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Provider-Reported Barriers in Sexual Health Care Services for Women with Upstream Barriers: The Case of Syphilis and Congenital Syphilis in Southern Colorado, 2022

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Abstract

Background.—Syphilis and congenital syphilis rates have increased sharply in Colorado in the past 5 years. Congenital syphilis is passed during pregnancy in utero and can cause lifelong physical, developmental, and neurologic problems for the child, or can lead to miscarriage, stillbirth, or early infant death. Congenital syphilis is easily prevented if the mother receives timely testing, treatment, and prenatal care. Providers can play a key role in preventing congenital syphilis for women with social vulnerabilities, who have a higher likelihood of syphilis and/or congenital syphilis infection.

Methods.—We surveyed 23 and interviewed 4 health care providers in southern Colorado in 2022 to record their experiences in providing sexual health care services. We asked providers with direct care experience about perceived barriers in effectively treating syphilis.

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Human Participant Protection.
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Results.—The most significant barriers reported in the survey were the cost of treatment (26%) and the loss to follow-up (22%). Interviews revealed further challenges, including discretionary testing procedures, delays in screening results, treatment referral issues, and stigma around substance use and sexual activity.

Conclusions.—Elevated syphilis and congenital syphilis rates pose significant public health challenges. Coordinated interventions are necessary to effectively reduce the transmission of syphilis and congenital syphilis among women with upstream barriers. Potential care solutions include expanding rapid, point-of care testing and treatment options, supporting bicillin delivery or web-based inventory systems, offering anti-stigma training for providers, offering mental and behavioral health resources at providers' clinics, and expanding partnerships with syringe access programs.

Summary:

A study of providers in southern Colorado found there were barriers in providing sexual health care services to women in need of syphilis and/or congenital syphilis diagnostics and treatment.

In Colorado, cases of syphilis among women of a reproductive age rose by 832% from 2017–2022,[i] a trend reflected across many western and southeastern states.[ii,iii,iv] Congenital syphilis (CS), a preventable outcome of untreated syphilis in pregnant women which can result in death, stillbirth, preterm birth, and physical, developmental, and neurologic disabilities for the child, increased by 675% during the same period.[i] Pueblo County, Colorado is a community of particular concern due to disproportionately high rates of syphilis and CS. In 2022, less than 3% of all live births in Colorado occurred in Pueblo, while 39% of all CS cases in Colorado occurred in Pueblo. Women of reproductive age accounted for 62% of all new syphilis diagnoses in Pueblo County in 2022, with a rate of 287 per 100,000 women, compared to the statewide rate of 33 per 100,000 women.

CS can be easily identified with an initial screening with the onset of prenatal care, repeat testing in the third trimester, and at delivery.[v] Commonly missed prevention opportunities, however, include lack of timely prenatal care and inadequate maternal treatment, according to national syphilis surveillance data.[vi] Syphilis and CS trends indicate that access to testing and treatment are barriers, particularly for women with upstream barriers such as those identified in CS case reviews across Colorado: justice involvement, unstable housing, and intravenous drug or other substance use.[vii] In 2022, 25% of women diagnosed with syphilis in Pueblo reported substance use in the past year, and 32% had criminal justice involvement. For CS cases, 100% of mothers in Pueblo reported substance use in the past year, and 50% had criminal justice involvement. Such patients may have healthcare access issues which complicate timely diagnosis and treatment, such as inability to pay for health care costs, secure reliable transportation, or lack of health insurance.[viii,ix,x] In medically underserved areas, these access issues are exacerbated due to a shortage of healthcare resources.[xi]

There is little research on providers' experiences with missed prevention opportunities; the studies that do exist indicate that providers understand the structural and access issues that patients face.[x,xii] Yet more research is needed to understand the barriers that providers have in effectively screening, testing, and treating syphilis and CS. This study explores the

systemic barriers that providers experience in delivering sexual health care to people who are marginalized. To this end, we surveyed and interviewed healthcare providers in and around Pueblo County, a medically underserved area with limited healthcare services and the greatest increases in syphilis and CS rates among women in Colorado.[i, xiii] This research identifies key gaps that providers have in providing screening, testing, and treatment for syphilis and congenital syphilis for medically underserved women.

Methods

Between February and September 2022, we used purposive sampling to recruit providers with connections to the communities most impacted by increased syphilis rates among women. This sampling technique utilized surveillance data and family planning data for Pueblo County, Colorado to identify health care providers who offer either family planning, prenatal care, or sexual health services to women of reproductive age. Family planning data was obtained from the Colorado Department of Public Health Family Planning Program, which funds family planning clinics across the state. STI surveillance data from the Colorado Department of Public Health Office of STI/HIV/VH was utilized to identify all providers in Pueblo County who were screening women of reproductive age for STIs or HIV. These provider lists were combined, giving a list of 34 providers in the county who provide sexual health, family planning, or prenatal care services. This provider group was chosen because they have experience screening and treating the population of interest – women of reproductive age in Pueblo County.

All survey data were collected online, lasting 5–10 minutes, and included a $5 gift card. The surveys prompted providers to rate comfort with screening, staging, and treating syphilis and to identify barriers to those services. The survey questions were specific to providers' experiences with their female-identifying patients. Four providers agreed to virtual, in-depth, semi-structured, audio-recorded interviews, which were transcribed verbatim. Saturation was not reached with the interview data, which is addressed in the discussion. Interviews took between 60–90 minutes; providers were offered a $50 gift card in appreciation for their time. In the interviews, providers were asked about barriers to providing screening and treatment of syphilis and CS; recommendations on reducing syphilis infection; and technical assistance they needed to support care provision.

Data collection occurred sequentially. The quantitative survey instrument was developed and administered prior to interviewing providers. The survey included free response, multiple choice, and Likert responses, and was designed to measure provider comfort with offering sexual health services and recording sexual health histories, and to better understand provider-reported barriers and concerns when offering syphilis testing and treatment to their female-identified clients. The survey was used to identify providers who were willing to be interviewed. Survey findings were also used to refine questions from an interview guide previously developed by one of the authors for a separate research project related to congenital syphilis.[ix] The interview questions were designed to focused on provider experiences and barriers in offering syphilis screening, testing and treatment to women, including pregnant women and to identify barriers that were not identified when developing the survey.

Survey data were analyzed using SAS 9.4 to explore relationships between the provision of prenatal services and barriers to treatment. Qualitative data were thematically analyzed, first by extensively reviewing interview transcripts, using MS Word to uniformly format the transcripts, and then using MS Excel to summarize transcripts into a data table organized by interview question. Those summaries were then consolidated into a matrix that outlined domains, broad themes, sub-themes, and exemplar quotes. This thematic analysis was completed by three analysts, and domains and themes were identified through a consensus approach. The interview data augments and provides further clarity to the survey responses.

Results

Out of a total of 34 providers contacted, 23 completed the survey for an overall response rate of 68%, exceeding the typical response rate among specialty care physicians.[xiv] The three most common clinical settings of providers who responded to surveys were family planning clinics or reproductive medicine (n=7), local health departments (n=5) and primary care/family medicine (n=3). All of the providers eligible for 340B federally subsidized pharmacies (n=13) offered bicillin syphilis treatment. For the remaining providers who were not 340B eligible, just four offered bicillin syphilis treatment.

Of the four providers who completed interviews, three were in clinical coordination or management roles, and one provided direct care. The providers each practiced in a distinct setting: a private practice (obstetrics and gynecological), a crisis pregnancy center, a county public health family planning clinic, and a family medicine/general practice clinic that also offers recovery treatment and behavioral health services. Three provided testing for syphilis; only the respondent from the public health clinic offered both testing and treatment for syphilis.

The most common barriers providers reported in the survey are the cost of treatment (26%) and loss to follow up with clients (22%) (Table 1). Importantly, 30% of providers in the survey reported no barriers to syphilis treatment despite persistently increasing rates of syphilis and CS rates in the area. Thirteen percent reported a lack of provider education on providing treatment for syphilis. In qualitative interviews, providers perceived that women are at low risk for syphilis, as it is most commonly reported among men having sex with men or because of women’s reported stability and monogamy in their intimate relationships.

Overall, three main themes were identified, including: 1. Discretionary testing and delayed screening results, 2. Cost of treatment and treatment referral issues, and 3. Stigma around substance use and sexual activity.

Theme 1: Discretionary Testing and Delayed Screening Results

In screening for syphilis and CS, providers reported practices and resource issues that obstructed optimum care delivery. Interviewees indicated they did not offer opt-out syphilis screening to all clients. When they did offer testing, a lack of rapid point-of-care testing options posed challenges to follow-up.

Discretionary Testing

Interviews highlighted the tension between resources, the perceived mission, and the risk of missing out on effectively screening and treating STIs. A provider at a crisis pregnancy center, a nonprofit that dissuades clients from seeking comprehensive family planning services including abortion care, provides services and outreach primarily to unhomed pregnant women and Medicaid recipients, though their clinic does not offer syphilis or HIV testing:

> "That's really up to our medical director. She has been hesitant to start dealing in blood, just because of all the other issues that that brings up… We're trained on all the bloodborne pathogens, and all of the sanitation procedures… So we've got the ability, and the skill, and the knowledge to do it. But, she's just not comfortable. I think she's afraid of us becoming or having the reputation of being an STI clinic where we – she would feel that would be mission creep in a way. So if it doesn't have direct results or relevance to somebody who was pregnant or wanting to become pregnant, it hasn't really come up as an option yet."

The clinic's mission conflicts with the national and state public health guidelines and recommendations for the early screening of syphilis for all pregnant women in the U.S.[xv,xvi] For other providers who do offer full STI screening, individual-level decisions can impact who receives opt-out syphilis testing. A provider at a family medicine/general practice reported that only patients who engage in higher risk sexual behaviors are offered full STI screenings:

> "For all new patients we don't do the whole panel of hepatitis, HIV, and then all of the STI screenings. It's for those who engage in risky sexual behaviors, those who've reported, those who have suspicion that maybe they have some infidelity in their partner relationships. So, it's really kind of a case-by-case on that as far as testing in the primary care setting."

This approach assumes an open provider-patient dialogue and that patients feel comfortable communicating about their sexual behaviors.

Delayed Screening Results

Many providers (22%) reported patient loss to follow-up in the survey. Part of this was attributed to a lack of rapid point-of-care testing options. Providers indicated that many of their patients seek care through emergency departments (EDs) and urgent care clinics, which are not equipped or incentivized to conduct follow up and outreach for transient populations. One provider at a private practice, who had been working with a patient on a referral for contraception, indicated their patient had been seen in an ED for a wound care need; the provider in the ED collected a blood sample for a syphilis and HIV test but did not have rapid testing. The test came back positive for syphilis more than a week later, but they were unable to locate the client:

> "The hospital unfortunately does not have a rapid RPR, so she had left the hospital by the time her syphilis results came back. She came in – she has just the pay-as-you-go phones, so by the time the health department got the syphilis from the

hospital, and the hospital's trying to contact her, she didn't have that phone number anymore."

There was a nine-month gap from the ED visit to initiation of syphilis treatment, leaving this patient susceptible to health complications from untreated syphilis and her sexual partners susceptible to infection or reinfection.

Theme 2: Cost of Treatment and Treatment Referral Issues

Providers reported high costs associated with procuring and storing the treatment medication for syphilis, Benzathine penicillin G, or bicillin, along with follow-up issues when referring women to emergency departments or public health departments for treatment.

High Cost of Treatment

Many providers (26%) reported the high cost of bicillin as their main barrier to treatment in the survey. In addition to the high cost of bicillin and its cold storage requirements, reimbursement through Medicaid was a small fraction of the cost to stock the medication. The respondent at a family medicine/general practice expressed that, with an 80% Medicaid enrollee population, the 340B ineligible clinic could not afford to absorb the costs of medication:

"In my office, [*the client*] should be treated for syphilis, but as a private practice, it's hard to lose money. It's cost prohibitive for us. …To purchase [*bicillin*], it would cost me between $300 and $400 a dose and… the reimbursement is about $36… My providers have been extremely frustrated with this whole process because they're like, we have them here in the office."

Another respondent at a private practice indicated that the cost of syphilis treatment was a challenge. The respondent provided services to a patient with untreated syphilis who had visited the clinic two times in a six-month period. The patient hadn't received treatment either time, noting the high costs:

"We're up here, the reimbursements down here, and the patients are somewhere here in the middle and they're the ones who are getting missed."

Treatment Referral Issues

Because of the above issues with bicillin, providers often referred patients to an ED or a local public health agency for syphilis treatment. This created more barriers, as a respondent at a family medicine/general practice explains:

"Once we do the testing and we get the results… it's actually getting the patients there [*to the public health department*] and making sure that they're comfortable. It's too much, especially for people who have a lot of other things going on. We think this would be a high priority but working with certain individuals, this is really low on their priority list… We're hoping that they're going and they're getting the appropriate course; we're hoping and we try and do as much of the legwork up front… But, once we refer out, it's kind of like okay, we hope they got the treatment."

Although nearly all providers interviewed understood the process for making treatment referrals, uncertainty existed regarding which health authorities to refer to and how the referral process should work. An OBGYN described making a referral to a small, rural health department, where bicillin and sexual health screening are not available, and noted the difficulty in even reaching someone at the agency:

> "Her information has been turned over to [a nearby rural health department] and she cannot get ahold of anyone there… She's worried about her baby, but she said, 'We can't get anybody to answer.'"

When treatment is referred out to smaller or underfunded public health departments, the problem of communication is exacerbated.

Theme 3: Stigma around Substance Use and Sexual Activity

Providers acknowledged that women with upstream barriers face many obstacles within the health care system, particularly when they are honest about their substance use history. One provider described the complexities of substance use stigma and criminalization:

> "When we're talking about the substance use population… there's a lot of stigma around patients who have an opioid use disorder…. You've got some providers who are like, oh well just so you know, when you deliver, you're not getting any [*opioids*] – and that's really off-putting. I feel like there's been a lot of providers, OBGYNs who've turned that corner and are embracing it, but there's all of those old stigmas – or maybe five years ago they did have a bad experience when they delivered, and everyone treated them poorly, and talked down to them, and they're afraid that their baby's going to get taken."

Providers acknowledged that women experience negative judgments when they are diagnosed with an STI and that it prevents some of their patients from opting into STI screening or hesitate when in need of health care. In particular, providers noted they believe there is a fear of the partner notification process, and that generally, many of their patients do not regularly or openly have conversations about sex, sexuality, or STIs with their families or peer groups. One provider described this sexual silence:

> "There's the stigma. You know, no one wants to have an STI. No one wants you calling all of their sexual partners. No one – you know, that's just part of it. And so sometimes I think there might be times where people are just like – you don't hear it, you don't see it, I'm not going to ask to be tested for it."

Discussion

We explored the systemic barriers that providers experience in delivering sexual health care in a medically underserved region of southern Colorado, with a special emphasis on the prevention of syphilis and CS among women of reproductive age. Interviews and survey results from healthcare providers identified three primary themes: 1) discretionary testing and delayed screening results; 2) the cost of treatment and treatment referral issues; and 3) stigma around substance use and sexual activity. Survey responses demonstrated a

knowledge gap between the reality of rising syphilis rates and providers' understanding of the need to routinely test women at increased risk of syphilis acquisition.

Many of the women of reproductive age who are at risk for syphilis acquisition experience several upstream issues which complicate their ability to seek and receive healthcare. Even among women who do receive care, however, loss to follow up is a significant barrier cited by providers in ensuring adequate treatment for syphilis and CS among women at risk. EDs are heavily utilized by medically underserved women and may provide an opportunity to provide testing or screening for women who might not otherwise be seen by a healthcare provider.[xvii] However, if the ED cannot offer point-of-care testing and initiate treatment at the first visit, or even in the first week, the patient may be lost to follow up. This missed opportunity for treatment initiation contributes to ongoing transmission in the community and poor outcomes for women as syphilis or CS infection progresses.

Point-of-care, rapid tests for syphilis can yield results in minutes and may be a useful testing option for under-resourced settings. These tests, however, may yield a false-positive for anyone with a prior syphilis infection, qualitatively detecting *Treponema pallidum* (syphilis) antibodies, but unable to distinguish between an active infection and a previously treated infection. The survey found that just a few providers (n=4) were uncomfortable with the reverse algorithm testing used to rule out false positive results. Given the serious consequences of syphilis and CS, some experts have concluded that "the risk of over-treatment due to false positives which are not syphilis in origin is more acceptable than the risk of non-treatment of syphilis."[xviii,xix] Bicillin is the only recommended treatment for pregnant women infected with syphilis, and yet increasing costs and shortages continue to be a barrier. Several public health agencies across the U.S. advise prioritizing bicillin treatment for pregnant people and babies with congenital syphilis, since non-pregnant people can receive alternative treatment for syphilis infection.[xx] Providing rapid point-of-care and confirmatory syphilis testing in EDs would facilitate providing the first round of treatment prior to leaving to women who test positive. Implementation models for point-of-care testing in EDs suggests that pulling a confirmatory laboratory sample in conjunction with a rapid test can minimize workloads for providers, and increase provider buy-in, because the lab would then handle public health reporting and additional follow up with the client.[xxi]

The most common barrier cited by providers was the high cost of bicillin. Providers have long been resistant to ordering and stocking bicillin in their clinics because of the high cost and cold storage requirements for the drug.[ix] Bicillin access relies heavily on 340B federally subsidized pharmacies and STD clinics to distribute the drug,[xxii] prompting many providers to refer patients elsewhere for treatment. Referral creates an increased burden on patients who have limited access to transportation, childcare, or other restrictions to visit another clinic to access treatment and creates a gap in continuity of care. States and counties across the U.S. have implemented programs to have bicillin delivered directly to health care providers to coordinate care with patients at routine follow up visits. More information on public health departmental websites is needed to assist providers on finding clinics with bicillin doses available, such as expanding on the Bicillin Inventory Tool, developed by the National Coalition of STD Directors.[xxiii]

Finally, ongoing stigma around substance use negatively affects interactions between providers and patients.[xxiv] Some providers may have adverse attitudes or implicit biases towards people with substance use disorders (SUD), particularly for those with multiple SUDs or co-occurring disorders. Populations who experience labeling, stereotyping, or discrimination in health care settings report higher levels of disempowerment, poor quality care, and are deterred from seeking medical services.[xxv,xxvi] Pregnant women who use substances may also be deterred by the threat of involvement from child protective services, which they fear may take the child away if they test positive for substances during pregnancy.

Educating providers on addiction is incredibly helpful in establishing a deeper understanding of addiction as a disease and public health concern.[xxvii] State agencies and behavioral health programs could provide this key service by offering education and training to health care facilities and groups of providers. Contact with people in recovery has a particularly strong effect in changing provider attitudes, when coupled with education.[xxviii] The most effective stigma reduction efforts among providers include components that dispel myths about addiction, use people-first language, and demonstrate that recovery from SUDs and successful living are viable.[xxix]

Given the intersecting upstream issues experienced by many women of reproductive age at high-risk for syphilis, health care providers, including staff, nurses, and doctors at health care facilities, should integrate mental health and trauma-informed components into their practice to deliver more effective solutions for their patients.[xxix] Hiring mental health and behavioral health specialists, ideally with lived experience or connections to the community, and co-locating these navigators and peer support services in clinical settings, can assist in connecting patients to resources and/or provide support as they navigate the complicated and fragmented healthcare system. This creates a climate in which substance use and mental health issues are destigmatized and regarded as health concerns, rather than moral failings.

This study presents healthcare providers' perspectives of the challenges of effectively screening, testing, and treating for syphilis and congenital syphilis in a medically underserved region. A limitation of this study was that the small sample size for the interviews did not reach data saturation. The research goal was to interview providers from diverse practice settings, yet we were unable to recruit providers who work in correctional settings or providers who work in urgent care and emergency care settings. We had hoped to recruit more, but in the post-COVID environment, providers are working under limited capacity due to shortages of nursing and other allied health staff and the response rate was low.

Conclusion

Recent increases in syphilis and congenital syphilis are a challenge of significant public health concern and can overwhelm limited resources for medically underserved populations. Insights from providers with direct care experience illustrate gaps in services. Listening to provider perspectives and challenges can help public health entities develop practice-based recommendations that can help to mitigate the spread of syphilis.

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Table 1:

Survey Results from Providers about Barriers to Testing and Treatment of Syphilis and Congenital Syphilis

Total Responses n(%)	Barriers to Testing and Treatment									
	Cost of Tx n(%)		Availability of Tx n(%)		Loss to follow up n(%)		Lack of provider training n(%)		Lack of comfort with algorithm n(%)	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
23(100)	6(26)	20(74)	1(4)	22(96)	5(22)	18(78)	3(13)	20(87)	4(17)	19(83)