

## **Sexually Transmitted Infections in Children Under 9 Years of Age. Cuba 2016-2020**

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### **Abstract**

**Introduction:** Sexually transmitted infections (STIs) are considered a serious public health problem worldwide. The significance is even greater when diagnosed during childhood.

The ways in which they are transmitted are from mother to child, during pregnancy, childbirth and breastfeeding or because girls or boys have been victims of sexual assault.

**Objective:** Identify |Sexually transmitted infections in boys and girls under 9 years of age.

**Method:** A retrospective descriptive study cross-sectional study showing sexually transmitted infections such as: syphilis, gonorrhea, condylomata acuminata and genital herpes simplex from 2016 to 2020.

The information was obtained through the Statistical Information System of Mandatory Notifiable Diseases (EDO) from the years 2016 to 2020 of the Ministry of Public Health of Cuba. The results are presented in tables and graphs.

**Results:** Progress in Cuba in the eradication of congenital syphilis is appreciated. The incidence of cases of gonorrhea, condylomata acuminata and genital herpes shows an upward trend. The female sex is the most affected.

**Conclusions:** Vertical transmission from mother to child and sexual violence are generators of sexually transmitted infections (STIs) in childhood, there is a tendency to increase STIs worldwide in addition to Cuba and adhere to compliance with the provisions of the protocols of STI prevention are adequate in the eradication of congenital syphilis.

**Keywords:** *Childhood; Sexually Transmitted Infections*

## Introduction

Childhood is the period of life of people that includes from birth to puberty; childhood. It extends from birth to 9 years. Childhood is constituted and characterized by three stages: Infants, Early childhood (infants) and second childhood or childhood itself [1,2].

During this stage there are important changes in their development, that is, at a physical, intellectual and social level. Various capacities and abilities are acquired that they will display in the future as an adult in full social conquest [3].

We think of childhood once the child is in the postnatal stage, however, the prenatal period has a significant influence on the future life of the infant. The pregnant woman, her lifestyle, medical care during pregnancy and even medical advice prior to pregnancy, with the aim of making the mother-child binomial healthy, come to play their primary role.

The pregnant woman and the family are very concerned about possible congenital malformations that the fetus could be carrying without taking into account that among its possible causes are sexually transmitted infections [4].

Sexually transmitted infections are a set of infectious-contagious clinical conditions that are transmitted from person to person through sexual contact that occurs almost exclusively during sexual intercourse, including the vaginal sex, the anal sex and the oral sex. However, they can also be transmitted by use of syringes contaminated or by contact with blood or other secretions. Most sexually transmitted infections are caused by two types of germs: bacteria Y virus, but some are also caused by mushrooms Y protozoa [5].

The Strategic Plan for the prevention and control of STIs provides for the surveillance of syphilis, gonorrhea and extends to viral hepatitis in pregnancy, since they can be transmitted from mother to child. It includes the establishment of the Protocol for vaginal discharge syndrome in pregnant women, which establishes timely and early treatment. All this with the aim of preventing preterm birth and intrauterine growth restriction, which in many cases is related to the STI event [6,7].

Genital infections such as syphilis, gonorrhea, genital herpes simplex, papillomavirus infection cause fatal consequences in the fetus, newborn and in childhood.

Syphilis is a curable infectious disease, produced by the bacterium *Treponema pallidum*, identified in 1905. It is sexually transmitted, although it can also be passed from mother to fetus or during childbirth causing congenital syphilis.

It can cause abortion, preterm labor, or fetal or neonatal death. If the product of conception is born with this infection, it can present mucocutaneous lesions, long bone osteochondritis, mucopurulent rhinitis, jaundice and/or anemia, pneumopathies, gastroenteritis, pseudoparalysis and dystrophies. Statistically, perinatal death is reported in about 40% [6,7].

Gonorrhea or gonorrhoea is an STI generally transmitted through sexual contact. *Neisseria gonorrhoeae* is a gram-negative aerobic coccus that affects the genitourinary tract, also the rectum, occasionally the eyes, and with the possibility of hematogenous infection of the synovial and serous membranes. In the newborn it causes gonococcal conjunctivitis [5].

Regarding human papillomavirus (HPV) infection today, more than 60 types of HPV have been isolated and more than 20 of them are capable of infecting the anogenital tract. Most infected women are asymptomatic and infect the neonate at birth and cause laryngeal papilloma [5].

## Genital herpes virus (HSV-2)

Neonatal herpes is acquired at the time of birth due to the active maternal infection at that time. It corresponds to 70 - 80% of herpes virus infection.

Herpes acquired at birth can cause localized, systemic, and disseminated disease.

Localized infection produces skin lesions with cutaneous-mucosal lesions in areas subjected to trauma during childbirth, such as the face and scalp. Systemic infection can cause encephalitis and neurological disorders, and disseminated infection can affect organs such as the liver, lungs, kidneys, and brain. This type of infection often turns out to be fatal [5,7-10].

Another form of acquisition of STIs in childhood is through sexual abuse, which is a manifesto of violence.

The phenomenon of violence is understood as a social process that includes the most varied forms of aggression and that is characterized by having a multiplying and expansive effect that not only affects the victims, but also society as a whole, it is an intentional behavior and harmful, which can be passive or active; that is, by action or by omission [11].

Its origin is multifactorial and it speaks of biological or hereditary facts, as well as the combination of the development environment. However, it is also important to note that the consequences of any type of violence can be irreversible in the person affected and that they perpetuate the continuation of more violent events. Child Abuse is a Medico-Social-Legal problem of such magnitude that it has been considered by the World Health Organization as a global public health issue since 1999 [11,12].

In 2006, the Secretary-General of the United Nations presented to the General Assembly a world report on violence against children by an independent expert. An estimated 150 million females and 73 million males under the age of 18 had forced relationships or suffered other forms of sexual violence. While the statistics are staggering, the report clarifies that the figures fall short. An analysis carried out in 21 countries indicates that in some places up to 36% of women and 29% of men have been subjected to some type of sexual assault during childhood. Most of the aggressors were family members [13-15].

In Cuba, the hard work in the family code is inclined by the need to create a legislative framework aimed at the prevention, care and rehabilitation of victims of violence and even more so of child sexual abuse, as it is considered as a terrible higher scale of violence [16].

Taking into account the principle of protection of children, which defends public health in Cuba, it was decided to expose an aspect related to the topic not widely addressed in the literature "Sexually transmitted infections during childhood."

### Method

A retrospective descriptive study was carried out showing sexually transmitted infections such as: syphilis, gonorrhoea, condylomata acuminata and genital herpes simplex from 2016 to 2020 in a population under 9 years of age.

The information was obtained through the Statistical Information System of Mandatory Notifiable Diseases (EDO) from the years 2016 to 2020 of the Ministry of Public Health of Cuba. The results are presented in the form of tables and graphs.

### Analysis of the Results

In Cuba, the report is carried out (on a mandatory basis) of the STIs detected by the different levels of Public Health.<sup>17</sup> These include syphilis, gonorrhoea, genital herpes simplex and the Human Papilloma Virus that will be detailed below taking into account pediatric age groups during the years 2016 through 2020.

Descriptive statistics are used, showing the results in numbers and percentages. Tables and graphs are shown that will meet the objective of offering additional information about these STIs when they occur during childhood.

Table 1 Shows how the number of reported cases of syphilis decreased considerably from 2016 to 2020, with 8 cases being observed in 2016 with 30.8% and 3 in 2020 with 11.5%.

Year	Under 1 year				1 - 4				5 - 9				Total	
	Male		Feminine		Male		Feminine		Male		Feminine			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2016	4	50.0	3	37.5	0	0.0	One	12.5	0	0.0	0	0.0	8	30.8
2017	One	14.3	Two	28.6	Two	0.0	0	28.6	One	14.3	One	14.3	7	26.9
2018	One	16.7	0	0.0	0	0.0	0	0.0	Two	33.3	3	50.0	6	23.1
2019	0	0.0	One	50.0	0	0.0	0	0.0	One	50.0	0	0.0	Two	7.7
2020	0	0.0	0	0.0	0	0.0	One	33.3	0	0.0	Two	66.7	3	11.5
Total													26	100

**Table 1:** Behavior of syphilis in children under 9 years of age. Cuba 2016-2020.

Source: Statistical Information System for Compulsory Notifiable Diseases (EDO). Directorate of Medical Records and Health Statistics, Minsap.

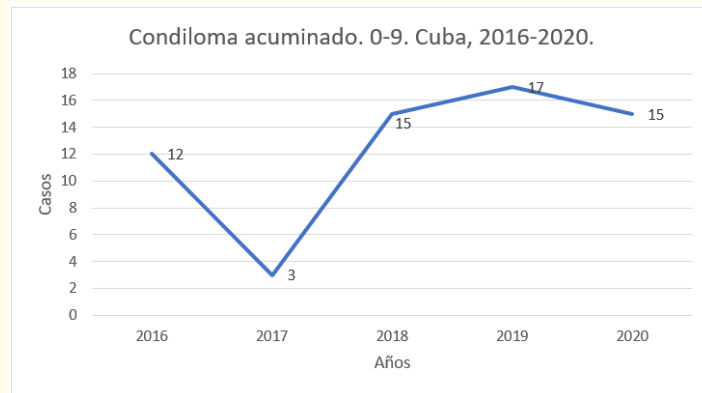
The reduction of cases occurs in a similar way in children under 1 year of age. One of the main advances in Public Health is shown. Cuba keeps mother-to-child transmission of congenital syphilis eliminated. Condition for which it received the revalidation certificate by the WHO in 2017.

Table 2 shows a decrease in condyloma from the year 2020 in females at the ages of 1 to 4 years.

Year	under 1 year				1 - 4				5 - 9				Total	
	Male		Feminine		Male		Feminine		Male		Feminine			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2016	0	0	One	8.3	0	0.0	4	33.3	Two	16.7	5	41.7	12	19.4
2017	0	0	0	0.0	One	33.3	0	0.0	One	33.3	one	33.3	3	4.8
2018	0	0	0	0.0	One	6.7	One	6.7	4	26.7	9	60.0	Fifteen	24.2
2019	One	5.9	0	0.0	One	5.9	Two	11.8	4	23.5	9	52.9	17	27.4
2020	0	0.0	0	0.0	One	6.7	0	0.0	4	26.7	10	66.7	Fifteen	24.2
Total													62	100

**Table 2:** Behavior of condyloma acuminata in children under 9 years of age. Cuba 2016-2020.

A decrease in this condyloma infection can be seen as of 2017 graph 1.



Graph 1: Condyloma acuminatoin children under 9 years of age. Cuba 2016-2020.

When analyzing the behavior of gonorrhoea in this population under study, no cases were reported in children under 1 year, not so for the female sex in the ages of 1 - 4 years with 3 cases which denoted an increase since its analysis in the Year 2016 compared to 2020 table 3.

Year	Under 1 year				1 - 4				5 - 9				Total	
	Male		Feminine		Male		Feminine		Male		Feminine			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2016	0	0	0	0.0	0	0.0	One	33.3	Two	66.7	0	0.0	3	23.1
2017	0	0	0	0.0	0	0.0	0	0.0	Two	100.0	0	0.0	Two	15.4
2018	0	0	0	0.0	0	0.0	0	0.0	One	50.0	One	50.0	Two	15.4
2019	0	0.0	0	0.0	One	33.3	0	0.0	One	33.3	One	33.3	3	23.1
2020	0	0.0	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	3	23.1
Total													13	100.0

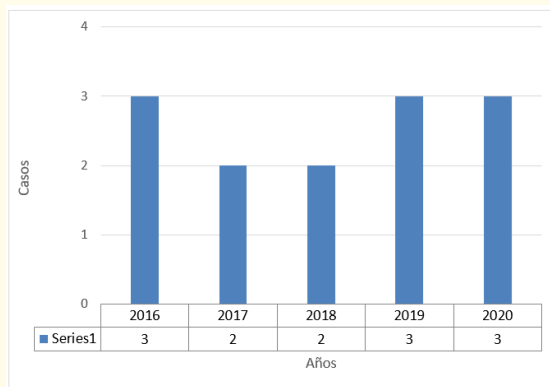
Table 3: Behavior of gonorrhoea in children under 9 years of age. Cuba, 2016-2020.

A total of 25 cases are reported with genital herpes simplex with an increase in the number of cases from the years 2019 and 2020.

Year	under 1 year				1 - 4				5 - 9				Total	
	Male		Feminine		Male		Feminine		Male		Feminine			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2016	0	0	0	0	One	Twenty	0	0	Two	40	Two	40	5	20.0
2017	0	0.0	0	0.0	One	14.3	Two	28.6	Two	28.6	Two	28.6	7	28.0
2018	0	0	0	0	0	0	One	100	0	0	0	0	One	4.0
2019	0	0	0	0	One	Twenty	0	0	3	60	One	Twenty	5	20.0
2020	0	0.0	0	0.0	One	14.3	0	0.0	Two	28.6	4	57.1	7	28.0
Total													25	100.0

Table 4: Behavior of genital herpes simplex in children under 9 years of age. Cuba 2016-2020.

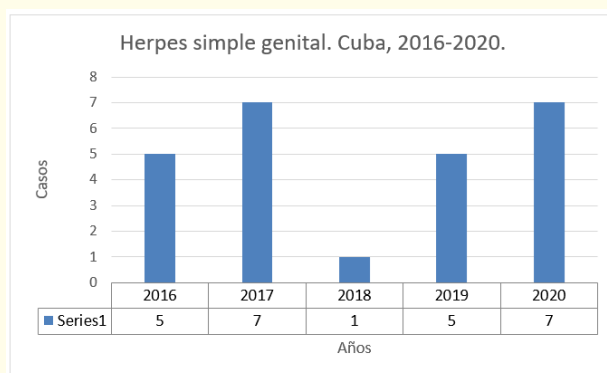
Source: Statistical Information System for Compulsory Notifiable Diseases (EDO). Directorate of Medical Records and Health Statistics, Min-sap.



**Graph 2:** Gonorrhea in children under 9 years of age. Cuba, 2016-2020.

Source: Shows that after a decrease in 2017-2018, the cases increased, reporting similar figures to 2016 again in 2019 and 2020.

Graph 3 shows how despite the fact that in 2018 it decreases significantly, the report of cases rises in 2019 and in 2020 to values similar to those of 2016 and 2017.



**Graph 3:** Genital herpes simplex. Cuba, 2016-2020.

Source: Statistical Information System for Compulsory Notifiable Diseases (EDO). Directorate of Medical Records and Health Statistics, Min-sap.

### Discussion

Talking about sexually transmitted infections (STIs) in childhood forces us to think about two possible causes:

- STIs that are transmitted vertically during pregnancy, childbirth and lactation, that is, from mother to child.
- Children who are victims of sexual abuse.

### Adverse events of STIs during pregnancy, childbirth and lactation

STIs include a series of infectious diseases in which sexual transmission is of epidemiological interest.

There are several that are transmitted from mother to child such as syphilis, chlamydia trachomatis, gonorrhoea, genital herpes, human papillomavirus infections, acquired immunodeficiency virus, hepatitis B virus, and cytomegalovirus [18].

Although it is reported that new infections in children have decreased by 58% worldwide, their concern during vertical transmission it keeps. It is argued that only in the United States the increase in the number of congenital syphilis observed between 2012 (8.4 cases per 100,000 births) and 2014 (11.6 cases per 100,000 births) is reported [19].

In the case of syphilis, the possible causes of transmission in children under one year of age may correspond to maternal-fetal transmission, classifying them as: early congenital syphilis when diagnosed with less than two years or late congenital syphilis in cases with the diagnosis after two years [6].

There is literature consulted that states that the systematic detection of STIs has no reason to be during pregnancy, except in the case of a suggestive clinical picture or in the case of STIs detected in the sexual partner. Syphilis and HIV serologies are highly recommended in early pregnancy [20].

However, in Cuba, following the proposal of the World Organization (WHO) in the "Global Strategy for the prevention and control of Sexually Transmitted Infections 2016 - 2021", adopted at the World Health Assembly in 2016, it draws up the Plan Strategic for the prevention and control of STIs, HIV and hepatitis that together with the Maternal Care Program-Infantile, great importance is attached to the arrest of syphilis, gonorrhoea, HIV and hepatitis B-C to each pregnant woman and her partner [6,7,21].

And the National Strategic Plan for the prevention and control of STIs, HIV and hepatitis foresees the work in the case of congenital syphilis confirmed or suspected in the STI protocol [6].

The algorithm is based on the clinic and laboratory: with the search for a history of an untreated infected partner or a history of maternal syphilis treated or not; The presence of clinical signs suggestive of the disease in the neonate during the physical examination is important as well as the serological diagnosis, being recommended, in addition, complementary in search of lesions in the organism by the spirochete. Treatment, clinical, dermatological and serological follow-up are firmly established [6].

During the three trimesters of the gestation period is carried out taking samples for complementary tests pertinent, being these effective and efficient to appropriate treatment as soon as possible [22].

During the physical examination of each pregnant woman, active search for signs of HPV infection and genital herpes is vital.

It is essential to point out that at the national level, protocols are being worked on for the management of genital discharge syndrome, abdominal pain and for the management of urethral discharge syndrome and that the notification of all of them is mandatory [6,23,24].

All these actions not only prevent STIs in fetuses and newborns, but also serve for the prophylaxis of preterm delivery and the restriction of intrauterine growth in which, when they occur, the search for other infections included in the protocol is activated as part of their protocols. TORCH syndrome.

The cases of condyloma reported in children under one year of age are usually reported in neonates with the presence of oro-pharyngeal lesions and gonorrhoea in newborns that is conducive to gonococcal conjunctivitis. All of these infections are acquired by passing the product of conception through the infected birth canal [25].

Early diagnosis and treatment are the necessary tools to mitigate complications and sequelae.

The care of the pregnant woman with a diagnosis of STI is multidisciplinary, with medical care not only by the Obstetrician, but also by Dermatology, Proctology, Urology and Psychology. It is necessary to point out the importance of the Genetics Program during prenatal care with the screening of possible fetal malformations that are produced by some of these infections [6,7,26].

All this hard work developed by the Ministry of Public Health has placed Cuba as one of the countries with the lowest incidence of STIs in vertical transmission [27-29].

### STIs and child violence/sexual abuse

Violence is defined as all those manifestations of individuals or groups that cause the death of other people or damage to their physical or moral integrity are considered, in general, as something that prevents the realization of human rights: the right to life [30].

In the case of child violence, depending on the nature of the act, it may be: physical abuse, sexual abuse, psychological or emotional abuse, neglect.

Sexual violence against children and adolescents is the most serious child abuse. Considering as the worst form of violation of human rights.

Violence as a social phenomenon has been present in all societies since ancient times, nuanced by the characteristics of each era. Violence is not only a reflection of the general functioning of society, as it also shows the lack of correspondence between the widespread vision of the family as a space of security, tranquility, and the reality of families that reproduce violent practices. In this social fabric, affection and solidarity converge, with relationships of conflict and authority [31].

Child sexual abuse is not a new pathology, but one of the forms of child abuse that accompanied the development of man throughout his history. It is the most hidden of the mistreatments and the least known, both in the medical-legal environment and in the social one.

The most commonly used definition of child sexual abuse is that of Schechter and Roberge: Sexual abuse is defined as the dependent and immature involvement in their development, in sexual activities that they do not fully understand and for which they are unable to give their informed consent. or that violate the social taboos of family roles [31].

Coercion seen as physical force, pressure or deception, should be considered by itself sufficient criteria for a conduct to be classified as sexual abuse of a minor, regardless of the age of the aggressor [32].

It is a growing phenomenon of global connotation that encompasses complex forms. It is a phenomenon that affects all social and cultural strata. Worldwide it is described that one in four girls was attacked before the age of 16; 20 - 30% of women suffered sexual abuse during childhood or adolescence, 20% of girls and 10% of boys have suffered abuse before the age of 17 and 39% - 83% of all girls with developmental disabilities are sexually abused before reaching the age of 18 [33-35].

In Latin America: Only one in three cases of sexual abuse is reported, and 80% of these complaints correspond to girls and adolescents. In the Caribbean region: 11% of adolescent women report having been victims of sexual abuse [36,37].

Violence as a form of social relationship and universal phenomenon that has its specificities in the spaces in which it occurs, generates victims, who in turn suffer biological, psychological injuries with social, cultural and spiritual reflections [11].



Studies on family health in cases of sexual abuse have shown a significant association with dysfunctional families: maladjusted parents, not socially adapted, presence of marital conflicts and/or with the rest of the family. Low school level, poor accommodation, overcrowding prevail; Existence of addictions such as alcoholism or drug use [1,30,38,39].

The most frequent characteristics of sexual abuse during childhood is that it is observed in ages between 5 - 12 years, the highest percentage of the events occur in the home and the perpetrator is frequently a relative, a person known to the family and the child/to. The highest percent corresponds to acute aggression with a predominance of lascivious abuse. According to Barbero Funks, they are characteristics of the victimization process and, citing María Amelia Acevedo, places them at risk due to the high probability of suffering the violation of human rights: Right to life, health, food, education, security [32,38,39].

In abused infants, victims of that social and family environment, the victimization process occurs, which is considered as the way to imprison the will and desire of the child, to submit it to the power of the adult to coerce it in order to satisfy interests, expectations or passions of it [40].

When the fact is made known, either by the confession of witnesses or by suspicion of relatives, a criminal investigation process begins. In the different procedural acts that take place during the investigation phase, the minor may be re-victimized or secondary victimized [41].

The main elements that generate revictimization are: the delay in the proceedings and the multiplicity of examinations prior to the designed process, the presence of the victim during the formulation of the complaint and Obtaining their testimony in addition to the necessary medical examinations or expertise to carry out [41].

In Cuba, the Centers for the Protection of Girls, Boys and Adolescents (CPNNA), responsible for the comprehensive care of minors who are victims of child sexual abuse, advocate that the conditions and elements that favor secondary victimization are eliminated in post of the physical and mental well-being of the infant.

Taking into account the political will of the Cuban government as a signatory country to the Convention and in compliance with the provisions of the Optional Protocol to the Convention, in its Article No. 8, Methodologies for the protection and care of minors who are victims were developed. of sexual abuse. Hard work is done to offer specialized treatment in the criminal prosecution that causes the secondary victimization of the child mostly victimized by society or domestic or gender violence who are generally exposed [42].

The family, society should not ignore this matter. Government agencies must be aware of this situation in order to effectively and efficiently combat abuse during childhood.

It is adjusted in the Sustainable Development Goals proposed by the WHO (objectives 3 and 5) and in Cuba it is included in the Guidelines of the Economic and Social Policy of Cuba [43-47].

## Conclusions

- There are two main causes why a boy or girl can acquire STIs. The one produced by the maternal-fetal route in which the active screening during pregnancy makes the diagnosis and rapid and timely treatment of the pregnant woman or the newborn or the cases of children who suffer from sexual abuse and who painfully go through the process of victims, victimizers and secondary victimization.
- The female sex is the most likely to be a victim of sexual abuse and suffer victimization and secondary revictimization.
- Compliance established in government strategies against STIs are beneficial to both the individual, the couple and society.

## Recommendations

- Carry out educational interventions in the adults responsible for the infant for the prevention and protection of sexual abuse.
- Active and conscious work with a comprehensive approach on vulnerable groups of contracting STIs.

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