to the emergency department for non-related issues.
- Two women had previous children under the care of DCPFSS.
- Three women were experiencing complex social or other medical issues i.e. foetal alcohol spectrum disorder (FASD), family and domestic violence, family substance use issues, sexual assault resulting in the pregnancy.

3.5 Recommendations

The following recommendations were made by the case review committees. To facilitate implementation, these recommendations were classified into one of the five priority areas (1. prevention, education and community engagement; 2. workforce development; 3. testing, treatment and contact tracing; 4. surveillance and reporting; 5. antenatal and postnatal care) of the WA SORG Action Plan.

Prevention Education and Community Engagement		
<i>Recommendation</i>	<i>Status</i>	<i>Comments or explanation if recommendation not actioned</i>
1. Consultation with communities to ensure culturally secure and culturally sensitive antenatal care is being offered	Commenced	Refer to 4.1 and 4.2
2. Include one-on-one education to pregnant patients about the risks of contracting STIs during pregnancy.	Ongoing	Refer to 4.2
Workforce Development		
<i>Recommendation</i>	<i>Status</i>	<i>Comments</i>
3. Increase awareness of syphilis testing recommendations for pregnant women and management of syphilis to primary care providers, emergency department healthcare workers, obstetricians, gynaecologists and neonatologists	Ongoing	Refer to 4.3
4. Increase knowledge of management of congenital syphilis among maternity services.	Ongoing	Refer to 4.3
5. Increase antenatal providers' knowledge of STI and BBV risk assessment tools and testing recommendations and normalise the taking of sexual health risk assessment at 28-week antenatal visits.	Ongoing	Refer to 4.3
6. Increase the workforce within public health units to respond to syphilis. Positions need to be funded to connect, support and engage antenatal services with marginalised people.	Not actioned	A joint submission to state treasury for increased resourcing is being sought for 2022-26 in partnership with WA Country Health Service (WACHS) and Metropolitan Communicable Disease Control (MCDC). Completion of this action depends on the outcome.
Testing, Treatment and Contact Tracing		
<i>Recommendation</i>	<i>Status</i>	<i>Comments</i>
7. Syphilis point-of-care testing to be available in maternity services.	Ongoing	Refer to 4.4
8. Increase accessibility to healthcare in remote communities by expanding the scope of practice of existing local health service provider and workforce.	Ongoing	Refer to 4.4

9. Increase the number and frequency of health services that provide health care to remote communities. This is particularly important to ensure women can access regular antenatal care.	Not actioned	There are multiple factors that need to be considered: <ul style="list-style-type: none"> • Current remit of services in the regions, ie. Can they expand without risking a lack of service provision to other communities? • Financial costs of increasing services remit to include additional communities.
10. Increase outreach and mobile services that offer opportunistic testing for high risk communities and populations.	Commenced	Refer to 4.3
11. Increase knowledge and awareness of clinicians involved in birthing of the need to request a polymerase chain reaction (PCR) syphilis test on the placenta.	Commenced	Refer to 4.3
12. Coordinated care between agencies for high risk pregnant women.	Ongoing	Refer to 4.6
13. Have a formal handover between regional public health units when patients, particularly pregnant patients, move to a different region. Ensure that relevant information is shared with services involved in the healthcare of the person.	Not actioned	Preliminary meetings between CDCD, WACHS and MCDC have occurred to discuss a protocol to complete this recommendation. Due to reduced capacity this is yet to be actioned and a protocol is yet to be created.
14. Serology of high-risk pregnant women should be taken at birth.	Ongoing	Refer to 4.3 and 4.4
Surveillance and Reporting		
<i>Recommendation</i>	<i>Status</i>	<i>Comments</i>
15. Improve serology testing turnaround times at pathology centres. Any positive syphilis result with a delay >5 days being put into the public health notification database after the test being conducted should result in a formal notification the requested laboratory.	Commenced	Refer to 4.4
16. PathWest should ensure that all positive syphilis test results are made available through iSoft Clinical Manager (iCM) so that patients who present for emergency departments for an unrelated presentation have access to their previous and current syphilis diagnoses	Not actioned	Further scoping needs to occur to assess possibility of ACCHOs and community health settings to find a patients Unique Medical Record Number (UMRN) to have it listed on pathology request forms.
17. Increase communication relating to patient management and clinical follow up between private health services, public funded health services and community health services.	Ongoing	Refer to 4.1, 4.3, 4.4, 4.5, 4.6

18. Enable systems that allow for support services (mental health services and DCPFSS) to notify health services of patients that could be mothers at increased risk of having syphilis and transmitting syphilis to neonates.	Not actioned	Consideration need to be given to: <ul style="list-style-type: none"> • confidentiality of patients • integration of different systems • creation of a risk matrix
Antenatal and Postnatal		
<i>Recommendation</i>	<i>Status</i>	<i>Comments</i>
19. Review WA antenatal screening guidelines.	Completed	Refer to 4.4
20. Within Medicare item 16590 there are allowances for a mental health assessment to be completed to assist in the proper management of planning or pregnancy. It is recommended that this item is expanded to include a sexual health risk assessment. This item can be claimed after 28 weeks.	Commenced	Refer to 4.4
21. King Edward Memorial Hospital (KEMH) guidelines and State-wide Obstetric Support Unit (SOSU) guidelines to include information for regional and remote clinicians on pathways for seeking clinical guidance.	Completed	Refer to 4.4
22. Public health staff within public health units should notify midwifery teams within hospitals of women who have tested positive for syphilis during pregnancy. Women can then be added to a 'high risk' register and can be treated and tested as high risk of syphilis cases at the time of birth, if needed.	Ongoing	Refer to 4.6

Commenced: Recommendation has been actioned, but final outcomes have not been met

Ongoing: Recommendation has become part of business as usual, recommendations that mostly relate to clinical care and so need to be continually actioned.

Completed: Recommendation has a clearly defined final outcome that has been completed.

Not actioned: Recommendation has yet to be actioned

4. Overarching State-wide Public Health Actions to Date

4.1 Strategy and investment

Antenatal and postnatal care that includes region-specific syphilis screening remains one of the key priorities of the WA SORG and is integral in the prevention of congenital syphilis. A significant amount of work has been done in the area at both the state-wide and local level with several initiatives still being underway.

The Antenatal and Postnatal Care Working Group continues to meet regularly to progress the strategies outlined in the *WA Syphilis Outbreak Response Action Plan*. This group reports directly to the WA SORG. Antenatal and postnatal care also remains a focus for all the SORTs

The DoH has provided funding to the outbreak regions for localised syphilis outbreak response activities since 2019-20. One of the initiatives from this funding was the development of a Baby Baskets Program in the Pilbara, which was later adapted in the Goldfields. This program provides information and incentives for pregnant people to attend regular antenatal care in-line with syphilis

testing guidelines. A [case study](#) of the program is available on the WA Syphilis Outbreak Response [site](#).

Finally, the DoH has also provided funding for Curtin University to conduct a research project looking at barriers and enablers for Aboriginal women and engagement in antenatal services. The findings from the research are anticipated to be available mid-2022.

4.2 Prevention, education and community engagement

A syphilis in pregnancy campaign was developed in early 2020 with the target population being pregnant women and the secondary target population was the partners of pregnant women. The campaign delivered a total of 1,567,533 impressions, and a click-through-rate of 0.27%, well above the industry benchmark of 0.05%. Total viewability was high at 83%, above the industry benchmark of 70%.

The DoH is now working closely with AHCWA to develop a new Aboriginal specific antenatal campaign.

The risk and prevention of congenital syphilis has been incorporated into existing and upcoming community-based resources including the DoH syphilis brochures and the AHCWA syphilis flipchart that is under development. The [‘We need to yarn about syphilis’](#) video also includes a component on the prevention of congenital syphilis.

4.3 Workforce development

There has been increased investment into services to respond to the syphilis outbreak response. Funding has been provided for the recruitment of dedicated syphilis staff to implement a range of strategies aligned to the action plans. Several service providers are focussing on antenatal and postnatal care but there is also a large amount of crossover within other priority areas, especially prevention and testing activity.

Congenital syphilis and antenatal care have featured as part of the workforce development videoconference series. Related topics have included:

- Antenatal/postnatal testing, treatment and management
- Congenital syphilis case reviews

The DoH has funded the development of an online learning module specifically for midwives, which was launched by the Australasian Society for HIV and Sexual Health Medicine (ASHM). Congenital syphilis was also incorporated into the online syphilis training website that was also developed by ASHM and launched in 2019 in response to the initial syphilis outbreak.

4.4 Testing, treatment and contact tracing

Testing guidelines have been updated to incorporate best practice syphilis testing in pregnancy protocols. These include the *Silver Book*, *Statewide Obstetric Support Unit: WA Shared Care Guidelines* and *Service Antenatal Testing Guidelines*. Direct correspondence has been sent to relevant stakeholders and clinicians to ensure healthcare workers are aware of updated guidelines.

Another important initiative to improve syphilis testing in pregnancy is the use of syphilis point-of-care testing (PoCT) in WA. The state-wide WA Syphilis PoCT program was rolled out in 2020 and is operational in 23 sites across the state. For a list of sites please refer to Appendix 2. This program compliments the Commonwealth Department of Health’s syphilis PoCT program that is delivered in eight of the ACCHOs. Maternity departments and other primary health services

providing antenatal care has been identified as important settings to provide syphilis PoCT to facilitate the early detection and treatment syphilis in the target populations. The first round of data is currently being collected and will be reported to the WA SORG quarterly.

Structured Administration Supply Arrangements (SASAs) have been published to allow registered nurses (RNs), midwives and Aboriginal health practitioners (AHPs) to provide treatment for infectious syphilis. There has been ongoing work to advocate a reform to the *Health Insurance Act 1973* to allow RNs, Aboriginal health workers (AHWs) and AHPs to request STI testing that gains access to a Medicare rebate for pathology costs.

WA SORG advocated via the national Sexual Health and Blood Borne Virus Standing Committee for sexual health risk assessment to be specified in antenatal care Medicare Benefit Schedule item numbers as a standard part of comprehensive antenatal care, alongside mental health and domestic violence risk assessments which are currently specified in these item numbers. This cost-neutral recommendation is under consideration by the Commonwealth Department of Health.

4.5 Surveillance and reporting

Work has been done to increase access to antenatal testing. This data along with congenital syphilis data will be included in future state-wide communiques. This has included the reprogramming of STORK to allow recording of the number of syphilis tests in pregnancy, at delivery and referral for 6-week post-partum testing.

Ongoing meetings have been established with PathWest to facilitate discussion around issues being experienced relating to syphilis testing. At the initial meeting an issues register was submitted that was collated from government and non-government health services. PathWest have committed to rectifying issues relating to delayed syphilis results being uploaded to state notification systems and subsequent meetings have been made to follow up on the progress of these actions.

An important tool to ensure that syphilis can be controlled in WA is the creation of a centralised syphilis management system. This activity remains a high priority for CDCD as this has implications for the effective management of high-risk patients and their contacts.

4.6 Other key achievements

Working group activities:

- The working group assisted with the development of the WACHS antenatal syphilis testing guidelines and a pregnancy app.
- Stickers were developed for handheld pregnancy records as a prompt for health providers to conduct testing in line with state-wide guidelines
- Services providing antenatal education were engaged to promote the importance of syphilis testing during pregnancy

Localised Syphilis Outbreak Response Team activities:

- Antenatal syphilis screening audits were conducted to assess compliance with guidelines and identify gaps in screening
- The Kimberley congenital syphilis protocol was provided to clinicians
- There were approximately 400 syphilis in pregnancy campaign posters were distributed across all regions to sexual health, maternity, women's health and crisis accommodation services regions

- Recalls were sent to child health nurses for babies requiring follow-up syphilis serology
- The regions worked with relevant teams and staff to promote screening and follow up at risk clients such as the maternity Aboriginal liaison staff
- MCDC have implemented monthly multi-stakeholder patient management meetings for women who are diagnosed with syphilis during pregnancy. Neonate management plans are created in partnership with clinical experts for metropolitan maternity services to advise and guide testing and treatment requirements for the neonate.
- Local resources focusing on antenatal awareness were developed.

5. Discussion

Despite the current investment into the syphilis response, WA has experienced a marked increase in the number of pregnant women diagnosed with infectious syphilis and congenital syphilis cases. Congenital syphilis is a serious condition that can cause neonatal death, bone damage, severe anaemia, enlarged liver and spleen, jaundice, blindness, deafness or meningitis.

The case reviews have been detailed investigations of each of the congenital syphilis cases and have highlighted the intersectionality of highly complex social factors, the vulnerability of some pregnant women, poor access to antenatal services and a lack of awareness in health professionals on the importance of syphilis testing in pregnant women.

The reviews have enabled DoH to fast track several recommendations of the advisory committees, including an amendment from a risk-based recommendation to universal application of three syphilis tests in all pregnant women, while maintaining the five antenatal and post-natal test recommendations for women in the Kimberley, Pilbara and Goldfields regions.

WA cannot be complacent, as the number of syphilis notifications in pregnant women and women of childbearing age demonstrates an ongoing risk of future congenital syphilis cases and deaths. There needs to be ongoing investment into the upskilling of antenatal care health workers to adhere to the recommended syphilis testing regimen during antenatal care with the understanding that exposure to syphilis may occur at any stage of a pregnancy.

The lack of access and/or poor attendance for antenatal care underscores the barriers and social factors that impact on the women's personal agency in the cases reviewed. The occurrences of congenital syphilis were in the majority of the cases the outcome of a fragmented healthcare system that siloed antenatal healthcare from the holistic health access of the individual mothers. Access of antenatal healthcare is underpinned by the assumption that the mother is willing, wanting and knowledgeable of the benefits of needing regular antenatal visits. The majority of these case reviews challenge these assumptions. The provision of culturally appropriate and accessible antenatal care has been demonstrated to improve maternal health outcomes. Alternative service delivery models have been researched and have demonstrated success in improving attendance of five or more antenatal visits, decreasing the likelihood of preterm births, and increasing women exclusively breastfed on discharge from hospital¹.

¹ Kildea, Sue; Gao, Yu; Hickey, Sophie; Nelson, Carmel; Kruske, Sue; Carson, Adrian; Currie, Jody; Reynolds, Maree; Wilson, Kay; Watego, Kristie; Costello, Jo; Roe, Yvette (2021). Effect of a Birthing on Country service redesign on maternal and neonatal health outcomes for First Nations Australians: a prospective, non-randomised, interventional trial. *The Lancet*, 9(5), 651-659. Retrieved from [https://doi.org/10.1016/S2214-109X\(21\)00061-9](https://doi.org/10.1016/S2214-109X(21)00061-9)

Notwithstanding the small number reported, but the reported or known use of methamphetamine during pregnancy should be regarded as a high-risk pregnancy, for syphilis exposure, other blood-borne viruses and other detrimental impact on the pregnancy.

6. Conclusion

These case reviews have highlighted the inequity in both access to healthcare and maternal health outcomes which are being experienced by Aboriginal people and socially disadvantaged non-Aboriginal women.

The emergence of increased syphilis in pregnant women and congenital syphilis requires a sustained and comprehensive response from government and non-government service providers. Addressing the background prevalence of syphilis will address the root-cause of this problem but working toward culturally safe antenatal care for Aboriginal women and a skilled workforce to test and treat syphilis during pregnancy is critical.

These case studies suggest that the model of antenatal care that currently exists is not adequate to prevent congenital syphilis cases from occurring, even if all women who present for antenatal care undergo the recommended number of syphilis tests in pregnancy because this intervention does not address the factors that contribute to women not attending for antenatal care. Alternative models need to be explored in consultation with Aboriginal women and key stakeholders to ensure that health professionals are supported and skilled to provide optimal and responsive antenatal care for women at risk of syphilis.

These reviews are the direct result of cases of congenital syphilis but the findings from these reviews have surfaced issues far beyond the scope of communicable disease control. Consideration needs to be given to other health conditions can occur from a lack of attendance to regular antenatal healthcare. There needs to be urgency in which disparities in maternal health are addressed and a systematic review to guide and facilitate this process. These investigations highlight the need for considerations to be made for holistic health care and service models to ensure that a mother is guided through her pregnancy, has access to primary healthcare, mental health care and the social needs are met.

Appendix 1

Guidelines for public health review of congenital syphilis case

December 2020

The occurrence of a case of congenital syphilis is a sentinel event reflecting potential missed opportunities for prevention in the public health, antenatal and primary health care systems. Therefore it is important to review each case of congenital syphilis for the purpose of health system improvement and preventing future avoidable cases.

These guidelines were prepared by the WA Syphilis Outbreak Response Group's Ante- and Post-natal Care Working Group, based on public health investigations of congenital syphilis cases conducted in 2019 and 2020 and the feedback received from review participants.

Purpose

The purpose of the public health review is to:

- to review the clinical and public health management of a congenital syphilis case
- identify areas for health service improvement
- identify need, if any, to update relevant clinical and public health guidelines
- raise awareness and educate health care staff about syphilis

Activation

The regional public health unit should activate the review process upon receipt of a notification of congenital syphilis.

The review should be conducted within eight weeks of notification of a confirmed or probable case of congenital syphilis to ensure that the event is still fresh in people's memories.

Review participants

Review chairperson

This person should be familiar with the clinical and public health management of syphilis and the local context in which the case occurred, but not have been involved in managing the case.

Review secretariat

This person should be appointed from the administrative workforce of the health service within which the review is being undertaken.

Essential review participants

1. Primary health care providers involved in antenatal care of the case's mother or who provide antenatal care in the mother's usual place of residence.
2. Obstetric and infectious disease care providers involved in the mother's management.
3. Paediatric care providers involved in the case's management.
4. Other service providers involved in the management of the case or the case's mother or whom the case or the case's mother was referred to, e.g. Department of Child Protection and Family Support.
5. Public health unit staff involved in contact tracing/partner notification.
6. Heads of units/departments involved in any aspect of the case's, or the case's mother's, clinical or public health management.
7. WA Department of Health Communicable Disease Control Directorate (CDCD) staff involved in disease notification and classification for public health reporting purposes.
8. Clinical risk management and quality improvement staff in the health service/s responsible for the mother's antenatal care and mother's and baby's care at time of delivery. If the case or case's mother is

Aboriginal or from a culturally and linguistically diverse background, appropriate health practitioners and/or liaison offers.

9. Specialist obstetric, paediatric, midwifery, public health laboratory and other relevant experts not involved in public or clinical management of the case or case's mother, as appropriate.

Optional review participants

Observers from other health services, as appropriate, and with agreement of the chairperson and essential participants.

Preparation of case presentation and epidemiology update

The review chairperson, with support from the secretariat, should:

1. Contact essential review participants in categories 1-6 above to collate a timeline and summary of the case's mother's maternity care and the clinical and public health management of the case and the case's mother care after the diagnosis of congenital syphilis was made. This will require liaison with the Chief Executive of the service providers involved.
2. Request a representative of the relevant public health unit to prepare a brief update of syphilis epidemiology relevant to the case.

Medical records

Medical records for the case and case's mother should be obtained and made available to review participants. The review chairperson and secretariat will need access to medical records at least 5 working days before the review to summarise the relevant parts of the case's and the case's mother's medical records in a de-identified timeline for oral +/- visual presentation at the review. Other review participants should have access to deidentified copies of these records several days before the review.

Suggested review agenda

1	Acknowledgement of country
2	Welcome, introduce review participants and observers and outline role of participants and observers
3	Reminder regarding signing of confidentiality agreements (see attachment)
4	State purpose of the review: <ul style="list-style-type: none">• to review the clinical and public health management of a congenital syphilis case• identify service gaps and areas for service improvement• identify need, if any, to update relevant clinical and public health guidelines• raise awareness and educate health care staff about syphilis
5	Case presentation and epidemiology update <ul style="list-style-type: none">• summary and timeline• Update of syphilis epidemiology relevant to the case
6	Questions to be asked <ol style="list-style-type: none">1. When and at which health services did the mother receive antenatal care?2. If the case was from a declared outbreak region, was the mother offered, and did she have, syphilis testing at booking, 28 weeks, 36 weeks and at delivery and 6 weeks post-partum as recommended in the WA Silver book¹ and National Pregnancy Care² Guidelines? If in another region, was routine syphilis testing undertaken at intervals recommended by the local guidelines?

	<ol style="list-style-type: none"> 3. At what gestation was the mother diagnosed with syphilis and what was the time interval between diagnosis and treatment? (infectious syphilis should be treated as soon as possible and ideally within 2 days as recommended in the CDNA syphilis SoNG³) 4. What was the time interval between the mother being treated for syphilis and the baby's delivery? (considered adequate if at least 30 days) 5. Was contact tracing/partner notification undertaken in a timely manner? Were named contacts tested and treated for syphilis empirically at the time of presentation within 1 month of being named? 6. Following the syphilis diagnosis, was the mother's ante- and post-natal care and follow-up in relation to repeat syphilis testing in accordance with the CDNA syphilis SoNG³ and/or local guidelines? 7. Has management of the baby been in accordance with current best practice guidelines for managing congenital syphilis? Aspects of management which should be discussed could include, but are not limited to, investigations, treatment and medical referral/transfer. 8. Were the health service's infection control guidelines followed during management of the case? 9. What aspects of the mother and baby's care after syphilis was diagnosed were managed well? 10. What aspects of the mother and baby's care after syphilis was diagnosed could be improved? 11. How could this case of congenital syphilis have been prevented? 12. What actions* need to be taken at the local, state and national levels to prevent future cases of congenital syphilis? 13. What actions* need to be taken at the local, state and national levels to ensure best practice management of any future cases of congenital syphilis? 14. Does this case need to be investigated as a clinical incident, and if so what is the severity code⁴? Provide justification if a clinical incident investigation is/will not be undertaken. 15. Any other discussion points/recommendations
7	<p>Conclusions and agreed action plan* including documentation of who is responsible for each action and the timeframe for completing each action</p>

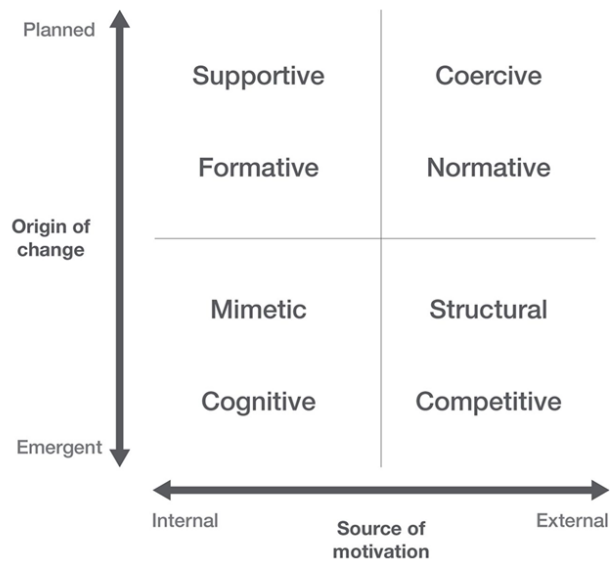
* It may be useful to refer to Leveque and Sutherland's integrated conceptual framework of levers for change in healthcare⁵ (see diagram and reference below) when developing an action plan for health service improvement.

Documentation and confidentiality

Patient identified information should NOT be recorded in the minutes.

Minutes of the review should be documented and circulated to participants for checking and correction before being finalised and sent to all participants, the Health Service Provider's Chief Executive Officer, the Director of CDCD and, where possible, the Chairperson of the Syphilis Outbreak Response Group.

Integrated conceptual framework of levers for change in healthcare.



Jean-Frederic Levesque, and Kim Sutherland *BMJ Open* 2017;7:e014825

References

1. WA Health. Silver book: STI /BBV management guidelines. <https://ww2.health.wa.gov.au/Silver-book/>
2. Australian Government, Department of Health. Pregnancy Care Guidelines. <https://beta.health.gov.au/resources/pregnancy-care-guidelines>
3. Communicable Diseases Network Australia. National Guidelines for Public Health Units. Syphilis. <https://www.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-syphilis.htm>
4. WA Health. Severity assessment codes. [https://ww2.health.wa.gov.au/Articles/S T/Severity-assessment-codes](https://ww2.health.wa.gov.au/Articles/S_T/Severity-assessment-codes)
5. Levesque J, Sutherland K. What role does performance information play in securing improvement in healthcare? a conceptual framework for levers of change. *BMJ Open* 2017;7:e014825. doi: 10.1136/bmjopen-2016-01482

Attachment: Confidentiality agreement



Government of Western Australia
Department of Health

CONFIDENTIALITY AGREEMENT

Title:	Congenital syphilis investigation advisory committee
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I (please print full name)

of (please print organisation details)

(Declaration of Confidentiality)

1. Agree to keep all information and documents relating to the investigation confidential, and not to disclose or communicate the same to any person or persons except during my duties without the prior written approval of **WA Department of Health**;
2. Agree not to make copies of, or take any extracts of information except with written approval of the chairperson;
3. Agree to comply with all processes and protocols established by the **WA Department of Health** from time to time to maintain the confidentiality of information and documentation relating to this project. The processes and protocols will include those for the security of documentation, communications between the **WA Department of Health** (and its officers, employees and consultants/service providers) and other parties;
4. Agree to return all documents, papers and other materials given to me relating to this project to the advisory committee's chair immediately when requested to do so; and
5. Acknowledge that breach of confidentiality and unauthorised disclosure are subject to the provisions and penalties contained in the *Public Sector Management Act 1994* and *The Criminal Code*. Unlawful disclosure of official information is a criminal offence punishable by up to 3 years imprisonment.

This declaration is made by me on the understanding that I will not be taken to have breached its terms if I am legally required to disclose the information referred to.

Signed:	Dated:
Witnessed:	Dated:

Appendix 2

WA Syphilis Point-of-Care Testing Services

WACHS

Primary Site	Satellite Sites		
Kimberley			
Broome Community Health	Broome Hospital		
Derby Community Health	Derby Maternity		
Fitzroy Crossing Community Health	Fitzroy Crossing Hospital	Wangkatjungka Clinic	
Halls Creek Community Health			
Kimberley Population Health Unit - Remote Services	Looma Clinic	Lombadina Clinic	One Arm Point Clinic
	Noonkunbah Clinic	Warmun Clinic	Kalumburu Clinic
Wyndham Community Health	Wyndham Hospital		
Kununurra Community Health	Kununurra Maternity	Kununurra Hospital	
Pilbara			
Nullagine Nursing Post			
Hedland Health Campus (Maternity)			
Midwest			
Midwest Public Health Unit (Geraldton)	Midwest Public Health Unit (Carnarvon)	Geraldton Maternity	

Community Services

Kimberley			
Royal Flying Doctor			
Broome Regional Prison			
Pilbara			
Mawarnkarra Aboriginal Health Service			
Goldfields			
Ngangganawili Aboriginal Health Service			
Laverton Doctors Surgery			
Midwest			
Geraldton Regional Aboriginal Medical Service Murchison Outreach Service			

Carnarvon Medical Service Aboriginal Corporation			
Geraldton Regional Aboriginal Medical Service			
Metro/ South West			
Homeless Healthcare			
South West Aboriginal Medical Service			
Health 360			
Derbarl Yerrigan Health Service (East Perth)	Derbarl Yerrigan Health Service (Maddington)	Derbarl Yerrigan Health Service (Midland)	Derbarl Yerrigan Health Service (Mirrabooka)
Peer Based Harm Reduction WA (Perth)	Peer Based Harm Reduction WA (Bunbury)		
SHQ	South Coastal Health and Community Services		

Withdrawn Sites:

- Royal Perth Hospital Emergency Department

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