

# IFMSA Policy Document

## Sexually Transmitted Infections

Proposed by Team of Officials

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## Policy Statement

### Introduction:

There are 374 million new infections each year with 1 of 4 curable STIs: chlamydia, gonorrhoea, syphilis, and trichomoniasis. STIs are linked to poor mental, physical, and social impacts in individuals and broader communities, and many different barriers to lowering this burden exist.

### IFMSA position:

The International Federation of Medical Students' Associations (IFMSA) highlights the importance of holistic healthcare services that are inclusive, non-discriminatory, free from stigma, accessible, and affordable to all, regardless of their identities. Many social factors perpetuate barriers to accessing services. Thus, we underscore the need for eliminating STI-related stigma, ensuring comprehensive sexuality education and awareness-raising campaigns, and improving access to prevention, testing, and treatment for STIs. Considering the global challenges, such as economic costs and growing antimicrobial resistance, we support innovative initiatives such as digital health and harm reduction strategies. Moreover, we emphasize the role of medical education and training in equipping healthcare professionals with the knowledge and skills to provide quality care for patients with STIs.

### Call to Action:

Therefore, the IFMSA calls for:

#### Governments to:

- Mandate, fund, and oversee regular and robust surveillance for STIs to understand better the prevalence and incidence in their populations and make STI testing accessible and affordable for all.
- Support and enforce the implementation of comprehensive sexuality education in schools which is age-appropriate, medically accurate, and must include information on STIs, safer sex practices, and the benefits of vaccination where applicable (for example, HPV).
- Invest in healthcare systems and infrastructure capable of delivering high-quality, effective STI prevention and treatment services while ensuring a sufficient supply of necessary medicines, diagnostic tools, and trained healthcare personnel.
- Prioritize and allocate funding towards ongoing research into STIs, developing new treatments for incurable STIs, and enhancing existing treatments for curable STIs.
- Lead campaigns to decrease the stigma and discrimination associated with STIs and encourage individuals to seek testing and treatment without fear of social repercussions.
- Actively collaborate with NGOs and other stakeholders to offer novel solutions and harness the power of community outreach.
- Develop and enforce policies that protect the rights of people living with STIs, including non-discrimination, confidentiality, access to barrier contraception, and other preventive measures.
- Ensure that vaccines for preventing STIs are included in the national immunization program and are available for all eligible populations.

#### Non-governmental organizations to:

- Add client-focused and rights-based services for STIs prevention, diagnostic, treatment and care services to their offering health services.
- Providing social and psychological assistance services for people with STIs.
- Distribute medical self-care tools, including interventions such as self-testing, barrier contraceptives and treatment choices.
- Establish long-term partnerships with health sectors to enhance referrals to medical facilities and specialists for other services.

**Health sector and healthcare providers, including researchers, to:**

- Consult the Guidelines of Care for Lesbian, Gay, Bisexual, and Transgender (LGBT) Patients for advice on communicating with LGBTQIA+ patients.
- Encourage intersectoral collaboration in research to promote advancements in prevention strategies and treatment options and advocate for increased funding in STI research programs.
- Work with policymakers and community leaders to eliminate barriers and advocate for equitable access to care while addressing the socioeconomic and cultural determinants and disseminating non-discrimination statements to ensure equal care for all, regardless of age, race, ethnicity, physical attributes, religion, sexual orientation, or gender identity/expression.
- Encourage multidisciplinary collaboration between healthcare providers, researchers, public health officials, policymakers, community organizations, and advocacy groups to develop comprehensive strategies and implement evidence-based interventions against STIs.
- Enable digital health tools to reach a broader audience, provide remote counseling and testing services, and promote adherence to treatment regimens. Leverage the power of data analytics and artificial intelligence to identify trends, predict outbreaks, and optimize resource allocation for STIs.
- Promote accessible, inclusive, and effective prevention strategies, including routine testing, vaccination against prevalent STIs, consistent and correct condom use, and championing regular screenings and early detection for timely treatment in comprehensive healthcare.

**Pharmaceutical companies, including barrier contraception producers to:**

- Invest in research and development, including new drugs, vaccines, diagnostic tools, barrier contraceptives, and other innovative treatments and preventive measures for STIs.
- Ensure that STI treatments, vaccines, and barrier contraceptives are accessible and affordable to individuals across different socioeconomic backgrounds and geographic regions.
- Adhere to stringent regulatory standards and guidelines during the development, manufacturing, and marketing of STI treatments and barrier contraceptives to ensure safety, efficacy, and quality.
- Foster collaborations with governments and other stakeholders to support and enhance existing STI prevention and treatment programs.
- Implement sustainable manufacturing practices to minimize the environmental impact associated with the production of STI treatments and barrier contraceptives.

**Educational sector to:**

- Promote STI awareness and create a safe and supportive environment on campus for all students regardless of their STI status.
- Prioritize disseminating evidence-based education and research, like comprehensive sexual health education, including STIs, in school curricula to empower individuals to make informed decisions regarding sexual health. By fostering open conversations, promoting healthy behaviors, and dispelling misconceptions, we can challenge stigma and reduce the transmission of STIs.
- Establish partnerships with healthcare providers and local hospitals to ensure teachers and staff are equipped with the latest information about STIs, their transmission, screening, and treatment.
- Offer confidential STI screening services on campus and education on prevention strategies.
- Organize lectures and seminars to enhance students' understanding of STIs and their prevention.
- Foster research on STIs' epidemiology, prevention, and treatment by providing adequate resources.

**NMOs and medical students to:**

- Deepen their understanding of the biopsychosocial issues related to STIs, including stigma, discrimination, and accessibility to healthcare.
- Undertake research related to STIs, including epidemiology, prevention, treatment, and stigma.
- Organize workshops, seminars, and campaigns to promote STIs awareness, address barriers to prevention and treatment, and reduce stigma.
- Advocate for policy changes, improve access to STI prevention, testing, and treatment services, and reach out to medical universities to increase STIs inclusion, including non-discriminatory health services, in the medical curriculum.

## Position Paper

### Background information:

Sexually Transmitted Infections (STIs) are caused by over 30 known pathogens transmitted through sexual contact, including vaginal, anal, and oral sex. Some of these infections may also be transmitted via blood or blood products or vertical transmission (from a pregnant person to their offspring) when breastfeeding or in pregnancy. Eight pathogens have been identified by the World Health Organisation (WHO) as linked to the greatest incidence of STIs. Four of them are currently curable: syphilis, gonorrhoea, chlamydia, and trichomoniasis; the other four are currently incurable: hepatitis B virus (HBV), herpes simplex virus (HSV), human immunodeficiency virus (HIV), and human papillomavirus (HPV) [1]. This position paper will not address the global HIV epidemic, as IFMSA has a separate policy document on HIV and AIDS response.

The burden of STIs is large, with over 1 million people acquiring an STI every day, yet remains under-recognized. STIs often have higher incidence and worse outcomes in medically underserved and marginalized populations, such as men who have sex with men (MSM), commercial sex workers (CSW), adolescents, and more [2]. The clinical manifestations of STIs are varied and linked with serious clinical and social impacts and may pose drastic consequences to systemic health. Some STIs, such as syphilis and HSV, dramatically increase the likelihood and severity of HIV infection [3]. Vertical transmission of STIs may cause adverse obstetric outcomes, including stillbirth and neonatal deaths. HPV infections cause oropharyngeal and cervical cancer and are linked to over 310,000 cervical cancer deaths annually. Hepatitis B can cause liver cirrhosis and hepatocellular carcinoma and is responsible for an estimated 820,000 deaths in 2019. Furthermore, gonorrhoea, chlamydia, and other untreated STIs are also leading causes of infertility and pelvic inflammatory disease (PID) in people with uteruses [1,2].

The WHO has created a global strategy to combat HIV, viral hepatitis, and STIs for the period 2022-2030, promoting synergies under a Universal Health Coverage (UHC) framework and contributing to the Sustainable Development Goals (SDGs) for 2030 [4]. However, significant barriers to reducing the number of STIs globally exist. Around the world, many STI services are underfunded or neglected, and left-behind groups lack access to healthcare services, leading to poor rates of screening, contact tracing of partners, and vaccines. Discrimination and stigma around STIs, marginalization of various populations, and poor implementation of comprehensive sexuality education have further led to inadequate STI surveillance, negatively impacting individuals living with STIs [1]. Furthermore, STIs are becoming increasingly difficult to treat, with growing antimicrobial resistance (AMR), especially in *Neisseria gonorrhoeae* [5,6]. Thus, swift action is needed to conduct more research into STIs in left-behind groups and implement new approaches to case management [7,8].

### Discussion:

#### Incidence, Prevalence and the Burden of STIs

Each year, there are an estimated 374 million new infections with 1 of 4 curable STIs: chlamydia, gonorrhoea, syphilis and trichomoniasis [1]. This number is likely to be higher due to the limited quantity and quality of prevalence data from different regions [9]. Furthermore, asymptomatic individuals may not be tested, and a combination of stigma, unawareness and marginalization of marginalized groups prevent others from accessing healthcare [10,11]. Furthermore, outbreaks of non-sexually transmitted

infections that can be transmitted through sexual contact, including monkeypox, Ebola and Zika, further complicate the already inadequate provision of services for STI prevention and control [1].

The Western Pacific Region accounts for 15% of the global burden of sexually transmitted infections [12]. However, epidemiological surveys have shown that between countries in the same region, and even between populations within countries themselves, the prevalence and incidence of STIs may vary widely, reflecting differences in individual underlying determinants such as poverty, inequality, racial discrimination, unemployment, gender inequality, migration, and healthcare coverage and quality [9,13,14].

Condoms are one of the most effective methods of protection against many STIs, but they require correct and consistent use to be effective. Vaccines are also available for HPV and HBV and have been incorporated into routine immunization programs in many countries [1]. Prevention programs focus on empowering individuals and communities to avoid risky sexual behaviors in their specific context and should reduce the stigma associated with STIs. Furthermore, Godin G et al.'s study shows that improved reach of STI surveillance and screening, as well as increased availability of condoms and vaccines, are crucial to curb the spread of STIs [9].

Populations at greater risk of contracting STIs include those engaging in risky sexual behavior secondary to drug or alcohol use, those who use drugs during sex, those with multiple or concurrent partners engaging in sex without barrier contraception, and those who engage in the services of CSWs [15]. Left-behind populations, such as CSWs, homeless persons, lower-income individuals, migrant workers, ethnic minorities, mobile and refugee populations, and prison inmates, are prone to greater high-risk sexual activity and are more frequently sexually assaulted and abused, leading to increased risk of STIs as a result of multiple and intersecting forms of discrimination. Furthermore, their political and social exclusion and restriction by the law often mean they are harder to reach and treat, which may be linked to such individuals having more severe presentations. Victims/survivors of sexual violence may also be at increased risk of acquiring STIs [16]. Biologically, those with female reproductive organs are more susceptible to STIs due to anatomy and patriarchal control of safer sex practices [1,11]. LGBTQ+ individuals, in addition to men who have sex with men (MSM), may be at increased risk for STI infection due to a host of social factors (such as the stigmatization, discrimination, and lack of sexual education) [17]. There may be secrecy, a lack of communication between partners, or poor awareness and knowledge of STIs and their prevention, often due to a lack of proper comprehensive sexuality education, especially for adolescents, which may contribute to detrimental sexual health practices [11].

Research has shown that men who have sex with men (MSM) are at significantly higher biological risk of HIV transmission compared to other populations due to anal sex, estimated to be as much as 18 times greater than the risk associated with vaginal sex. Several biological factors, including the rectal tissues' single-layer epithelial cells (as compared to multiple layers in the vaginal tissue), fragility, and susceptibility to tearing, as well as the high concentration of CD4 T cells, contribute to the increased risk of HIV infection in the rectum.[18][19]

## **STIs and health**

### *Non-communicable diseases*

Non-communicable diseases (NCDs), such as stroke, heart disease, diabetes, chronic respiratory disease and cancer, account for more than 70% of all deaths, nearly half of which are among people under the age of 60 [20]. Noncommunicable diseases are common among people living with HIV [21].

This effect is even more prominent in developing countries as it is strongly associated with lifestyle risk factors. Recent research has shown HIV could increase the risk of multiple NCDs. High-level usage of tobacco and alcohol, low level of physical activity, and fruit and vegetable consumption could be the risk factors associated with NCDs in people living with HIV and AIDS. Also, the harmful use of alcohol can lead to sex without barrier contraception and risk of STIs, including human papillomavirus (HPV) and HIV[22].

### *Infertility*

Sexually transmitted diseases are common causes of human infertility worldwide. Chlamydia trachomatis and Neisseria gonorrhoeae are the leading causes of pelvic inflammatory disease (PID), which causes 10-40% of tubal infertility in untreated women and increases the likelihood of ectopic pregnancy sixfold above. In addition to these important bacterial STIs, many other bacteria that may be sexually transmitted (e.g., Gardnerella vaginalis, Mycoplasma hominis and Mycoplasma genitalium, Ureaplasma urealyticum) have been associated with bacterial vaginosis, which is a common disorder of the microbiome, which increases a woman's risk of PID and infertility [23].

Multiple factors can affect female infertility, such as endocrine, vaginal, cervical, uterine, tubal, and pelvic-peritoneal factors. Approximately 30% of female infertility in the United States is associated with Tubal factor infertility (TFI). TFIs are mostly caused by salpingitis, an inflammation of the epithelial surfaces of the fallopian tubes, and subsequent pelvic-peritoneal adhesions due to previous infection. Chlamydia trachomatis and Neisseria gonorrhoeae are mostly related to salpingitis and infertility. Also, other pathogens such as Mycoplasma genitalium, Trichomonas vaginalis, and other microorganisms within the vaginal microbiome can have a role in tubal damage and infertility. Also, in males, STIs can lead to fertility problems by causing damage to the epididymis and urethra[24,25].

### *Mental health*

STI diagnoses can affect physical and mental health in the short term and long term. Misinformation and stigma around STIs affect their mental health and can cause further stress in their lives. STD diagnosis can affect their self-esteem and relationships with their partners or peers. They usually may fear rejection and judgment, making them isolated and lonely [26,27]. Numerous outcomes of improved mental and physical health, such as a decline in mortality, HIV, depression, dementia, coronary heart disease, drug misuse, and post-traumatic stress disorder, have been associated with social support. Additionally, it has been discovered that social support alters the connection between acculturative stress and physical health [28].

STI-related stressors in schools impact mental health. Stigma is a key stressor, affecting the psychological well-being of people living with STIs, disclosure of STI status by said people, and health and treatment adherence. Stressors affecting psychological well-being were fear of death/ permanent disfigurement (especially in HIV) and uncertainty of the future compounded by financial and academic challenges [29]. The disclosure's stressors centered around lack of privacy, confidentiality, and fear of

losing friends. Stressors affecting treatment adherence included lack of privacy while taking drugs, unintended disclosure while obtaining drugs or seeking permission to attend clinic appointments, and fear of drug adverse effects due to poor nutrition [30].

## **Stigma**

To address the stigma associated with STIs, it is essential first to clarify what stigma means and how it differs from discrimination. Stigma refers primarily to the (negative) thoughts and perceptions that are internalized regarding a particular topic, in this case, STIs and STDs. Discrimination, however, is the expression of these stigmas in actions and behaviors towards affected individuals and groups [31,32]. STI-associated stigma can reinforce global inequities in medical treatment and social status, which particularly affect minorities and multiply discriminated groups of people. Stigma can prevent affected individuals from seeking STI testing services, for example, or information and counseling from health professionals[33] [34]. Cunningham et al., for example, showed that young women with highly reported STI stigma were less likely to take advantage of STI screening tests [34].

Even in hospital settings, stigma against HIV-positive individuals (PLWH) prevents them from receiving the best care, which may have an impact on their quality of life and psychological health. There are several levels of stigma in healthcare settings. Personal actions and attitudes have an impact at the individual level, but at the clinic level, clinic-type location and characteristics can result in social injustice and stigmatization of PLWH. The stigma in a healthcare context may also be impacted by policies at various policy levels, such as institutional policies, support policies, and training policies [35].

The stigma associated with STIs may discourage people from asking for and seeking out services related to them, and the criminalization of sexual activities linked to STI transmission may limit access to evidence-based resources and services[33].

## **Non-discriminatory health services and counseling on STIs**

To achieve health equity, it is imperative to ensure non-discriminatory health services and counseling for sexually transmitted infections. Health equity encompasses providing equal opportunities for individuals to achieve optimal health, regardless of their background, including race, ethnicity, income, gender, religion, sexual identity, and disability. A key step towards promoting health equity is the education of affected communities about STIs and the underlying factors contributing to these epidemics. By increasing knowledge and awareness, communities can proactively work towards improving their health outcomes and advancing health equity. Research indicates that certain people of color or ethnic minority groups experience higher rates of STIs than their white counterparts due to social conditions such as poverty, income inequality, limited job opportunities, and lower education levels, disproportionately affecting minority communities. Limited access to quality sexual health services can also be a challenge for individuals who cannot afford basic needs. [36][37][11] Furthermore, people of color and ethnic minorities may have a lack of trust in the healthcare system, fearing discrimination from healthcare providers. [38] Accessing health services for STIs can be hindered by social barriers, such as fear and stigma associated with these infections [39][40][41], as well as judgmental and discriminatory behavior from healthcare staff and providers [42][43]. Young people, in particular, may face additional obstacles in accessing STI services compared to older individuals due to limited financial resources, lack of information, and heightened sensitivity to others' perceptions. [39][40][44]

To comprehensively understand the barriers to STI care, evaluating them among a population beyond those who actively seek clinic attendance is important. This includes considering individuals who may

seek asymptomatic screening, as their perspectives are crucial in identifying factors that prevent people from getting tested or treated. Additionally, as knowledge, attitudes, sexual practices, exposure to STIs, and healthcare-seeking behavior can vary among different social groups [45][46–48], efforts to improve services for a broader population should involve a diverse sample of participants to gather relevant information.

Many who avoid screening consider the potential outcomes of STI-related stigma to be worse than the perceived threat to their physical health. This indicates a lack of knowledge about the diseases and potential health outcomes and increases susceptibility to morbidity due to STI contraction [49]. In low- and middle-income countries, the most frequently reported barrier to youths accessing sexual health services was the acceptability of the services themselves. Youths reported avoiding services over fears surrounding confidentiality, stigma, judgment from service providers, and shame [50]. Crucially, some service providers admitted to judging those who sought STI services and felt uncomfortable and incompetent in providing care [51]. WHO states that sexual health education should be comprehensive and encompass pre- and post-test counseling [52]. Methods to increase the availability and/or accessibility to condoms or include additional individual, small-group, or community-level components along with condom distribution have been efficacious in increasing condom use behaviors. A study of a campus-based STI prevention condom distribution intervention for African-American women attending a historically Black college in North Carolina showed promise for community-based interventions for increasing condom use [53]. Screening and assessing mental health within sexual health clinics can also help identify those at risk of mental illness associated with their STI and offer appropriate support [54].

#### *Advice for counseling*

It's essential to provide an inclusive and welcoming environment when providing STI therapy to individuals. Utilizing People First Language, which places the individual before their diagnosis and respects both their core identity and the language they use to describe themselves, is one approach to do this. According to Albert Mehrabian's 7-38-55 Rule of Personal Communication [23], effective communication involves more than just verbal language; it also takes into account paraverbal cues (tone, pitch, volume, and pacing) and non-verbal cues (body language, facial expression, posture, gestures, and spatial distance).

LGBTQIA+ patients may assess their comfort level with healthcare providers based on visual cues. Brochures that address LGBT health issues can be displayed alongside symbols or stickers that show LGBTQIA+ friendliness to foster a welcoming environment. Furthermore, it is crucial to spread non-discrimination statements that guarantee that all patients receive the same level of treatment, irrespective of their age, race, ethnicity, physical ability, religion, sexual orientation, or gender identity or expression. Offering gender-neutral restrooms can help create a more inclusive environment, and patient intake forms ought to include options for inclusivity regarding sex and gender.

Healthcare professionals should be inclusive when speaking with patients, using terms like "relationship status" rather than "marital status," while providing them with options to express their gender identity. A trustworthy environment can be created by raising awareness among all staff members—from security guards to medical personnel—and promoting accountability. Guidelines developed by reputable groups like the Gay and Lesbian Medical Association can be an excellent resource for information on interacting with LGBTQIA+ patients. It's essential to handle sensitive situations with respect and confidentiality. For example, when addressing name and gender record mismatches, healthcare professionals should be



prepared to handle these situations sensitively, ensuring that patient information remains confidential. Understanding patient expectations and apologizing for any mistakes or instances of insensitivity can help rebuild trust and facilitate a constructive dialogue.

Partner notification and referral are crucial for preventing further transmission of STIs. Understanding the nature of the patient's relationship can help determine the most effective referral strategy, which may include expedited partner therapy. Behavioral interventions tailored to specific social and cultural attributes can effectively modify sexual behavior and healthcare-seeking behaviors related to STIs. In communities with distrust towards the medical profession, involving local community leaders can positively influence engagement. Addressing barriers to engagement, such as providing childcare, transportation, and meals, is essential for successful intervention programs.[55–59]

### **STIs and medical education/training**

Public health strategies highlight the importance of sexual histories in the primary and secondary prevention of sexually transmitted infections. Yet, despite being considered a necessary component in the identification of STIs, it is often lacking in healthcare. [60] [61]

According to studies and medical students' experiences, several factors contribute to the lack of sexual history-taking in healthcare settings. These factors include discomfort with the topic, cultural differences, fear of being intrusive, and lack of knowledge.[62] [63,64] These barriers can be overcome by incorporating formal education, cross-cultural and cultural competency training, and ensuring that sexual health education fosters in students and clinicians confidence and comfort in their knowledge and sexual history-taking [65].

The provision of quality healthcare concerning sexual health and STIs, including skills such as sexual history taking, is tied to the medical education and training of health professionals on these topics. According to E. Gordon in the *Journal of Sexual Medicine*: “Research shows SHE [sexual health education] in UME [undergraduate medical education] increases MD's awareness of and ability to address sexual health, and sexual health is bidirectionally correlated with general health; therefore the lack of SHE in UME has repercussions for sexual health and general health outcomes.”[66] Thus the incorporation of sexual health education in the training of medical students positively influences their patient outcomes in the future as medical doctors. However, sexual health in medical education has been shown to be lacking across medical schools. It is important to note that due to the public health importance of STIs, these tend to be covered across medical curricula in sexual education. However, Shindel et al. also highlight that sexual education encompasses knowledge, attitudes, and skills. [67] In the United States, approximately only half of all medical schools include formal curricula on sexual health. Most medical schools have established their own internal curriculum, with their own goals and objectives, as opposed to using established standards as a framework. [61] In 2003, it was reported in the United Kingdom that 17 out of the 22 medical schools provided education on sexual history taking, with only 6 schools formally assessing student skills [67]. Contrary to the increase in the importance of sexual health education for medical students, a decrease has been reported in the provision of sexuality education [67].

The significant challenges encountered during the implementation of sexual health education and training compromise the quality of care. These include a lack of formal education across many medical students, a lack of standardized sexual health education, and a lack of formal evaluation and regulation of training [67] [68] [69].

The proposed solutions revolve strongly around multimodal forms of education (e.g., OSCEs, simulation patients, practice with real patients etc.) within a spiral curriculum that includes input from different specialties and long-term assessments. [67] A focus on sexual history taking, comfort with sexual language, and general communication skills would align with recommendations by the International Society for Sexual Medicine for undergraduate medical training in sexual health. [61]

Medical training is crucial to the improvement of sexual health education and its inclusion in medical schools. At present, global data evaluating medical school curricula - most notably outside of Western countries - is lacking.[67] Furthermore, research specifically on the inclusion of STIs and sexual health in undergraduate medical curricula is sparse, with global differences in recognition of medical degrees and specialisms further complicating the assessment of medical education. In order to address specifically the development of sexual history-taking curricula, there is a necessity for further research on the matter.[60]

## **STIs awareness**

### *Comprehensive sexuality education*

Comprehensive sexuality education (CSE) is an approach that provides individuals with age-appropriate information and skills in order to prevent and address sexually transmitted infections (STIs) [70]. CSE programs have been shown to be effective in enhancing knowledge, changing attitudes, and promoting healthy sexual behaviors related to STI prevention [71]. Integration of CSE into schools has led to an increase in STI testing compared to schools that do not have CSE integrated[72]. In addition, CSE can help reduce the stigma and discrimination surrounding STIs [73], as demonstrated by a study conducted in several European countries, in addition to the lesser incidence of STIs due to the provision of essential tools to make informed and healthy choices [74].

### *STI Screening*

STI screening refers to the process of testing individuals for sexually transmitted infections to identify infections and provide necessary treatment and preventive measures [75]. Some common STI screening methods include blood tests, urine tests, swab tests, and physical exams. Depending on the risk factors, healthcare providers will determine what test is suitable for follow-up evaluation [76]. Effective STI screening programs can help identify infections early, reduce transmission rates, and improve health outcomes for individuals affected by STIs as it induces early treatment of the infection [77]. It also prevents further spread as it makes the individual aware of their status, which leads to protection and treatment. STI screening identifies the risks associated with sexual activity [78]. Hence, sexually active individuals should get tested for STIs at least once a year and more frequently if they engage in higher-risk sexual behaviors. Testing is also recommended if symptoms arise, if there has been unprotected sex with a new partner, or if a partner has been diagnosed with an STI [79].

There are multiple barriers to diagnosis, controlling, and preventing STIs. Confidentiality is essential to reducing barriers and enhancing sexual and reproductive health and rights (SRHR) among people living with STIs. Self-testing (self-screening, self-monitoring, self-sampling) could enhance the body's autonomy and confidentiality. Lack of reliable and cost-effective point-of-care tests and socioeconomic, political, and cultural factors are other barriers to STI diagnosis. HIV self-testing (HIVST), which can be obtained online, offered at clinics, or acquired from pharmacies or drug shops, provides patients with a discrete and practical way to test, and it has replaced traditional HIV testing as the preferred method of diagnosis in many high burden settings. In order to increase the usage of STI tests, especially chlamydia

testing, among young people who do not use conventional services, internet-accessible STI tests, or e-STIs, are an effective strategy. It is challenging to get sexual health care in person due to psychosocial and environmental factors. Online sexual health services, such as e-STI testing, can help consumers get over the stigma, shame, and drawbacks of in-person treatment, which can help them overcome some of these challenges. In order to use an e-STI test, customers often need to acquire postal self-sampling kits online, follow collection instructions, send samples to a lab, and receive results via phone or short text message [80,81].

#### *Governmental campaigns*

Governmental campaigns for STI awareness are critical initiatives launched by governments to increase public understanding of STIs and their associated risks and consequences. These campaigns promote safer sexual practices and encourage individuals to get tested and seek treatment. Importantly, research indicates that STI awareness campaigns effectively reduce the stigma and discrimination associated with STIs, which can help improve access to testing and treatment services and reduce the spread of STIs [82]. Studies have shown that STI awareness campaigns are effective in reducing the stigma and discrimination associated with STIs [83].

- Australia

The Australian Government's "Play Safe" campaign promotes safer sex practices and encourages individuals to get tested for STIs. Its official website provides STI resources and nearby testing centers [84].

- United States:

The Centers for Disease Control and Prevention's (CDC) "Prepare Before You're There," "Talk, Test, Treat," and "Get Yourself Tested" campaigns encourage people to get tested for STIs. It targets the general public and healthcare providers to break the stigma and follow a screening protocol [85].

- United Kingdom:

The National Health Service (NHS) launched the "Protect Against STIs" campaign to encourage people to practice safer sex and get tested for STIs [86].

- South Africa:

The South African Government's "National Strategic Plan on HIV, TB, and STIs" campaign aims to reduce the prevalence of HIV, TB, and STIs by promoting prevention, testing, and treatment. The plan includes a range of initiatives, including condom distribution, HIV testing and counseling, and antiretroviral therapy [87].

- Brazil:

The Brazilian Ministry of Health initiated a campaign under "Syphilis No" to raise awareness of syphilis testing and treatment. The program includes initiatives such as condom distribution, HIV testing, antiretroviral therapy, and education and awareness campaigns. It was shown that reported cases in 2020, and serological testing for syphilis increased among the public [88].

- Germany:

The "Liebesleben" (Love Life) campaign was launched by the Federal Centre for Health Education to promote sexual health and prevent STIs. The campaign features a website with information on STI prevention and testing, videos, and other resources aimed at young people [89].

### **Barriers to addressing STIs' prevalence**

There are various barriers to addressing the prevalence of STIs. One of them is the complexity of behavior change, as identifying simple interventions to reduce risky sexual behavior remains difficult [1]. A highly influential factor is the mindset and culture of populations and their families; while young and emerging families exhibit more favorable behaviors toward STI prevention, there are still families that maintain a mindset of rejection [90].

Public awareness, training among health workers, and long standing stigma around STIs also serve as obstacles to greater success in prevention and treatment [91].

For economic barriers, accelerated partner therapy has been shown to be cost-effective and acceptable to patients to reduce transmission of, for example, gonorrhea and chlamydia [92]. However, health services for screening and treatment of STIs are often weak, with limited resources, stigmatization, poor quality of services, and out-of-pocket expenses posing problems for those seeking help [1].

Also, lack of access to adequate and friendly health services is a barrier, mostly in certain populations with high rates of STIs, such as sex workers, men who have sex with men, and adolescents in high-burden countries [1]. One example of this is the restriction in the distribution of and access to vaccines globally, such as HPV vaccines [93].

Multi-drug and extensively drug-resistant gonorrhea strains have been linked to international spread, especially among travelers from Southeast Asia. Chlamydia is the most common bacterial STI globally, with significant resistance to macrolides and tetracyclines being rare. Syphilis exhibits widespread macrolide resistance, but penicillin remains the first-line therapy due to no documented resistance. Trichomoniasis is the most prevalent non-viral STI, and metronidazole resistance is considered rare. Mycoplasma genitalium shows inherent resistance to various antibiotics, with an increasing global prevalence of resistance to first- and second-line treatments, resulting in limited alternative therapy options. Recommendations: Travelers worldwide face the risk of contracting resistant STIs with few treatment options. Enhanced diagnostic methods are urgently required to better AMR surveillance and patient management. Since no vaccines exist for these STIs and pre-exposure prophylaxis research is limited, condom usage is vital for prevention. Travel health practitioners should include STI risk reduction advice, emphasizing condom use, in standard pre-travel consultations [5].

The control of STIs can only be achieved through a combination of interventions supported by robust political and financial commitment [94].

### **Left-behind populations**

Left-behind populations, including women, ethnic minorities, sexual minorities, adolescents, and individuals living in poverty, face disproportionate challenges in accessing the knowledge and resources necessary to improve their health outcomes. Structural inequalities contribute directly to the lack of access to STI information and services in these communities. Adolescents also experience disparities in

accessing sexual health information, STI care, and positive STI outcomes. Many sex education programs in the United States and globally focus primarily on abstinence and heterosexual youth, neglecting essential information on STI prevention, risk reduction, gender, discrimination, and sexual orientation. [95] Despite human rights documents supporting confidential STI care, many adolescents still struggle to access confidential sexual health services. Consequently, they may delay seeking STI prevention, diagnosis, and care, placing themselves and their communities at higher risk.[96]

When examining the topic of sexually transmitted infections (STIs), the issue of marginalized or overlooked groups presents a complex challenge. Although there are inherent limitations, it is imperative to incorporate an intersectional perspective when formulating policies and conducting population-based surveys. Taking into account the multifaceted intersections of sexual orientation and gender identity, perceived economic status, foreign-born status, ethnic/race social status, and various other factors is important. The adoption of an intersectional approach within sexual and reproductive health and rights (SRHR) policies and future survey analyses can significantly contribute to the transformative goal of establishing a sustainable society in line with the United Nations' Agenda 2030. This approach ensures that no individual is excluded or neglected, thereby promoting inclusivity and equality [97].

The WHO guidelines focused on HIV prevention, treatment, and care for key populations: men who have sex with men, sex workers, individuals in prisons, people who inject drugs, and trans and gender-diverse people. These populations are also disproportionately affected by viral hepatitis and other STIs. Integrated, community-led approaches are crucial to address all three infectious diseases and their syndemic impact. Effective management within key populations is vital to eliminate these diseases as public health threats [98].

#### *Men who have sex with men*

Gay, bisexual and other men that have sex with men can be at increased risk of all sexually transmitted infections (STIs) and are disproportionately affected by infections such as gonorrhea, syphilis, and HIV. In the United States, the estimated lifetime risk for HIV infection among MSM is one in six, compared with heterosexual men at one in 524 and heterosexual women at one in 253 [99]. Factors associated with increased vulnerability to STI acquisition among MSM include having multiple, anonymous, and concurrent partners. Repeat syphilis infections are common and might be associated with HIV infection, substance use (e.g., methamphetamines), Black race, and multiple sex partners. Similarly, gonorrhea incidence has increased among MSM and might be more likely to display antimicrobial resistance compared with other groups [100,101]. Rectal and pharyngeal testing by NAAT for gonorrhea and chlamydia is recognized as an important sexual health consideration for MSM. A detailed sexual history should be taken for all MSM to identify anatomic locations exposed to infection for screening [99].

#### *Sex workers*

In Urban Justice Center's Sex Worker's Project, a sex worker is defined as "Individuals whose reasons for engaging in sex work – and leaving it – are personal, economic and social – as complex as anyone's reasons for involvement in any type of work." [102] While sex work refers to the transactional exchange of sexual services, performances, or products in return for material compensation [103]. This encompasses direct physical interactions between individuals engaging in buying and selling and forms of indirect sexual stimulation [104].

Even though definitions are sometimes of utmost importance in social justice, they can sometimes lead to semantic debates rather than political discussions. Our attention should be directed towards health politics, aiming to address the practical challenges faced by real individuals.

Sex workers exhibit an average reported prevalence of active syphilis at 10.8%, with a range spanning from 5.8% to 30.3%, as reported by the World Health Organization's Global Health Observatory in 2019 [105]. Although data on the prevalence or incidence of other sexually transmitted infections (STIs) and viral hepatitis among sex workers is limited, various global contexts have demonstrated higher rates. Research indicates that the decriminalization of sex work can reduce new infections by up to 46% over a ten-year period while eliminating sexual violence could lead to a 20% reduction. To address these challenges and uphold human rights, the WHO supports countries in implementing comprehensive HIV and STI services through community-led approaches [106].

SWs are at an increased risk of contracting STIs due to factors associated with their work, including multiple, non-regular partners, inconsistent condom use, and more frequent sexual intercourse [107]. In the nature of their work, there can only one component be avoided: inconsistent condom use. Sex workers have reported various reasons for not using condoms with clients, including client refusal, clients pressure, cost factors, the ability to charge higher fees, a reluctance to be suspected of having a disease, and concerns about losing clients.

Ensuring comprehensive access to sexual and reproductive health (SRH) services for sex workers does not have a universal solution. Nevertheless, in the Brief Paper of the Global Network of Sex Work Projects (NSWP); *Sex Workers' Access to Comprehensive Sexual and Reproductive Health Services*, diverse sex workers who participated unanimously agreed that the SRH services available in their communities lack comprehensive, integrated, and non-judgmental care. Consequently, sex workers are unable to exercise their rights to SRH, which are protected by numerous international conventions. Additionally, due to pervasive discrimination, they may face further human rights violations from healthcare professionals [108].

#### *Transgender people*

The definition of "transgender" is constantly evolving but typically refers to individuals whose gender identity does not match their sex assigned at birth [58]. In a study, it was found that the prevalence of syphilis was higher (42.3%) in transgender people than in non-transgender individuals (18.1%). For transgender women, HIV rates are disproportionately high compared to other key populations like men who have sex with men (MSM) and sexual partners of people living with HIV. In transgender women (0% to 49.6%), the prevalence of HIV across all studies is higher as compared to transgender men (0% to 8.3%). It is evident that the prevalence of HIV and other STIs is much higher in the transgender population. Unsafe needle injection practices associated with gender-affirming therapy (i.e., black market estrogen and silicone injections) have also been described as increasing the risk of HIV acquisition in transgender women. Access to health services for transgender individuals is hindered by various factors, such as violence, legal obstacles, societal stigma, and discrimination, leading to low utilization rates. [109–112]

#### *Individuals in prisons and other closed settings*

Annually, approximately 30 million individuals worldwide experience incarceration. Among prisoners, the estimated global prevalence of HIV stands at 3%. Notably, female prisoners constitute a significant proportion, ranging from 5% to 10%, of the global prison population, and they exhibit higher rates of drug use compared to their male counterparts. Additionally, female prisoner populations often demonstrate double or even higher prevalence rates for HIV. Women incarcerated face heightened vulnerability to

gender-based sexual violence, contributing to engagement in risky behaviors such as unsafe tattooing and injecting drug use. Moreover, they are more susceptible to self-harm. Syringe sharing is widespread among incarcerated individuals who inject drugs, which is made worse by the global shortage of needle/syringe services in prisons. Other risk factors include unsafe sexual practices due to limited access to condoms in prisons, instances of sexual violence, participation in other high-risk sexual behaviors, as well as tattooing and piercing [113].

#### *People who inject drugs*

Opioid use and the rising case reports of STDs represent co-occurring epidemics; research indicates that persons who inject drugs (PWID) may be at increased risk for acquiring STIs. An estimated 23–39% of new HCV infections occur among people who inject drugs and there might be an increased prevalence of commercial sex work among PWID, adding layers of experiences in discrimination in accessing STIs diagnosis and treatment [114,115].

#### **During COVID/crises**

It is argued that resilient health systems include those that are able to provide adequate and effective care in response to a health crisis while maintaining the provision of essential health services and producing good health outcomes for all.[116] Studies have associated disruptions to essential health services in crises with several different factors, like the stoppage of preventive and elective procedures, the fear of contracting infections at health facilities, the mobilization of already scanty resources and personnel away from regular health services to address the crisis, as well as responses such as restricted movement aimed at reducing disease spread [117][118].

The COVID-19 pandemic was a health emergency, and had resulted in a lockdown. Measures restricting certain medical procedures and some elements of SRH services were deemed essential to keep running during the lockdown. These services included abortion care and post-abortion contraception, Comprehensive Emergency Obstetric and New-born Care (CEmONC) Services, sexual assault care and emergency contraception. [119] Certain measures such as asymptomatic STIs screening that were once deemed essential were not made a priority during the pandemic. The reduction in in-person patient visits, which included deferring routine STI screening, lowering operation hours, and relying on telephone or telemedicine for patient consultations [120], had a significant impact on young people (aged 15-24 years).[121] It was found in a 2021 study conducted in Europe that since the onset of the COVID-19 pandemic, the number of reported cases of STIs was lower than anticipated by 51%. This reduction remained consistent throughout various stages of the pandemic, with an average decline of 56% during the lockdown. The results were indicative of fewer reporting of STIs among females, people living in more deprived areas, people with no previous STI episodes during the last three years, and the HIV negative.[122]

In an online survey conducted in the UK, approximately one-quarter of condom/contraception-using respondents reported that social distancing measures had made a difference to their access or use. Factors impacting it included the closure or severe restriction of face-to-face sexual and reproductive health (SRH) services, and uncertainty about available SRH services due to a lack of information. Limited appointments in general practice, challenges in contraceptive prescribing, and difficulties in condom distribution systems have also contributed to the challenges. Additionally, the closure of usual access points for free condoms in community settings, reduced mobility during lockdowns, affordability of

online services, and reluctance to access contraception in shops or pharmacies due to fear of acquiring the disease have further hindered access. [123]

Prioritizing COVID-19 control, public health staff from all sections of the health departments were deployed to assist with COVID-19 work. This reprioritization resulted in fewer partner services interviews for people newly diagnosed with STIs, and limited data collected about sexual behavior among reported cases ([124]). Several region-wise and year-wise variations in data accumulated over the course of the pandemic, regarding STI cases being reported. However there was a uniform decrease of numbers (of STI cases with clinical symptoms) reported in the first wave [125–131].

This may have been due to social distancing and greater alertness and behavioral change to reduce risk for any potential infection spread. If this heightened awareness lasts it may abrogate the global STI burden of an estimated 1 million new daily cases [117]. Reduction of tourism may play a significant role in the reduction of infectious diseases in times of COVID-19.

There is a recognized association between sexually transmitted infections (STIs) and tourism, [125] as documented in various studies. This connection raises concerns about the potential dissemination of antibiotic-resistant strains in the context of global travel and its impact on public health. [132,133] It is important to acknowledge that this modified sexual behavior during travel, which may include casual sex and exploring new relationships, can potentially contribute to a higher risk of STIs. Understanding and addressing the specific factors that influence sexual behavior during travel is crucial in implementing effective interventions to promote safer sexual practices and reduce the spread of STIs among travelers.

In the literature reviewed, most of the available data regarding trends of STI diagnosis and screening was from high-income rather than low- and middle-income countries, which may reflect bias in results and in formulating solutions that cater to countries with fewer resources and higher population density [125–131]. Telemedicine, for instance, may offer new tools for contraceptive consultations, [134][135] but it still poses challenges for people who lack access to the internet and digital competencies. Self-testing and self-treating STI kits, on which we have extensive literature, are one more financially unfeasible example. There may be conditions and symptoms for which virtual visits may not be appropriate or sufficient.

The advantages and limitations of telehealth and home-based sexual and reproductive healthcare services must be balanced with providing the right care for the right individual. These insights may guide how sexual and reproductive healthcare services for youth may be adapted and evolve over the course of this pandemic where access to in-person clinical services may ebb and flow over months or years to come [136].

## **Positive strategies**

### *Digital Health*

The use of [social] media platforms is increasing globally with the increase in access to and availability of the internet and continuous technological advancements. Digital health has thus been playing an important role in public health strategies, focusing on disease surveillance and interventions.[137]

In the scope of sexually transmitted infections, digital health has been used to focus on STI prevention, testing and treatment. These interventions can be classified as follows[138]:

- Enhanced prevention messaging
- Developing testing services



- Increasing PrEP uptake
- Refining big data algorithms for surveillance
- Optimizing clinical interventions
- Assisting mental health services

One of the advantages of digital health services in providing STI interventions is that they can feasibly be implemented and upscaled, especially in low- to middle-income countries.[138]

Certain population groups, such as adolescents, have become easier to reach with social media due to their higher likelihood of engagement compared to traditional public health communication channels.[137,138] Among the effective digital intervention messaging methods, peer-led messaging has been shown to be a suitable method to advocate for and improve sexual health among adolescents and notably in schools.[138] Furthermore, a number of theories, such as the theory of planned behavior, the unified theory of behavior, protection motivation theory and health belief models, are being applied to digital intervention frameworks in order to improve sexual health education. [138]

Theories and models of behavior change are helpful in understanding why people engage in or refrain from healthy habits and in identifying the fundamental data required for creating interventions. providing a framework for evaluating the interventions, deciding when to use them, and offering suggestions and viewpoints for designing a successful intervention[139].

It is, however, important to note that while digital interventions have been shown to benefit on an individual level with regards to the reduction of STI transmission, there needs to be more research focused on its effects on a community level. Digital health technology is limited to some population groups. These include groups of lower socioeconomic level and people from culturally and linguistically diverse communities, the latter including racial or ethnic minority groups, immigrants and refugees. A U.S. study found that African Americans and Latinos were less likely than white Americans to use digital technology for health care, while other studies found that digital health technologies have been shown to be poorly accepted among immigrants [140]. As it is shown to be influenced by various social, cultural and economic factors, it means no uniform intervention or platform reaches these communities equally effectively. Furthermore, it is worthy to note the existing challenges surrounding the translation and implementation of research on digital interventions (including biosurveillance) into practice, aided by the necessity of ethical frameworks to guide the implementation of digital interventions in public health surveillance systems. [137]

#### *Harm reduction*

The concept of *harm reduction* is defined as referring to “policies, programmes and practices that aim to minimize the negative health, social and legal impacts associated with drug use, drug policies and drug laws,” with the goal of reducing harm as opposed to reducing use. [141] Consequently, this concept has been extended to all strategies that reduce negative health stemming from numerous causes or factors.

In the context of sexual medicine, harm reduction has been shown to affect the reduction of negative health positively. Harm reduction strategies are created to focus on psychological and behavioral incentives and thus address lifestyle choices such as smoking, alcohol and high-risk behavior - all of which play a role in the impact on STI transmission and sexual and reproductive health overall. [142]

Though often considered to be the most valid of harm reduction strategies, abstinence is, in practice, not a valid strategy for implementation due to low effectiveness. A well-known harm reduction strategy is education on and access to condoms for sexual intercourse. A suggested way to support harm reduction

measures regarding STI transmission is the availability of free condoms and consultations. Information tailored to different populations can be provided through educational interventions in harm reduction strategies, supported by the association between educational status and sexual health awareness, benefitting groups who do not view STIs as risks to their health. [142]

Other harm reduction strategies include screening, treatment and accelerated partner treatment work in conjunction with condom use and counseling to form the necessary basis of harm reduction strategies in STI transmission. [143]

### IFMSA contribution

The IFMSA program on HIV, AIDS and other STIs (HAS) has played a vital role in addressing sexually transmitted infections (STIs) through diverse national and local-level campaigns. From 2019 to 2021 (last two terms), the program has successfully executed approximately 71 activities, with four of them being on an international/inter-regional level. The majority of these activities have focused on raising awareness about STIs among the general public.

Furthermore, within an international context, sessions on STIs were conducted in the EMRM on 20/21/22 under the title of 'STIs and How to Conduct a Campaign.' In addition, the TACSE Manual 22 has a dedicated chapter (Chapter 4) on 'STI Protection and Contraception,' which provides valuable insights into preventing and controlling STIs through various methods of protection and contraception. [144–147]

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