May 2021 | Volume 70, Number 4

CD Summary

Contact: 971-673-1111 | cd.summary@state.or.us | www.healthoregon.org/cdsummary

THE DEADLY RESURGENCE OF CONGENITAL SYPHILIS IN OREGON

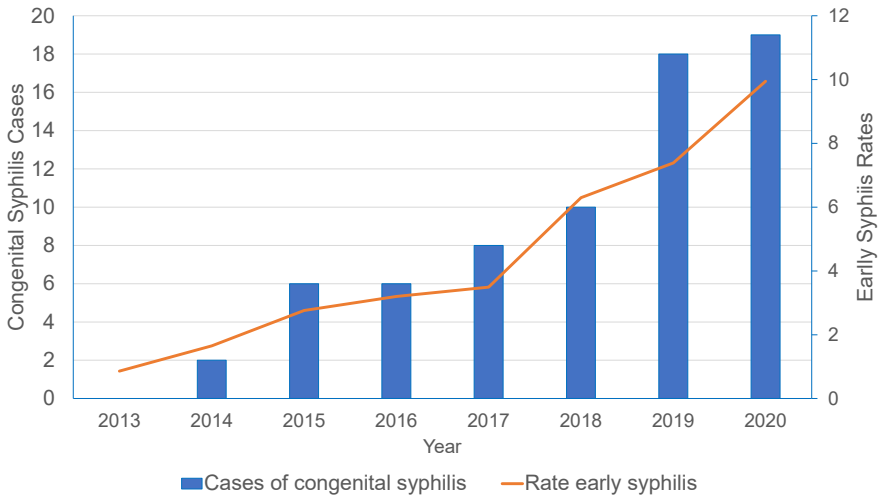
Congenital syphilis (CS) is a disease that occurs when a pregnant person with syphilis passes the infection on to their baby during pregnancy. CS can cause miscarriage, stillbirth, pre-term delivery, low birth weight, and neonatal death. Infants born with CS may experience bone deformities, anemia, hepatosplenomegaly, jaundice, neurologic problems, and skin rashes.

CS cases have increased significantly in Oregon in recent years. In 2013, no cases of CS were reported to the Oregon Health Authority (OHA); in contrast, in 2020, there were 19 reported CS cases (Figure). In 2019, Oregon ranked 11th highest in the nation for CS cases with a rate of 43 cases per 100,000 live births.[1]

Concurrently, the rate of early syphilis, including primary, secondary, and early non-primary non-secondary syphilis (formerly early latent), among people assigned female at birth increased over 900% from less than 1 case per 100,000 in 2013 to almost 10 cases per 100,000 in 2020 (Figure). Similarly, the rate of syphilis in pregnancy increased from 18 cases per 100,000 live births in 2013 to 129 cases per 100,000 live births in 2020. During this same period, more people assigned female at birth diagnosed with early syphilis reported injection drug use (0% in 2013 compared to 28% in 2018), more than 80% of which was methamphetamine.

From 2014 through 2020, of the 248 pregnant Oregonians with syphilis, 69 (28%) had an infant with CS. The proportion of pregnant people with syphilis who delivered an infant with CS increased from 2/15 (13%) in 2014 to 19/54 (35%) in 2020.

Figure. Congenital syphilis cases and rates of early syphilis among people assigned female at birth, Oregon, 2013–2020



CHARACTERISTICS OF PREGNANT PEOPLE WHO DELIVERED AN INFANT WITH CS

Between 2014 and 2020, the median age of the 69 pregnant people who delivered an infant with CS was 27 years with a range of 18-44 years. Eighty percent of cases were diagnosed in just five counties including Multnomah (36% of cases), Marion (14% of cases), Jackson (13% of cases), Lane (9% of cases), and Washington (7% of cases) counties. Black/African American, American Indian/Alaska Native, Native Hawaiian and Pacific Islander, and Hispanic/Latina/o/x pregnant people were disproportionately more likely to deliver an infant with CS when comparing the proportion of CS cases to the proportion of pregnancies in these groups (Table 1).

Forty-eight percent of pregnant people who delivered an infant with CS

Table 1. Congenital syphilis cases and live-births by race and ethnicity, Oregon, 2014–2020

	CS CASES (N=69)	LIVE BIRTHS *[2]
RACE		
American Indian/Alaska Native	4 (6%)	3%
Native Hawaiian/Pacific Islander	4 (6%)	1%
Black/African American	5 (7%)	3%
Hispanic/Latino/a/x	15 (22%)	15%
Asian	0	4%
Multiracial, other race	0	5%
White	40 (48%)	69%

*Average percentage of live births by race and ethnicity in Oregon from 2014 through 2020

were houseless or unstably housed. One-quarter had criminal justice involvement in the 12 months prior to or during their pregnancy. Thirty-two percent had a history of injection drug use, 52% had a history of methamphetamine use, and 20% had a history of heroin or other opiate use. Over 90% of pregnant people who delivered an infant with CS reported only one male partner in the prior 12 months. None were living with HIV. Forty-five percent had a history of gonorrhea or chlamydia and 17% were living with chronic hepatitis C.

PRENATAL CARE, SYPHILIS STAGE, AND TREATMENT

Almost 40% of pregnant Oregonians who delivered an infant with CS did not receive prenatal care more than 30 days prior to delivery. Nineteen percent of pregnant people who delivered an infant with CS began prenatal care in the first trimester while 30% and 12% began care in the second and third trimesters, respectively. Including those who did and did not receive prenatal care at least 30 days prior to delivery, 48% were diagnosed with syphilis more than 30 days prior to delivery. Among those who had prenatal care, 64% were diagnosed with syphilis more than 30 days prior to delivery.

Fifty-five percent of pregnant people who delivered an infant with CS were diagnosed with late syphilis or syphilis of unknown duration. Six percent were diagnosed with primary syphilis, 9% with secondary, and 23% with early non-primary non-secondary syphilis while 7% could not be staged based on the available clinical information. Sixteen percent of cases represented seroconversion, meaning patients had a reactive syphilis screening test after a non-reactive test earlier in pregnancy. Twelve percent of cases experienced re-infection with a four-fold or greater increase in rapid plasma reagin (RPR) titer after treatment and appropriate response to initial therapy.

Overall, only 35% of pregnant people who delivered an infant with CS received treatment for syphilis 30 days or more prior to delivery. Twelve percent received no treatment at all.

OUTCOMES OF INFANTS WITH CONGENITAL SYPHILIS

Five of the 69 (7%) CS cases were stillborn and 2 (3%) were characterized by neonatal death for an ***overall case fatality rate of 10%.*** The median estimated gestational age was 38 weeks with an interquartile range (IQR) of 35 to 39 weeks and a range of 22 to 41 weeks. The median birth weight was 2869 grams (6 lbs 5 oz) with an IQR of 2263 grams (4 lbs) to 3490 grams (7 lbs 11 oz) and a range of 604 grams (1 lb 5 oz) to 5820 grams (12 lbs 13 oz). Twenty-seven percent of infants were symptomatic at birth with snuffles, rash, edema, jaundice, hepatitis, or hepatosplenomegaly. Three-quarters received appropriate treatment with either intramuscular benzathine penicillin G or intravenous aqueous crystalline penicillin G.

Table 2. Syphilis treatment in pregnancy

STAGE	TREATMENT	NOTES
Primary	Benzathine penicillin G 2.4 million units intramuscularly (IM) x 1	For women living with HIV, administer at least two doses of benzathine penicillin G 2.4 million units IM and strongly consider three doses
Secondary		
Early non-primary, non-secondary		
Late syphilis (>1 year or unknown duration)	Benzathine penicillin G 2.4 million units intramuscularly (IM) weekly x 3	
Neuro or ocular syphilis	Aqueous crystalline penicillin G 4 million units intravenously every 4 hours for 10–14 days	
In the case of penicillin allergy, pregnant patients must be desensitized prior to treatment with penicillin as this is the only recommended therapy.		

CONGENITAL SYPHILIS PREVENTION OPPORTUNITIES

Given the severe consequences of CS, every case is a sentinel event indicating that the healthcare system is not meeting the needs of marginalized and minoritized Oregonians. We found that almost 40% of pregnant people who delivered an infant with CS did not receive prenatal care. In the context of intersecting social determinants of health, including experiences of racism, houselessness, substance use, and criminal justice involvement, this finding suggests that safe, supportive, judgment-free prenatal care is not readily accessible to all pregnant people, particularly those with syphilis. Pregnant people with syphilis likely have touchpoints with other providers, systems, and services during their pregnancy. Better coordination of these systems has the potential to avert cases of CS.

Early screening of all pregnant people for syphilis is a Grade A United States Preventive Services Task Force recommendation. In Oregon, there is room for improvement in the screening of pregnant people for syphilis. While screening at delivery is common, increased screening at first presentation to prenatal care and third trimester screening may avert additional CS cases. The concerning number of seroconversions and reinfections among pregnant people who delivered an infant with CS supports the need for early third trimester screening in Oregon, a state with high syphilis incidence and prevalence. In addition, the initiation and completion of treatment can be challenging. For pregnant people diagnosed with late syphilis or syphilis of unknown duration, treatment requires three precisely timed injections of Bicillin LA at seven-day intervals initiated at least 30 days prior to delivery. Treatment may also require coordination with additional providers and health systems for timely initiation and completion of this multi-dose regimen.

WHAT IS OHA DOING ABOUT CONGENITAL SYPHILIS?

- OHA has web page for congenital syphilis with helpful resources and guidance.
- OHA is working with local public health authorities in counties with the greatest burden of CS to conduct case review boards to identify opportunities for partnerships and systems-level change to improve care for pregnant people with syphilis and prevent CS.
- OHA is preparing an in-depth qualitative survey to learn more about the needs and perspectives of pregnant people with syphilis, particularly those who did not receive prenatal care. We also hope to elucidate the other healthcare touchpoints that pregnant people with syphilis have during their pregnancy.
- OHA will be conducting an analysis of Medicaid claims data to assess syphilis screening among pregnant people insured by the Oregon Health Plan.
- OHA has an incentive program to help engage pregnant patients in care for syphilis screening, re-screening, and treatment.
- OHA has a Bicillin Access Program to assist clinics and providers who do not routinely carry benzathine penicillin G (Bicillin LA) to access this critical medication for syphilis treatment.
- OHA issued a Dear Provider Letter about syphilis in pregnancy in November of 2018. The recommendations here serve as an update to that letter.
- The OHA STD Program is here as a resource for you. Please call us with any questions, cases, or concerns at 971-673-0130.

WE ALL PLAY A ROLE IN PREVENTING CONGENITAL SYPHILIS

1. Be familiar with the two syphilis screening cascades, traditional and reverse. Call your lab to find out which cascade it uses and the best way to order it.
2. Know these helpful tips when screening or re-screening for syphilis
   - For providers:
     - In ED, urgent care, or prenatal care settings, the syphilis screening cascade (RPR with reflex to titer and treponemal confirmation **[traditional]** *or* treponemal test with reflex to RPR and titer **[reverse]**) should be the default order.
     - An RPR titer alone is only useful for monitoring infection status in a patient with syphilis history.
     - If a patient reports syphilis history, contact your local health department to review previous RPR titers and treatment.
   - For laboratories:
     - If only a non-treponemal test (RPR) is ordered, check to see if there is documentation of a previous positive treponemal test. If none, suggest the provider order the syphilis screening cascade.
   - If only a treponemal test is ordered, suggest the provider order the syphilis screening cascade.
3. Be familiar with syphilis staging and appropriate treatment for syphilis in pregnancy (Table 2, page 2). A pocket guide from the California Department of Public Health is easy to follow. Patients who are not evaluated for syphilis symptoms will likely need the more onerous regimen of three doses of Bicillin LA at weekly intervals.
4. Screen and treat all current partners to prevent reinfection during pregnancy.
5. If you are a **prenatal care provider**, please screen patients for syphilis according to OHA recommendations *regardless of risk*. When possible, bundle syphilis screening with other prenatal care labs.
   - Screen at first presentation to care.
   - Screen again at 28–32 weeks (early third trimester)
     - We recommend pairing this testing with oral glucose tolerance testing at 28 weeks.
     - Early third trimester screening will capture seroconversion and reinfection experienced by 28% of pregnant patients who delivered an infant with CS in 2014–2020.
   - Screen at delivery.
   - Screen any pregnant person with a fetal demise after 20 weeks.
6. If you are an **emergency department or urgent care provider** seeing a pregnant person, please screen them for syphilis. Screening is especially important if:
   - They have not had adequate prenatal care.
   - They are seeking care for symptoms, signs or a diagnosis of an STI, HIV, or hepatitis C.
   - They are seeking care for substance use-related concerns including overdose, intoxication, or an injury or infection related to injection drug use.
   - They are experiencing houselessness.
   - They are involved in the criminal justice system.
7. If you are a **provider of substance use disorder treatment**, please screen your pregnant patients for syphilis.
8. If you work in **a correctional facility or in community supervision** and a pregnant person is in your custody, please screen them for syphilis or provide access to syphilis screening while they are in your custody.
9. If you provide **support services** to pregnant people through visiting nursing programs, maternal child health programs, food and nutrition programs, school-based health centers, syringe service programs, homeless shelters, or in any other capacity, please provide education and counseling on the importance of screening for syphilis during pregnancy.
10. Know that your local public health authority is a great resource for questions about syphilis testing, staging, and treatment. A list of local public health authorities and their contact information can be found here.
11. Finally, share this *CD Summary* with your colleagues and community partners.

We hope this report provides data and context to your work in caring for pregnant people and that you join us in working to reverse the course of syphilis and CS in Oregon.

REFERENCES

1. Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2019. Atlanta: U.S. Department of Health and Human Services; 2021.
2. Oregon Health Authority Center for Health Statistics: www.oregon.gov/oha/PH/BIRTHDEATHCERTIFICATES/VITALSTATISTICS/ANNUALREPORTS/Pages/index.aspx
3. Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines, 2015. MMWR Recomm Rep 2015;64(No. RR-3): 1–137.

Click for CME credits

Click to sign up for CD Summary

Click to view previous CD summaries

Oregon Health Authority
PUBLIC HEALTH DIVISION

Providence Portland Medical Center designates this enduring material for a maximum of .5 *AMA PRA Category 1 credit™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity. Portland Providence Medical Center is accredited by the Oregon Medical Association to sponsor continuing medical education of physicians.

You can get this document in other languages, large print, braille or a format you prefer. Contact the Public Health Division at 971-673-1222. We accept all relay calls or you can dial 711. for TTY.