



## EDITORIAL

## Increase in sexually transmitted infections in adolescents: An urgent challenge

### Aumento de infecciones de transmisión sexual en adolescentes: un desafío urgente

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Sexually transmitted infections (STIs) are a growing public health problem. Every day more than a million STIs are diagnosed worldwide, and the adolescent population is considered a high-risk group.<sup>1,2</sup>

The current estimates of the World Health Organization (WHO) for the incidence of STIs amount to 376 million new cases of the four main curable STIs (chlamydia, gonorrhea, syphilis and trichomoniasis). European data reported by the European Centre for Disease Prevention and Control (ECDC) also show an increasing trend, with a total of 434 727 cases of chlamydia infection reported in 2023 and the highest incidence found in women aged 15 to 25 years. When it comes to gonorrhea, in 2023 in Europe there was a 31% increase compared to 2022 and of more than 300% compared to 2014, with a significant impact on adolescents and young adults, an issue compounded by the grave problem posed by the emergence of antimicrobial resistance. These infections have also increased in our country. The latest STI epidemiolog-

ical surveillance bulletin for Spain, from 2023, reports the highest figures for both gonococcal and *Chlamydia* infections in the group aged 20 to 24 years.<sup>2</sup>

Studies on other STIs show similar trends, and there is evidence that infection by human immunodeficiency virus (HIV) is also increasing in youth and is underdiagnosed compared to the adult population. At the global level, 410 000 new HIV infections were reported in youth aged 10 to 24 years in 2021, out of which 160 000 occurred in adolescents aged 10 to 19 years.

### Changes in society and the peculiarities of adolescents

Society has changed in recent times, and sexual debut takes place at increasingly early ages (16.2 years), and there has also been an increase in the number of sexual partners, a decrease in the use of barrier methods and the use of substances in association with it.<sup>3,4</sup>

Adolescents engage in risk behaviors, starting sexual activity with insufficient information or not having received comprehensive sex education, which is essential. Access to social media at an early age facilitates the consumption of pornography, distorting their view of sexuality, as

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Barrios Miras and Esquerda Arete describe in their special article.<sup>5</sup> Furthermore, they lack knowledge about prevention. According to the official report on youth in Spain of 2020, only 77% of young people aged 15 to 24 years use condoms, with usage decreasing as age increases. Some studies carried out in Spain's reference STI clinics show that early sexual debut and a previous history of STI are factors associated with contracting an STI, once again demonstrating the lack of awareness and information in this age group.<sup>4</sup>

## Preventive measures and actions

In light of these events and seeking to revert the increasing trend in STIs, a global health sector strategy was developed seeking their eradication by 2030. However, the 2024 report on progress and gaps in this strategy published by the WHO shows that these figures, rather than decreasing toward the intended target, continue to increase.

In Spain, the 2021–2030 Plan for the Prevention and Control of HIV infection and STIs is underway, and, in this context, the Ministry of Health has implemented initiatives like the campaign named *Yo soy del sexo seguro* (I am for safe sex/I am of the safe sex) with the aim of creating awareness of STIs in the young population, promoting prevention, self-care and taking responsibility for one's own sexual health and that of one's partners.

Also in line with this plan, the Ministry of Health and the Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica (SEIMC, Spanish Society on Infectious Diseases and Clinical Microbiology) have collaborated in the development of the new guidelines for the management of STIs, addressing the particularities of the adolescent population.<sup>6</sup>

Different measures and strategies have been found effective in preventing STIs. They include abstinence, which is not very feasible for adolescents, or barrier methods (condom use), which may be most advisable, although they are not used universally by adolescents, chiefly due to a lack of information/education in this age group, but also to the spontaneity of many sexual encounters in which these methods may not be available. The Ministry of Health is also promoting the initiative of making barrier methods free to adolescents to increase their use.

It is important to be aware of other preventive measures, such as pre-exposure prophylaxis (PrEP), approved for use from age 16 years to prevent infection by HIV, although it is only indicated in identified risk groups. Another measure of increasing popularity is doxycycline postexposure prophylaxis (DoxyPEP) for prevention of syphilis and gonorrhea, also aimed at risk groups. Other possible preventive measures include vaccines, some still under investigation, as is the case of HIV or gonococcal disease. However, some are already available, such as the vaccine against human papillomavirus (HPV), which is recommended and included in the routine vaccination schedule for preadolescents of either sex aged 10 to 12 years and proven highly effective in preventing genital and anal warts and various cancers. The meningococcal B vaccine (4MenB), currently included in the routine vaccination schedule for adolescents to prevent meningococcal infection, has been found to offer cross-protection against gonococcal infection.

## Consequences of STIs in the adolescent population

Asymptomatic STIs are more common in adolescents than in adults, making their surveillance and diagnosis more difficult for the public health system. The immaturity of the genital tract in adolescents increases morbidity. At the same time, there has been an increase in the incidence of pelvic inflammatory disease in this age group, and the disease usually manifests with nonspecific symptoms, resulting in delayed diagnosis and impacting future fertility in affected individuals.

## Management

Sexually transmitted infections (STIs) in adolescents pose two key challenges: the lack of specific care pathways and patient confidentiality, which hinder care delivery and contribute to underdiagnosis. Organizations such as the American Academy of Pediatrics (AAP) recommend screening sexually active adolescents, but there are no standardized protocols in Spain regarding the frequency of screening or the management of STIs.

These infections are managed in different settings, including hospitals, STI clinics, which may or may not offer specific services for adolescents, and centers specialized in adolescent care that prioritize direct and confidential care delivery to adolescents and do not require accompaniment by a legal guardian.

Still, innovative strategies are being developed to address STIs that make use of emerging technologies. One example is the introduction of rapid testing at the point of care (PoC). These strategies need to be adapted to the adolescent population, which requires additional information on the subject of prevention. Interventions that target adolescents must be designed to deliver education about STIs and information on where to get tested. Digital tools may be useful for this purpose, including engagement of social networks widely used by adolescents or other innovative approaches, such as mobile health (mHealth) applications such as communication through text messaging.

In short, STIs are a growing problem in the adolescent population. There is a pressing need to launch comprehensive sexuality education interventions. Comprehensive education should be approached from the home and school settings as well as society as a whole and the health care system. Care pathways and protocols adapted for STIs in adolescents are also needed. The implementation of all these strategies could revert the current increasing trend in STIs and improve the health of this vulnerable population.

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