



## Sexually Transmitted Infections During the COVID-19 Pandemic in a Swedish Healthcare Region Without Lockdown: A Focus On Gonorrhea and Syphilis

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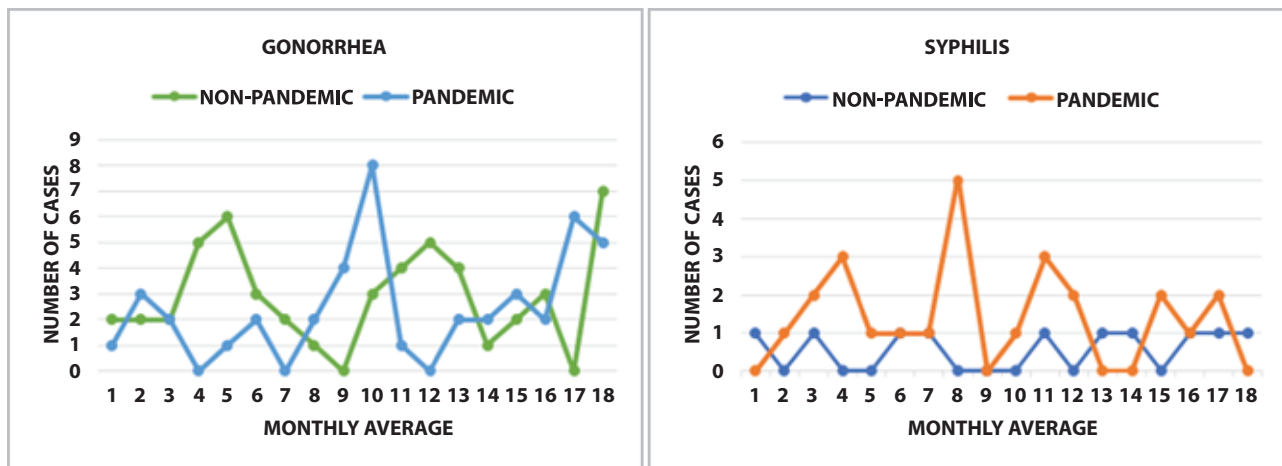
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### Introduction

In late December 2019, the first case of infection with SARS-CoV-2 was reported [1]. In March 2020, the pandemic was declared and led to the collapse of the health care functioning [2]. The normal access to specialist care was not always guaranteed in many countries around the world. In March 2020 the pandemic reached Sweden and the Public Health Agency of Sweden issued recommendations to people aged from 70 years or older and risk groups including physical distancing. The incidence of syphilis and gonorrhea in the COVID-19 pandemic in Sweden has not been studied yet in contrast to several other countries. Several studies reported a decrease in early syphilis and gonorrhea cases and one from the Czech Republic showed an initial decrease of early syphilis followed by a significant increase during the pandemic (March 2020 – February 2021)[3-6].

### Case presentation

We aimed to compare the incidence of gonorrhea and syphilis in Region Jonkoping County healthcare region in Sweden during the 18-month COVID-19 period with the non-pandemic period. This was a retrospective, observational cohort study done in the three hospitals (Ryhov County Hospital, Highland Hospital of Nassjo, and Varnamo Hospital) in Region Jonkoping County (RJC), which is part of the southeast healthcare region in Sweden providing a healthcare for approximately 360,000 inhabitants. The study was a quality review study approved by the operations manager and Head of Department of Dermatology at Ryhov County Hospital in Jonkoping County Region according to Section 31 of the Health and Medical Services Act, which was published in *Lakartidningen* (2015; 112: C9CL).



**Figure 1.** Number of cases of gonorrhea (by culture or nucleic acid testing) and early syphilis (by serology or nucleic acid testing) during pandemic (April 1, 2020 – September 31, 2021) and non-pandemic period (October 1, 2018 – March 31, 2020).

We analyzed monthly cases of gonorrhea and syphilis at our three hospitals. We have observed a significant increase in syphilis cases during the pandemic (April 1, 2020 – September 31, 2021) compared to non-pandemic period (October 1, 2018 – March 31, 2020). The difference in the number of gonorrhea cases during pandemic versus non-pandemic was not significant. Twenty-five cases of syphilis were reported during the pandemic and only 10 syphilis cases during the non-pandemic period ( $P = 0.0143$ , 95% CI 1.20-5.20, RR 2.49). Forty-four gonorrhea cases were reported under the pandemic period and 52 gonorrhea cases under the non-pandemic period (Figure 1).

## Conclusions

The effect of the pandemic on sexually transmitted diseases (STDs) frequency is difficult to explain due to differences in pandemic social restriction measures worldwide. The implementation of the measures was expected to reduce not only the spread of COVID-19 but also STDs. The incidence of syphilis and gonorrhea decreased during the pandemic according to reports from several countries with lockdown [3–5]. One study reported an increase in the incidence of syphilis when social measures were subsequently relaxed [6]. On contrary, the access to healthcare was not affected with the pandemic in Sweden, and the tracking of cases and partner notification was functioning as during the time before the pandemic. The

increase in newly diagnosed syphilis cases during pandemic might be explained not only by light COVID-19 restrictions and poor compliance with recommendations for social distancing but also rising STDs trend.

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