



Short Communication

Rise of syphilis surge amidst COVID-19 pandemic in the USA: A neglected concern

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ARTICLE INFO

Keywords:

Syphilis
Outbreak
Pandemic
COVID-19
Surge

ABSTRACT

Introduction: Syphilis is a treatable but highly contagious sexually transmitted disease (STI) that has a long history of infecting millions of people from diverse ethnicities and is mainly considered promiscuity. An uprise in syphilis cases is noted in the Coronavirus pandemic. This short communication discerns salient factors precipitating the syphilis upsurge, implications, current efforts, and recommendations.

Discussion: A decrease in funds and investments for public health clinics during COVID-19 because the funds have been diverted for treating COVID-19 has resulted in a dramatic rise in syphilis. The main determinants of the increased spread of syphilis during the COVID-19 pandemic include unsafe sexual activities, reduced STI screening, lack of sufficient staff during the pandemic, and abandoning of STI programs and services.

Recommendations: We recommend high-risk screening clinics and effective telehealth programs to combat against rising STI burden in the US.

1. Syphilis in the USA

Syphilis is a treatable but highly contagious sexually transmitted disease (STI) that has a long history of infecting millions of people from diverse ethnicities and is mainly considered promiscuity [1]. *Treponema pallidum*, an obligate gram-negative parasite, is a fundamental cause. Besides sexual transmission, syphilis can be transmitted through direct skin contact with infected individuals and vertical transmission from mother to baby [1].

Primarily, individuals infected often develop a painless sore typically on the genitals, mouth, or anus within a few weeks of exposure, particularly at the site of invasion of bacteria. This is then followed by bacterial intrusion in blood and lymph nodes leading to maculopapular

rash affecting the entire body, coupled with other clinical manifestations, which include pyrexia, body pains, and fatigue. If left undetected, syphilis progresses into the latent phase with no prominent signs and ultimately leads to inevitable multiple organ dysfunction in later years [2].

According to World Health Organization, seven million individuals got infected globally with syphilis in 2020, and unhygienic sexual practices amongst men who have sex with men (MSM) account for the highest incidence of infection [3]. A recent report estimated that more than 129 thousand cases of syphilis were reported in the United States as of 2019, with more than 1800 cases of congenital syphilis (see Fig. 1 and Fig. 2). An unexpected increase has been seen in 2020 and 2021, thus highlighting an alarming ongoing concern [4].

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<https://doi.org/10.1016/j.amsu.2022.104239>

Received 2 July 2022; Received in revised form 13 July 2022; Accepted 19 July 2022

Available online 31 July 2022

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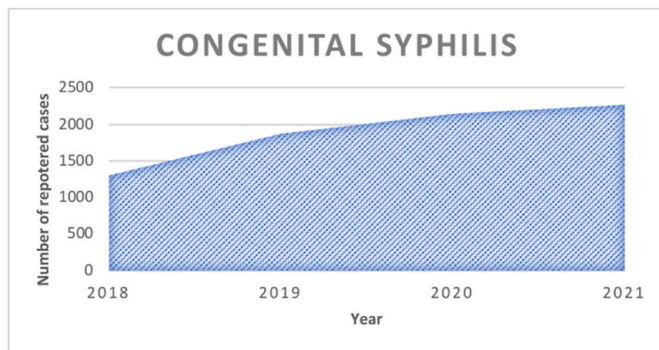


Fig. 1. Graphical representation of the number of cases of congenital syphilis reported in the US.

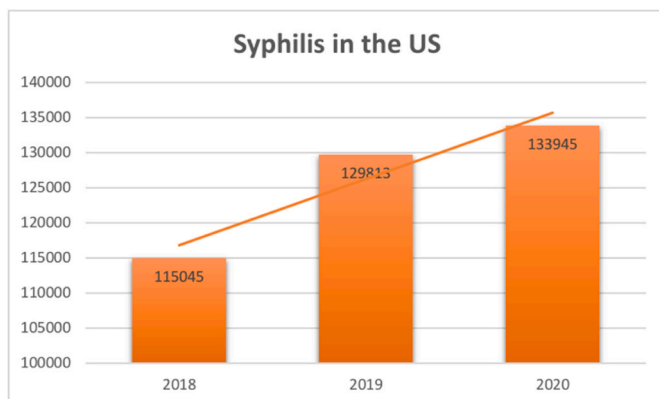


Fig. 2. The number of cases of syphilis reported in the US in three consecutive years.

COVID-19 pandemic in the USA.

The USA has incurred a heavy burden of COVID-19 infections, with total cases reaching 263,532,223 and total deaths being 5,224,797 [5], with adults aged 20 to 49 being the only age group accounting for sustained transmission of infection [6]. Transmission of disease had been at an exponential rate with values peaking up to 0.19–0.29/day during early pandemic [7] with factors like sociodemographic, Human Development Index (HDI), the prevalence of Non-Communicable Diseases (NCDs) risk factors, healthcare resources, and expenditure, and government interventions determining the Incidence Rate Ratio (IRR) of cases at the first five days of exposure.

As the infection progresses to days 10 and 15 since the first exposure, HDI, healthcare resources, and expenditures are the chief determinants of spread [8]. COVID-19 vaccinations in the US started on December 13, 2020 [9], and presently the vaccines approved are Pfizer BioNTech, Moderna and Johnson, and Johnson's Janssen [10].

Despite the availability and adequate accessibility of vaccines, there's a concerning rise in vaccine hesitancy, more so due to distrust and lack of proper information as the vaccines are being made out of newer technology with a lack of concrete details about its long-term use and outcome [9,11].

Relationship between how COVID-19 further increases the rate of Syphilis in the USA COVID-19 significantly precipitated the spread of various STIs by means of various social cofactors including lockdowns. Among those STIs, syphilis is worth mentioning, which is surging in the USA amid COVID-19 because of decreased in-person patient care due to social distancing and reduced syphilis screening [12].

Another important reason is that sexual health care staff being reassigned to COVID-19-related work and clinics being used for COVID-19 treatment instead of STDs. In fact, 83% of STI programs reported

abandoning services and field visits because of the COVID-19 surge and dangers affiliated with coronaviruses [12].

The pandemic has aggravated the existing challenges experienced by pregnant mothers. Lack of access to transportation and unavailability of programs supporting prenatal care have led to increasing birth of babies suffering from syphilis [12].

Treatment options are narrowed down because the Gold standard treatment of Syphilis-penicillin G benzathine is not available to treat the affected mothers. The reason is it is expensive and difficult to store in primary care centers.

A decrease in funds and investments for public health clinics during COVID-19 because the funds have been diverted for treating COVID-19 has resulted in a dramatic rise in syphilis.

The main determinants of the increased spread of syphilis during the COVID-19 pandemic include unsafe sexual activities, reduced STI screening, lack of sufficient staff during the pandemic, and abandoning of STI programs and services [13]. Factors such as lack of transportation and healthcare programs during the lockdown, and unavailability of medications due to increased prices resulted in increased syphilis among babies born to mothers with syphilis.

2. Effects of the increased financial burden

According to the Centers for Disease Control and Prevention, the omicron strain is fast spreading in the US. It could peak in a significant wave of infections as early as January 2022 [14]. The new strains of SARS-CoV-2 put an extravagant burden on disease prevention, challenging the surveillance and prevention of the emerging strains.

The preventive domain of the healthcare system employs efforts in containing the current outbreaks and mobilizing resources to gain informatics on the emerging strains and epidemics.

Syphilis control programs may be decelerated due to the current pandemic situation. One aspect is the extra-mobilization of health resources and funds towards combating the COVID-19 pandemic and scarce finances for syphilis control. This may fuel the syphilis surge amidst the COVID-19 pandemic [4].

According to the CDC, the prevalence of omicron increased sevenfold in a single week. At this rate, the highly mutated variation of the coronavirus could put further strain on a health system that is already overburdened in many locations as the delta variety continues to spread. This is an alarming threat to the United State's syphilis control programs. Further neglect to the syphilis upsurge may deteriorate the situation as the disease control units of the US healthcare system may focus solely on curbing the omicron surge.

3. Current efforts

The Sexually Transmitted Infections National Strategic Plan (STI Plan for the United States 2021–2025) has been constructed through a thorough process that incorporated feedback from stakeholders in the healthcare and associated industries. This is a five-year plan to reverse the recent significant surge in STIs in the United States.

In the United States, high-quality STI prevention, care, and treatment are envisioned, as well as a life free of stigma and discrimination [15]. It includes everyone, regardless of gender, age, gender identity, race, socioeconomic status, ethnicity, sexual orientation, disability, religion, or geography.

The goals, objectives, and strategies employed in the past lacked a collaboration between federal partners as well as non-governmental stakeholders, including state, tribal, territorial, and local governments, researchers, health plans and providers, community groups, and national and local organizations that work in STI and related fields [16]. This problem has been addressed in the current STI plan [15]. Recently, many committees have been founded to evaluate the obstacles in STI control programs in the US.

The National Academies of Sciences, Engineering, and Medicine

(NASEM) committee aims at investigating current public health strategies and programs to prevent and control STIs, as well as epidemiological dimensions, the economic burden associated with STIs, and barriers in the healthcare system and insurance coverage associated with the prevention and treatment of STIs. [17] This committee released a report on March 24th, 2021, focussing mainly on four areas of action, including adopting a sexual health paradigm, embracing innovations, bolstering existing systems and programs, and broadening ownership and accountability. [18] These activities demonstrate the stakeholders' and health strategists' concern about the syphilis outbreak and STIs in the United States.

4. Conclusion

Syphilis is a highly contagious but treatable sexually transmitted disease that affected 7 million individuals in 2020, with MSM being the most significant cause. Necessary and timely action can prevent the serious effects of syphilis. Comprehensive prenatal screening should be ensured while observing the SOPs of COVID-19. Primary prevention in high prevalence areas can decrease more than half of the cases. If outbreaks occur in areas where authorities have little experience to manage syphilis, then authorities must seek consultation from outside. Awareness must be raised among individuals involved in sexual activities and pre-exposure prophylaxis (PrEP) for syphilis should be introduced in effective areas.

5. Recommendations

Effective programs and policies should be developed for the control and treatment of syphilis-affected mothers and babies as pre-existing policies and programs do not cover the measures to be taken in case of pandemics such as COVID [19].

Low or no-cost clinics should be made available for offering screening and healthcare services for at-risk individuals. As many at-risk individuals fail to get screening and healthcare services mainly because of affordability [20]. Effective telehealth programs should be devised to overcome the gap in person-to-person care due to social distancing in the current pandemic enabling individuals at risk to get one-on-one help in the current situation [21].

STI clinics and programs should be effectively modified to work with the limited resources available due to the current pandemic. As most of the healthcare sources have been directed toward COVID, these programs need to be updated to enable maximum efficiency [22].

Encouraging people to visit STI clinics following proper COVID SOPs if they suspect any signs or symptoms of syphilis or have unprotected intercourse with an infected individual and promoting safe and healthy sexual conduct [23].

Ethics approval and consent to participate

Yes.

Conflicts of interest

None to disclose.

Sources of funding

No funding received.

Author contribution

All the authors contributed to the outlines of the paper, writing, editing, proofing, and final approval of the paper.

Consent

Not Applicable.

Author contribution

All the authors contributed to the outlines of the paper, writing, editing, proofing, and final approval of the paper.

Registration of research studies

1. Name of the registry: Not Applicable
2. Unique Identifying number or registration ID: Not Applicable
3. Hyperlink to your specific registration (must be publicly accessible and will be checked):

Guarantor

Abubakar Nazir.

Consent for publication

Yes.

Availability of data and material

Yes.

Funding

None.

Authors' contributions

None.

Declaration of competing interest

The authors declare no conflicting interests.

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