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Preference of syphilis acquired in the county of Porto Nacional-TO in the period of 2015 to 2018

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# Preference of syphilis acquired in the county of Porto Nacional-TO in the period of 2015 to 2018

Preferencia de sífilis adquirida en el condado de Porto Nacional-TO en el periodo de 2015 a 2018

Prevalência de sífilis adquirida no município de Porto Nacional-TO no período de 2015 a 2018

### ABSTRACT

The objective of this study is to analyze the distribution and prevalence of Syphilis Acquired through the data recorded in the Information System for Notifiable Diseases (SINAN) in the Municipality of Porto Nacional - TO in the periods from 2015 to 2018. Method: It is a descriptive and exploratory study with a quantitative approach in the form of a retrospective survey. The study population consisted of all cases of Acquired Syphilis, notified and registered by the Municipality's SINAN. Results: A gradual increase in cases of Syphilis was found in Porto Nacional - TO. The confirmation criteria used for diagnosis of the infection and most notified sites, the laboratory criterion and notifications carried out in the Basic Health Units stand out. Conclusion: It was demonstrated that there is a low prevalence of syphilis in the Municipality, however, there is a trend of progressive growth of the infection. In this way, it strengthens the need for actions aimed at controlling this disease.

**DESCRIPTORS:** Prevalence; Syphilis; Notification.

### RESUMEN

El objetivo de este estudio es analizar la distribución y prevalencia de Sífilis Adquirida a través de datos registrados en el Sistema de Información de Enfermedades Notificables (SINAN) del Municipio de Porto Nacional - TO en los períodos 2015 a 2018. Método: Es un método descriptivo y estudio exploratorio con enfoque cuantitativo en forma de encuesta retrospectiva. La población de estudio estuvo constituida por todos los casos de Sífilis Adquirida, notificados y registrados por el SINAN del Municipio. Resultados: Se encontró un incremento paulatino de casos de Sífilis en Porto Nacional - TO. Se destacan los criterios de confirmación utilizados para el diagnóstico de la infección y lugares más notificados, el criterio de laboratorio y las notificaciones realizadas en las Unidades Básicas de Salud. Conclusión: Se demostró que existe una baja prevalencia de sífilis en el Municipio, sin embargo, existe una tendencia de crecimiento progresivo de la infección. De esta forma, refuerza la necesidad de acciones dirigidas al control de esta enfermedad.

**DESCRIPTORES:** Prevalencia; Sífilis; Notificación.

### RESUMO

O objetivo deste estudo consiste em analisar a distribuição e prevalência de Sífilis Adquirida através dos dados registrados no Sistema de Informações de Agravos de Notificação (SINAN) no Município de Porto Nacional - TO nos períodos de 2015 a 2018. Método: Trata-se de um estudo descritivo e exploratório com abordagem quantitativa na forma de uma pesquisa retrospectiva. A população do estudo foi constituída por todos os casos de Sífilis Adquirida, notificados e registrados pelo SINAN do Município. Resultados: Foi encontrado um aumento gradativo de casos de Sífilis em Porto Nacional - TO. Os critérios de confirmação utilizados para diagnóstico da infecção e locais mais notificados, destaca-se o critério laboratorial e notificações realizadas nas Unidades Básicas de Saúde. Conclusão: Demonstrou-se que há uma baixa prevalência de sífilis no Município, entretanto, nota-se uma tendência de crescimento progressivo da infecção. Desse modo, fortalece a necessidade de ações voltadas para o controle desse agravo.

**DESCRIPTORES:** Prevalência; Sífilis; Notificação.

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**INTRODUCTION**

**S**yphilis is one of the important STIs (Sexually Transmitted Infections), it is a systemic infection, caused by the bacterium *Treponema pallidum* (*T. pallidum*). Exclusive to humans, infectious-contagious and sexually transmitted, its contagion is greater in the early stages of the infection, when not treated early, it can evolve into a chronic disease with long-term irreversible sequelae, affecting several organs.<sup>1</sup>

According to the World Health Organization (WHO), it is estimated that, worldwide, more than 1 million cases of STIs occur per day per year, it is estimated that about 357 million new infections, including chlamydia, gonorrhoea, syphilis and trichomoniasis.<sup>2</sup>

In Brazil, the population most affected by syphilis are women, mainly black and young, aged between 20 and 29 years. This group represents 14,4% of all reported cases of acquired syphilis in pregnant women. In the comparison by sex, women aged 20 to 29 years account for 26,2% of the total number of reported cases, while men in this same age group represent only 13,6%, suppose that there is underreporting compared to men due to low demand for health services.<sup>3</sup>

Acquired syphilis can manifest itself in two ways: syphilis acquired during pregnancy and congenital syphilis, which is the consequence of the first, affecting the

fetus, also has four very marked manifestations. The natural history of the disease shows an evolution that alternates periods of activity with distinct clinical, immunological and histopathological characteristics (primary, secondary and tertiary syphilis) and latency periods (recent latent syphilis and late latent syphilis).<sup>4</sup>

Primary syphilis is characterized by an initial lesion, erosion or ulcer at the entry site of the bacteria, which is called "hard chancre", being generally single, painless, with a hard base and rich in treponemas. This stage disappears spontaneously, regardless of treatment.<sup>5</sup> Secondary syphilis usually occurs between six weeks to six months after the initial infection, this phase is the result of hematogenous and lymphatic spread of the infection, involves cutaneous, mucosal and systemic symptoms, headache, low-grade fever, anorexia, weight loss and increase lymph nodes. There is often no clear demarcation between the primary and secondary phases.<sup>2</sup>

Tertiary syphilis is the most serious stage of the disease, as it occurs after a long latency period, and may appear between two and 40 years after the onset of infection. It occurs in about 30% to 40% of untreated or inadequately treated patients. Usually, it changes only appear after years (more than 3 years of infection) and are often located in the skin, mucous membranes, cardiovascular and nervous systems.<sup>6</sup>

In Brazil, congenital syphilis has been considered a condition of compulsory notification since 1986. However, only syphilis in pregnant women and acquired syphilis became conditions of compulsory notification from 2005 and 2010, respectively.<sup>7</sup> The compulsory notification of acquired syphilis is now constituted, through Ordinance No. 2.472, of August 31st, 2010.<sup>8</sup>

It is important for health professionals to know and know what type of population they are dealing with in order to make the actions effective and impactful on the population's sexuality and health, also encouraging other health professionals during these educational activities to recognize and notify this disease. The guidelines in relation to syphilis must be passed on to that public, respecting the age and the levels of understanding in the individuality of each one. Since the main figure for controlling the disease is the population itself.<sup>9</sup>

Given the above, the following research problem arose: "What is the prevalence of notified cases of syphilis acquired in the SINAN (Information System for Notifiable Diseases) of Porto Nacional - Tocantins in the period from 2015 to 2018?"

The relevance of the theme of this study comes from recognizing the epidemiological reality of the Municipality of Porto Nacional in the context of acquired syphilis, which can generate subsidies for a better planning of actions that become more efficient in the

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control of this disease and, thus, enable a reduction in the number of cases when relating to current data from Brazil.

The objective of this study is to analyze the distribution and prevalence of Acquired Syphilis through data recorded in the Notifiable Diseases Information System (SINAN) in the Municipality of Porto Nacional - Tocantins in the periods from 2015 to 2018.

## METHOD

This is a descriptive and exploratory study with a quantitative approach in the form of a retrospective research that was

carried out through the collection of the Information System of Notifiable Diseases (SINAN) database of the Municipality of Porto Nacional - TO.

The study population consisted of all cases of Acquired Syphilis, notified, confirmed and registered by the SINAN of the municipality of Porto Nacional in the period from 2015 to 2018. Cases that were not about acquired syphilis, which were not complying with the established period, from 2015 to 2018 and final classification of the case were discarded.

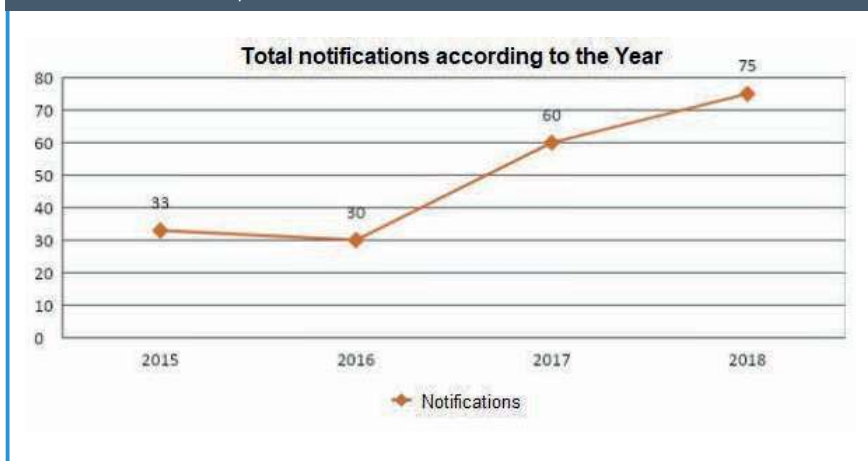
The variables used were related to the socio-demographic profile: type of notification, health unit, date of diagnosis, date of

birth, age, sex, pregnant woman, race/color, education, municipality of residence, district, district and zone. Variables related to the epidemiological profile: occupation, history of syphilis, treatment and sexual behavior. Variables related to the clinical profile: test results, non-treponemal test, treponemal test, clinical classification; treatment scheme performed, final classification of the case and additional observations.

As a data collection instrument, the SINAN notification form script on Acquired Syphilis was used. The period of data collection was in the months of September and October 2019. An analysis was carried out in the SINAN database based on the syphilis notification form acquired. Data collection was carried out at the institution surveyed in the SINAN notification sector of the epidemiological surveillance of the municipality of Porto Nacional. For the days and dates of collection, a prior appointment was made by the researchers with the person responsible for the file.

After data collection, they were organized and tabulated in a Microsoft Excel 2007 spreadsheet. Quantitative variables received descriptive treatment using the public domain Bioestat version 5.0 software. Quantitative statistical analysis was in percentage, mean and standard deviation. Subsequently, the results were presented in graphs, based on other published studies. The research project was approved by the Ethics and Research Committee of FAPAC ITPAC Porto under opinion number 3.468.309.

Figure 1. Distribution of Acquired Syphilis according to year of notification. Porto Nacional - TO, 2015 to 2018.



Source: Notifiable Diseases Information System (SINAN), 2019.

Figure 2. Distribution of Acquired Syphilis according to confirmation criteria for the diagnosis of infection. Porto Nacional - TO, 2015 to 2018.



Source: Notifiable Diseases Information System (SINAN), 2019.

## RESULTS

This study corresponds to an analysis of epidemiological data obtained from the Epidemiological Surveillance of the Municipality of Porto Nacional - Tocantins, which describes the cases of acquired syphilis in the period from 2015 to 2018. The data reveal a considerable increase in the total number of syphilis cases from 2016 onwards; where 2018 was the year with the highest rate of infected patients. Figure 1 shows the total number of notifications of syphilis acquired in Porto Nacional - Tocantins in the last 4 years.

In the last four years, 198 cases of syphilis acquired in Porto Nacional - Tocantins were reported, in 2015, 33 (17%), in 2016 30 (15%), 2017 60 (30%), and in 2018 75 (38%), demonstrating an increasing frequency of the disease from the year 2016.

As shown in Figure 2, in relation to the criteria for confirming the diagnosis of infection, the laboratory criterion stands out, which predominated in all years, equivalent to 31 cases in 2015, 25 in 2016, 47 in 2017 and 52 in 2018, characterizing 78% of the samples.

Regarding the places of notifications carried out in the Basic Health Units (UBS), there was a marked growth in all years as shown in Figure 3. 2 (1%) cases were notified in 2015, 10 (5%) in 2016, 32 (16%) in 2017 and in 2018 50 (25%) cases.

## DISCUSSION

Syphilis is a systemic infectious disease of chronic evolution, caused by *Treponema Pallidum*. Untreated disease progresses over many years. In 2010 syphilis became mandatory/mandatory notification. Conducting epidemiological surveillance of infections or sexually transmitted diseases (STI/STD) is of great importance for public health.<sup>10</sup>

From 2010 to June 2018, 479.730 cases of acquired syphilis were reported in SINAN, of which 4,1% are from the North region. In 2017, the total number of cases

reported in Brazil was 119.800. In the stratification by regions, 5.890 (4.9%) were observed in the North Region. Between 2016 and 2017, it was found that Brazil and regions showed growth in their detection rates. In the country, the increase was 31,8% (from 44,1 to 58,1 cases per 100.000 inhabitants), the increase was 45% in the Northern Region (from 22,9 to 33,2 cases per 100,000 inhabitants). As for the detection rate of acquired syphilis according to the Federative Unit (UF) and capital in 2017, Tocantins (70,3 cases/100.000 inhab.) is observed, and in relation to the capitals, twelve of them had a higher detection rate than the national, among them: Palmas (135,8/100 thousand inhab.)<sup>8</sup>

In this study, the data reveal a considerable growth in the total number of syphilis cases in all years, in which 2018 was the year with the highest rate of infected patients, however, in 2016 there was a small drop in the number of patients notified, suppose It should be noted that, as acquired syphilis started to be notified as of 2010, professionals and the population did not have much knowledge about the registration and the importance of being notified, because until then, there was only notification of gestational and congenital syphilis. Over the years and training health professionals have learned that it is essential to notify acquired syphilis and also practice health education with the population, especially in primary

care, thus increasing the demand for quick exams/tests.

According to previous studies, it was observed nationally that the increase in the number of notifications over the years is attributed not only to the number of cases that multiplied, but also to the improvement of epidemiological surveillance actions for a better identification and approach of the suspicious events of the disease, thus reducing the number of underreports.<sup>10</sup>

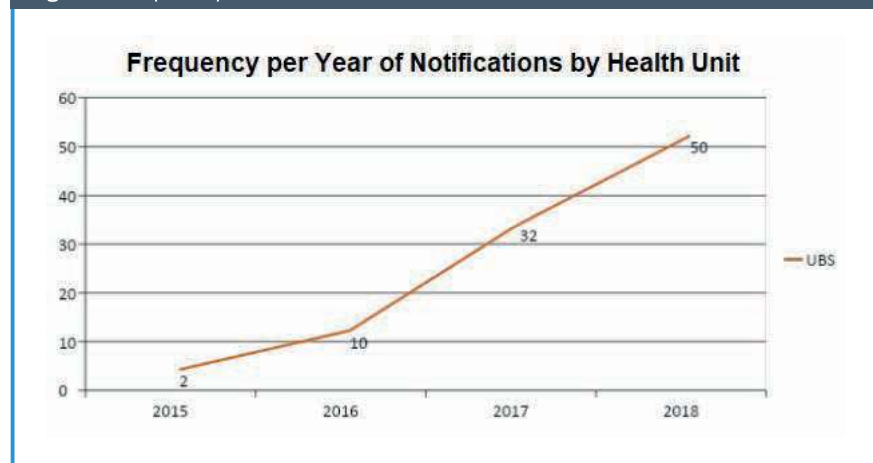
Regarding the confirmation criteria, the laboratory method was the most used because it is easy to access and quick to diagnose. The laboratory diagnosis of syphilis depends on the stage of infection, the tests available are basically divided into two categories: direct and indirect tests (treponemal and nontreponemal).<sup>11</sup>

Non-treponemal indirect exams are the most used, they are quick tests and some of them do not require laboratory structures, the most used, for example, is the VDRL, however, trained professionals are needed to perform and interpret the results. This test facilitates diagnosis in key populations and promotes immediate care within the SUS assistance structure.<sup>12</sup>

Direct tests are those that seek to find the bacteria in the sample to be analyzed. Direct diagnostic techniques are only applicable in the early stage of infection (primary and secondary syphilis). Currently, three main techniques are used: dark field microscopy, direct immunofluorescence (DIF) and genomic amplification techniques, which are rarely used in primary care because they are considered difficult and there is a need for trained professionals to collect the serous exudate from active lesions and send them to the laboratory.<sup>11</sup>

Secondly, the clinical epidemiological method was the least used, considering that lesions take a long time to appear and are usually located in barely visible parts (in the vaginal wall, cervix or perineum) which makes their diagnosis difficult. The early stage of the disease has an incubation period of approximately 10 days to 90 days after exposure and may spontaneously remit within 2 weeks to 8 weeks. Primary syphilis is characterized by an initial lesion, erosion or

Figure 3. Distribution of Acquired Syphilis according to the place with the highest frequency of notifications. Porto Nacional - TO, 2015 to 2018.



Source: Notifiable Diseases Information System (SINAN), 2019.



ulcer at the entry site of the bacteria, which is called “hard chancre”, being generally single, painless, with a hard base and rich in treponemas. This stage disappears spontaneously, regardless of treatment.<sup>8</sup>

Regarding notifications made in Basic Health Units, there was a marked growth every year, showing the increase in notifications in Primary Care, due to joint technical note No. 391/12 that has been applied and prioritized in Basic Health Units, where the Ministry of Health prepared this note claiming that rapid tests must be carried out in basic health units by health professionals trained to perform, read, interpret results and issue reports, giving due seriousness to the results found.<sup>13</sup>

## CONCLUSION

The study showed that there is a low prevalence of syphilis in the city, however there is a trend of progressive growth of the infection from the year 2016. It was observed that, as in other Brazilian cities, there is probably underreporting of acquired syphilis in the Municipality of Porto Nacional – Tocantins. It was also verified the absence of completeness of the notification forms by health professionals, which made the analysis of some results of the profile unfeasible, thus indicating a failure in filling out the forms. Although there is a low prevalence, there are some points that can be enhanced in the fight against syphilis in the city. Gre-

ater attention to health that establishes prioritization and closer and more dynamic assistance to groups classified as vulnerable, health education work, with lectures, guidance in waiting rooms and campaigns, so that the enrolled population is educated about the importance of combating this problem. It is also necessary to continuously train health professionals to carry out an early diagnosis and understand the importance of notification and completeness of the records, since this factor was also presented as an obstacle to control this disease. Thus, the increase in epidemiological coefficients in recent years in the city strengthens the need for actions aimed at controlling this disease. ■

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