

# Addressing Racial/Ethnic Healthcare Disparities and the Rising Incidence of Syphilis

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## Abstract

Some sexually transmitted infections have posed a particular epidemiologic problem for some communities, in that racial/ethnic disparities have been demonstrated. Syphilis represents a specific example of such an infection, compounding the medical problem further by adding to the serious consequences of its vertical perinatal transmissibility to the neonate, in addition to its sexual, or horizontal, transmission. The recently rising incidence of syphilis in the pregnant woman and the potential for the rising incidence of congenital syphilis should be a cause for global concern. However, what may be concluded as a problem within communities of color, may actually be a problem relating more closely with a socioeconomic disparity. Multiple deliberate measures may be needed to affect its eradication, which is naturally possible, given the longtime availability of the simple curable medical compound of penicillin.

**Keywords:** Race ethnicity disparities, Syphilis, Congenital syphilis, Socioeconomic status

## Addressing Racial/Ethnic Healthcare Disparities and the Rising Incidence of Syphilis

Many racial/ethnic healthcare disparities have been demonstrated in recent years, and some examples relate to sexually transmitted infections (STIs). In fact, a greater incidence of STIs have been identified in people of color (i.e. non-white individuals) compared to white people [1,2]. While it must be clear that skin pigmentation is not a cause for any predilection for STI pathogenicity to explain any racial/ethnic healthcare disparity, there must be some explanation for this recognized medical impact of social constructs. One STI, syphilis, has been shown to have a dramatic recently rising incidence, which has also resulted in a comparative rise in *congenital* syphilis (CS), through its vertical perinatal transmission [3,4]. The incidence of CS is often expressed as the number of cases/100,000 births, and the consequences of it include a significantly high rate of mortality (40%) and multiple long-standing morbidities. [5] This is a well-known and often preventable infectious entity if diagnosed and treated early in gestation, though barriers exist preventing consistent success [6-9]. Although

syphilis can be detected in its early primary and secondary (P&S) stages, it is most often diagnosed serologically in its latent phase, past these initial stages [10]. Syphilis detection through serologic testing routinely occurs universally once pregnancy is diagnosed with the presentation for prenatal care (PNC). Naturally, all pregnant women would need to present for prenatal care as early as possible for there to be an opportunity for proper care in this instance. However, for some people, there may be an inability to receive such proper healthcare, relating to its relative lack of affordability for some populations. That people of color are disproportionately of low income is an important reality to consider for this specific healthcare outcome disparity that is known to exist. Therefore, this healthcare problem may actually be one of socioeconomic disparity rather than relating to the assignment of race and ethnicity, as has been previously emphasized [11-13]. The critical factor here is that there may be a socioeconomic disparity that serves as an impediment to practically deal with this CS epidemiologic problem. The eradication of the syphilis spirochetal pathogen from our entire population therefore, and most particularly in child-bearing women as

the vector responsible for transmitting CS, may be particularly problematic. Despite the numerous factors correlated with the incidence of all stages of syphilis infection [5], its diagnosis does not require a particular screening methodology, since its serologic diagnosis in pregnancy is routinely and universally performed.

It should be mentioned in this context, that this CS epidemic has even been seen in Canada [14], which has a healthcare system different than in the U.S., suggesting that the barrier to its eradication appears to be more than simply explained in terms of the non-universal healthcare system. Of particular interest is the increased risk of reinfection during pregnancy [15], justifying the repeat testing in the third trimester for such identified infected individuals, as well as at presentation for delivery. This is done by checking rapid plasma reagin (RPR) titers, since the ultimate diagnostic test, fluorescent treponemal antibody absorption (FTA-Abs) will always stay positive after its initial positivity. While it has been mandated to universally perform repeat testing in the third trimester, the lack of this actually being consistently performed has been demonstrated [16]. However, it has also been demonstrated that when comparing universal third trimester screening versus selective third trimester screening (e.g. for those already identified as having been infected), there is no outcome difference [17]. This suggests that resources need not be necessarily directed to this mandated re-testing.

The avoidance of CS (or its aversion) can be expressed as the number of pregnancies in which syphilis was diagnosed minus the number of cases of CS. [7] This represents the measurability of all efforts which are made to prevent it. So, to prevent reinfection, every effort should be made to always treat the sexual partner(s) when a diagnosis is initially made, given this known risk of reinfection in pregnancy. There may be benefit for "expedited" partner treatment as was attempted to be demonstrated for another STI (i.e. chlamydia), for which medication was given to the patient for her to provide it to her sexual partner [18]. Borrowing from that same concept, a known sexual contact who is presumed to have syphilis according to the acquired serologic record, could be offered parenteral penicillin treatment by an appropriate primary care physician (PCP). Thus, further effective treatment delay could be avoided, if a plan to offer such expedited sexual partner treatment were to be in place. Additionally, adequate screening and effective treatment of cases of syphilis in pregnancy will affect this mentioned aversion score. The potential risks of homelessness, sex worker engagement, and IV substance use disorder (SUD) also needs to be recognized as correlating with this condition [19].

While poverty itself may be a reason to inhibit access to healthcare, the expectations of significant healthcare expense (possibly leading to bankruptcy), where universal healthcare does not exist, can considerably inhibit or delay healthcare

access. This certainly includes PNC, which can be unnecessarily delayed, leading to the absence of the ability to consistently prevent CS [20,21]. This affects everybody, regardless of whether or not criteria are met to assign the label of *poverty*. Given that healthcare access early in pregnancy is essential for preventing CS, efforts to educate the community to underscore the importance of early PNC is essential. However, we must also recognize that our healthcare system itself may be contributing to our current CS epidemic, in slowing the presentation for PNC. Attempts have been made to rectify the variety of social problems that have been so identified, with varying levels of success [22,23].

The rising incidence of this current problem (CS) is relevant for this discussion. Nationally in the U.S., syphilis diagnosis rates were 6.42 times higher among Black and Hispanic heterosexually active women compared with White heterosexually active women. Between 2012 through 2016, cases of syphilis rose from 8.4 to 15.7 cases per 100,000 live births (an 87% increase). Mirroring this, the rate of CS was 57.3 cases per 100,000 live births in 2020 [6]. In 2020, there were 137 cases of P&S syphilis cases in Chicago (a large urban area) and 19 cases of CS, according to a Cook County Department of Public Health (CDPH) report [24]. Though clinical data are often reported in terms of P&S cases of syphilis, collected data suggest a likelihood that the number of *latent* cases of syphilis (identified by serologic testing) are about three times the number of cases of P&S syphilis cases [25].

## Conclusion

The healthcare delivery paradigm for PNC, which often depends on its financial affordability, may well be the source to address this needless epidemic of CS that affects many populations globally. All efforts should be made, therefore, to ensure that populations who are at particular risk of being carriers of serious STIs are screened for and appropriately treated, so as to sharply reduce this discussed epidemiologic problem.

## Conflicts of Interest

The authors have no conflicts of interest.

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