

PREVENTION AND CONTROL OF SEXUALLY TRANSMITTED INFECTIONS (STIs) IN THE ERA OF ORAL PRE-EXPOSURE PROPHYLAXIS (PrEP) FOR HIV

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ACRONYMS AND ABBREVIATIONS

3TC	lamivudine
AMR	antimicrobial resistance
ART	antiretroviral therapy
EGASP	Enhanced Gonococcal Antimicrobial Surveillance Programme
FTC	emtricitabine
GASP	WHO Global Gonococcal Antimicrobial Surveillance Programme
GUD	genital ulcer disease
HAV	hepatitis A virus
HBV	hepatitis B virus
HCV	hepatitis C virus
HPV	human papillomavirus
HSV	herpes simplex virus
LMICs	low- and middle-income countries
MSM	men who have sex with men
NAAT	nucleic acid amplification testing
PEP	post-exposure prophylaxis
POC	point-of-care (test)
PrEP	pre-exposure prophylaxis
SRHS	sexual and reproductive health services
STI	sexually transmitted infection
TDF	tenofovir disoproxil fumarate
XDR	extensively drug-resistant

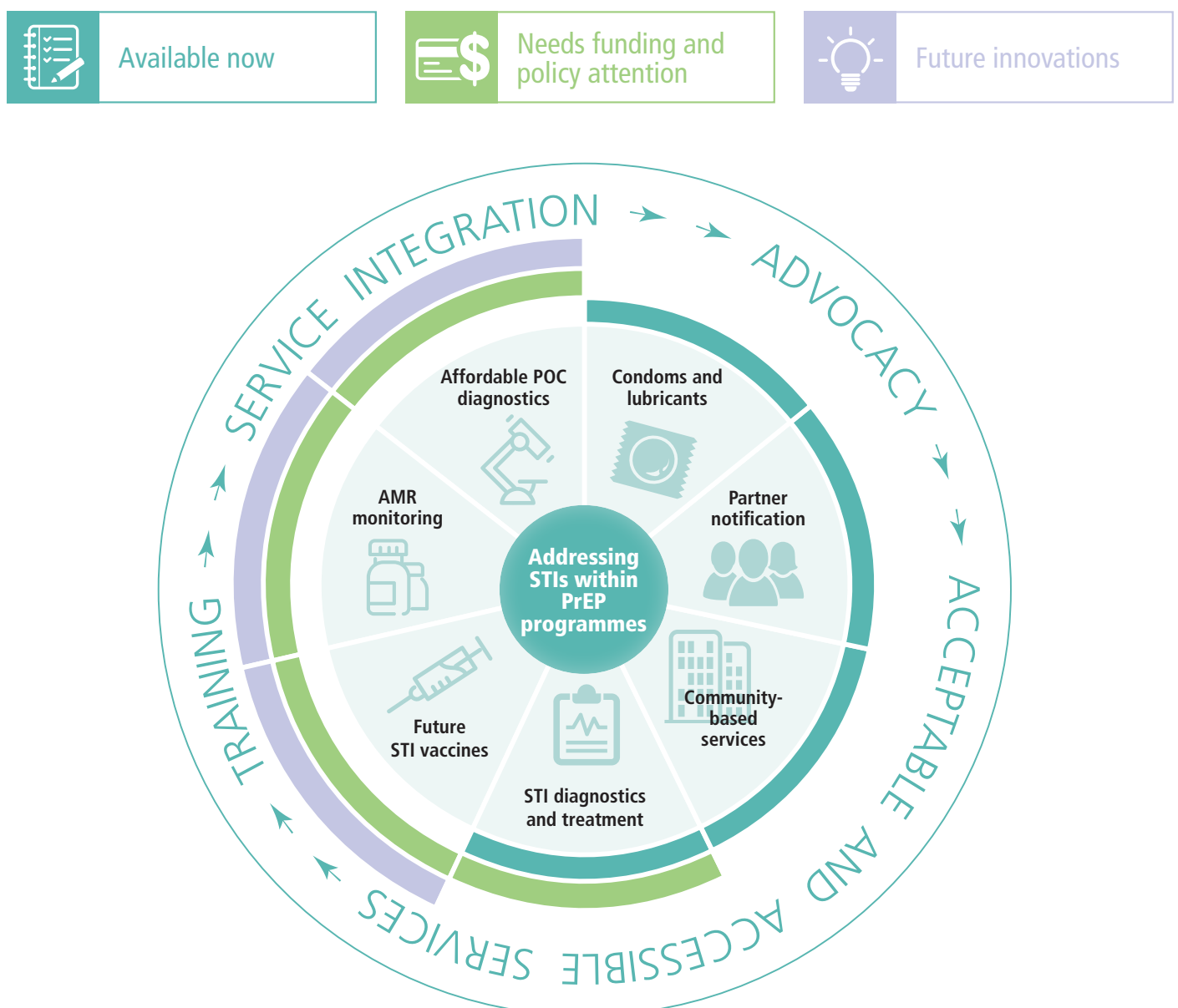
OVERVIEW

After years of neglect, greater global attention is being paid to the increasing incidence of sexually transmitted infections (STIs). A recently published WHO report highlights that, annually, there are an estimated 376 million new cases of four curable STIs: chlamydia, gonorrhoea, syphilis and trichomoniasis.

The need for greater focus on STIs has also been highlighted in the context of expanded use of pre-exposure prophylaxis (PrEP) for HIV prevention, where high STI prevalence at baseline and incidence during PrEP use have been observed. The epidemiological situation demands a call to action to ensure that these STIs are addressed, and that populations at risk have access to comprehensive STI prevention and care.

Integration of STI services and PrEP has challenges, but it also provides an opportunity not only to induce much-needed progress in STI control, but also to optimize broader sexual and reproductive health services for key, underserved and overlooked populations.

Figure 1. Existing and future interventions for improving STI prevention and control by leveraging PrEP scale-up



INTRODUCTION

Every day, more than 1 million new cases of four common curable STIs (chlamydia, gonorrhoea, syphilis and trichomoniasis) occur among people aged 15–49 years (1) (Box 1). These four STIs are also associated with an increased risk of acquiring and transmitting HIV. However, most cases are asymptomatic, meaning that people may not be aware they have an infection prior to testing.

WHY OTHER STIS, BEYOND HIV, MATTER FOR PUBLIC HEALTH

The consequences of sexually transmitted infections (STIs), including HIV, on both individual health and public health can be severe.

The World Health Organization (WHO) has outlined key global targets towards ending STI epidemics as public health concerns by 2030, including a 90% reduction globally in the incidence of syphilis and gonorrhoea, caused by the organisms *Treponema pallidum* and *Neisseria gonorrhoeae*, respectively (2). Strategies to achieve this should include better diagnosis, treatment and partner services for populations at high and ongoing risk of acquiring STIs.

STIs, including HIV, can also be transmitted from mother to child. Transmission of STIs to the fetus during pregnancy can lead to adverse outcomes for infants. For example, in 2016, syphilis alone caused an estimated 200 000 stillbirths and newborn deaths, making it one of the leading causes of preventable neonatal mortality worldwide.

Box 1. Key public health issues of STIs

- Worldwide, more than 1 million STIs are acquired every day.
- The incidence of STIs is disproportionately high among key populations, including men who have sex with men, sex workers, transgender people as well as adolescents and young adults.
- In 2016, there were an estimated 376 million new cases of four curable STIs: chlamydia, gonorrhoea, syphilis and trichomoniasis.
- More than 500 million people are estimated to have genital herpes simplex virus (HSV) infection.
- More than 290 million women are infected with human papillomavirus (HPV), a cause of cervical cancer.
- Most STIs have no symptoms or only mild symptoms that may not be recognized as being due to an STI.
- STIs can increase the risk of HIV acquisition.
- In 2016, 988 000 pregnant women were infected with syphilis, resulting in over 200 000 stillbirths and newborn deaths.
- In some cases, STIs can have serious sexual and reproductive health complications (e.g. infertility in men and women; adverse pregnancy outcomes; newborn and congenital infections).
- Antimicrobial drug resistance, especially in *N. gonorrhoeae*, is a major public health threat.

For women, STIs can have serious reproductive health consequences beyond the immediate impact of the infection itself, including ectopic pregnancy and infertility. More than 290 million women have HPV infection, which can cause cervical cancer.

Gonococcal antimicrobial resistance (AMR) may lead to a pandemic of extensively drug-resistant (XDR) *N. gonorrhoeae*, which can have major public health implications. In response, the WHO Global Gonococcal Antimicrobial Surveillance Programme (WHO GASP), a collaborative global network of regional and subregional reference laboratories, has been in place since 1990 to monitor gonococcal AMR worldwide (3).

Some viral infections that cause hepatitis can also be sexually transmitted. Transmission of hepatitis A virus (HAV) can occur from any oro-fecal contact due to sexual activity with an infected person. In adults, hepatitis B virus (HBV) is easily transmitted primarily through sexual activity among unvaccinated adults. Hepatitis C (HCV) has emerged in recent years as an STI among men who have sex with men (MSM), especially in those with HIV. HAV and HBV can be prevented with targeted vaccination. While there is currently no vaccine for HCV, curative treatment for HCV is becoming increasingly available.

Over 500 million people have genital HSV type 2 (HSV-2) or type 1 (HSV-1) infection, which is lifelong and incurable. Genital herpes can lead to recurrent genital ulcer disease (GUD) and, more rarely, can be transmitted to infants during delivery, resulting in neonatal herpes. Infection with HSV-2, as in the case of syphilis, gonorrhoea and chlamydia, increases the risk of acquiring and transmitting HIV infection.

Box 2. Targets set out by the Global health sector strategy on STIs approved by the World Health Assembly (4)

2030 targets (where we want to go)

90% reduction in the incidence of *Treponema pallidum* infection globally

90% reduction in the incidence of *Neisseria gonorrhoeae* infection globally (2018 global baseline)

50 or fewer cases of congenital syphilis per 100 000 live births in 80% of countries

Sustain 90% national coverage with the HPV vaccine and at least 80% in every district (or equivalent administrative unit) in the national immunization programmes in countries

Baseline (where we are)

6.3 million people newly infected with *Treponema pallidum* in 2016

~87 million people newly infected with *Neisseria gonorrhoeae* in 2016

473 congenital syphilis cases per 100 000 live births in 2016, a decline of 12% in 4 years

Of 51 countries surveyed, 14 (27%) reported >80% HPV vaccine coverage

Box 3. The challenges that persist today

- Untreated STIs are associated with long-term morbidity.
- STIs are often neglected programmatically and STI services are either not funded or underfunded.
- Condom use is on the decline in many countries.
- Syndromic management of STIs has limitations, particularly for women with vaginal infection and men with anorectal infection.
- Lack of available, affordable, accurate and easy-to-use point-of-care diagnostic tests for common STIs in low- and middle-income countries is a barrier to STI prevention and control.
- Partner notification services are underutilized.
- Surveillance systems for STIs are weak in many countries and disconnected from HIV surveillance.

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