# Advocates' Guide to Doxycycline to Prevent Bacterial STIs (DoxyPEP)

AVAC Advocacy. Access. Equity. STIWatch

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## **Overview**

People around the world collectively acquire <u>more than a million</u> sexually transmitted infections (STIs) every day. Some are not aware that they have acquired an STI, because many infections have no symptoms (i.e., are "asymptomatic"), while other individuals may experience pain, discomfort, or embarrassment. Whether or not an STI causes immediate symptoms, some infections have the potential to lead to severe long-term consequences, such as cancer, infertility, complications in pregnancy and for newborns, and/or the transmission and acquisition of HIV. STI rates have been rising steeply in recent years, and too few tools are available to prevent, detect, and treat infections. Despite the enormous scope and urgency of the problem, research into and development of tools to prevent, diagnose, and treat STIs has lagged due to limited investment in the field.

Recently, interest has grown in the use of an oral antibiotic, doxycycline, as post-exposure prophylaxis (so called "DoxyPEP") to prevent acquisition of some bacterial STIs after sex. Doxycycline is inexpensive, easily tolerated, and widely available. However, questions remain regarding who will benefit most from DoxyPEP and how to implement this strategy broadly to ensure equitable access:

- How effective is DoxyPEP against common STIs?
- Which populations should potentially consider using DoxyPEP?
- Will DoxyPEP use contribute to antimicrobial resistance (AMR)?
- What considerations should influence implementation planning for DoxyPEP, especially in low- and middle-income countries (LMICs) where, among other concerns, rates of AMR are often relatively high?

As with any new prevention option, if and when DoxyPEP becomes more widely available, it will be essential for advocates to insist on and engage with user-centered, comprehensive, and collaborative implementation programs and policies. While acceptability data is limited, some findings have shown that people who used DoxyPEP experienced improved quality of life by reducing anxiety about acquiring an STI and felt more in control to prevent STIs. However, people have also noted concerns about AMR, highlighting the importance of additional qualitative research to better understand people's experiences and beliefs regarding DoxyPEP.

DoxyPEP alone is not a complete solution to the escalating epidemic of STIs. But in a field with few recent innovations and limited investments in new antibiotics, DoxyPEP holds important potential. Today's research, implementation, and policy decisions about DoxyPEP can also shape the path for much-needed STI research and development in the future. To ensure that we maximize DoxyPEP's impact to protect those who could most benefit from STI prevention, advocates can:

- 1. Understand the evidence to date to influence decision-making and implementation.
- 2. Engage with the development of emerging public health guidelines.
- 3. Call for additional research with diverse populations.

- 4. Underscore the need for equity in research and access.
- 5. Insist on monitoring and implementation studies to understand the impacts of DoxyPEP.
- 6. Continue to advocate for funding for and innovation in STI prevention, diagnosis, and treatment.

#### **STI Basics**

Chlamydia, gonorrhea, and syphilis are the three most closely tracked bacterial STIs globally.

Chlamydia is the world's most commonly reported bacterial STI. It can be cured with commonly available antibiotics, but because most people experience no symptoms and tests are often unavailable or unaffordable, it often goes undiagnosed and untreated. Chlamydia is a major cause of infertility.

Gonorrhea is curable, but over the decades it has acquired resistance to nearly every medicine used to treat it. It can be transmitted through vaginal, anal, or oral sex. If not diagnosed and treated, gonorrhea can lead to serious health complications, including infertility, as well as increasing risk for HIV acquisition.

Syphilis can be transmitted through sexual contact or during pregnancy. It has not evolved resistance to currently recommended treatments and continues to be curable, though there have been troubling shortages of injectable penicillin. Untreated syphilis can lead to serious health consequences, including brain damage, blindness and paralysis, as well as prematurity, low birthweight, neonatal death, and infections in newborns.

## 1. Understand the evidence to date

Trials show DoxyPEP offers substantial prevention against chlamydia and syphilis among gay, bisexual and other men who have sex with men (MSM) and transgender women. Findings regarding gonorrhea prevention in these populations are mixed. There are no data showing efficacy among other populations, including cisgender women.

Doxycycline is in widespread use globally to treat many conditions and infections, including acne, chlamydia and syphilis. It is also used preventatively against malaria, anthrax, leptospirosis, and Lyme disease. In 2017, a <u>sub-study</u> of the IPERGAY oral pre-exposure prophylaxis (PrEP) trial reported that a preventive 200 mg dose of doxycycline, taken within three days after condomless sex, reduced the occurrence of chlamydia and syphilis among a study population of French gay, bisexual, and other MSM who were using oral PrEP for HIV prevention. Two <u>further studies</u>, in the United States and France, of this same regimen – a single 200 mg dose of doxycycline within 24-72 hours after condomless sex – reported that DoxyPEP reduced the incidence of chlamydia and syphilis among MSM, with one study also including people living with HIV and a small number of transgender women.

A <u>fourth study</u>, conducted among cisgender women in Kenya, found that use of post-exposure doxycycline had no impact on STI rates. Because doxycycline was detected in less than half of hair samples collected from a sample of participants in the doxycycline arm of the study, researchers believe that the lack of efficacy could be because study participants were not taking the medication as prescribed.

Study findings related to gonorrhea were mixed. In the DoxyPEP (US) and DOXYVAC (France) trials researchers noted some protection against gonorrhea. However, in the IPERGAY (France) study, DoxyPEP was not shown to protect against gonorrhea infections. Some of these differences are related to the fact that different strains of gonorrhea, circulating in France, have elevated levels of resistance to tetracyclines, the class of antibiotics that includes doxycycline. In the United States, only about one-quarter of gonorrhea infections are currently resistant to tetracyclines, while rates in France can surpass 80% and are closer to 100% in Kenya. Global levels of tetracycline resistance are limited, because most data come from higher income countries, even though the majority of gonorrhea infections occur in LMICs.

Study	Participants	Relative Risk Reduction in STIs
<u>IPERGAY open-label</u> <u>extension</u> (France)	232 MSM using PrEP	Chlamydia: 70% Syphilis: 73% Gonorrhea:
DoxyPEP (U.S.)	327 MSM and TGW using PrEP 174 MSM and TGW with HIV	Chlamydia: 74-88% Syphilis: 77%*-87% Gonorrhea: 55-57%
DOXYVAC (France)	545 MSM using PrEP	Chlamydia: 86% Syphilis: 79% Gonorrhea: 33%
<u>dPEP-Kenya</u> (Kenya)	449 cisgender women using PrEP	Chlamydia: 27%* Syphilis: –** Gonorrhea: 36%*

\* = not statistically significant

\*\*= there were only 2 syphilis cases in the study

# 2. Engage with the development of emerging public health guidelines

National guidelines are currently limited and inconsistent, supplemented by a patchwork of local and organizational policies.

Since the release of these study findings, various agencies have begun to consider public health guidance for the use of DoxyPEP. Agencies in the <u>United Kingdom</u> and in <u>Germany</u> offer some guidance for how healthcare providers can advise their clients about DoxyPEP, though neither country endorses widespread DoxyPEP use due to concerns about antimicrobial resistance. The Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine (ASHM) published a 2023 <u>consensus statement</u> recommending that DoxyPEP should be considered primarily for use among gay and bisexual men, and MSM who are at risk primarily for syphilis and be prescribed for a limited period of time. The Australian guidelines also state that guidance for other communities or populations will need to be developed as evidence emerges, highlighting the importance of guidelines that can be updated quickly as new data is published to fit the needs of the communities being served. In June 2024, the U.S. Centers for Disease Control and Prevention (CDC) published <u>clinical guidelines</u> on the Use of *Doxycycline Postexposure Prophylaxis for Bacterial Sexually Transmitted Infection Prevention*. Additionally, several city, county, and state health departments across the U.S. have provided <u>guidance</u> to health care providers on the use of DoxyPEP, as have several community-based health organizations, including the <u>San Francisco AIDS Foundation</u>, the <u>Los Angeles LGBT Center</u>, <u>Howard Brown Health</u>, and Fenway Health. Guidance from U.S. agencies and organizations has tended to be more expansive than guidance from Europe, generally recommending that healthcare providers proactively discuss DoxyPEP with clients likely to acquire an STI. However, guidelines differ in which populations they consider eligible for DoxyPEP, with some recommending making the option available to heterosexual men or cisgender women. Most guidelines acknowledge the importance of continued monitoring and research into resistance.

# 3. Call for research with diverse populations

More data is needed to understand the potential benefits of DoxyPEP for some populations who bear the greatest burden of STIs, including cisgender women and young people, as well as how DoxyPEP could be implemented across diverse cultural settings.

The encouraging data to date, and most of the guidelines that have emerged from them, are focused on a subset of people disproportionately impacted by chlamydia and syphilis – namely, transgender women and gay, bisexual, and other men who have sex with men. There remain significant data gaps about the potential benefit of DoxyPEP for other populations.

#### **Cisgender Women**

Since doxycycline is used successfully to treat chlamydia and other STIs in women, there is reason to believe cisgender women could benefit from the prophylactic use. However, the one trial conducted among cisgender women in Kenya showed no significant level of effectiveness.

Evidence suggests that many participants in the doxycycline arm of the Kenya trial did not actually use the medication. This mirrors findings from several – but not all – early HIV PrEP trials, in which cisgender women seemed to have significant adherence challenges. There is a clear and urgent need for additional studies to test efficacy amongst cisgender women, as well as efforts to explore participants' reasons for non-adherence and identify alternative strategies that could enable women to benefit from DoxyPEP. This is particularly important because women bear some of the most severe consequences of STIs, including infertility and pelvic inflammatory disease, and they should not be left behind when examining new STI prevention options.

#### Young People

Research conducted to date has focused on adults – for example, in the San Francisco and Seattle trial, all participants were 18 years or over, with a median age of 38 years. Yet STI rates are highest among people aged 15-24 years. Therefore, more research is needed to assess whether and how to best implement DoxyPEP among younger populations. This should include exploration of additional barriers young people face when seeking care, such as lack of transportation to visit a healthcare provider for a prescription and confidentiality concerns.

#### Geography

It will be important to conduct studies in diverse geographical settings to better understand unique situational challenges. All the positive findings to date have been collected in high-income countries, and even within these relatively similar settings there have been important differences, such as their conflicting findings regarding DoxyPEP efficacy against gonorrhea. Both environmental and cultural factors will need to be taken into account when planning potential rollout of DoxyPEP.

### 4. Stress equity

Despite remaining questions and challenges, DoxyPEP may be a valuable new option for some people. It will be important for advocates to ensure that implementation is conducted equitably and in a way that maximizes public health impact.

#### Lessons learned from oral PrEP, COVID-19, and Mpox

More than a decade after oral PrEP was shown to be safe and effective, just over 6 million people worldwide <u>have ever initiated use</u> – far short of the UNAIDS global goal to have 10 million people by 2025 using PrEP consistently. Disparities in oral PrEP access persist both across and within countries: in the <u>U.S.</u>, for example, less than one-quarter of Black and Hispanic/Latino people eligible for oral PrEP have been prescribed it, compared to three-quarters of white people.

Similar patterns emerged with the distribution of vaccines against COVID-19 and mpox – with access initially limited to wealthier, whiter populations and only later expanded to reach other groups. It is imperative that these mistakes are not repeated with innovations in STI prevention. DoxyPEP is already being used by some gay, bisexual, and other men who are aware of the research findings, often via information shared through their social networks or Facebook groups for oral PrEP users. Some clinicians are also discussing DoxyPEP prescriptions with clients who might benefit – but many others remain unaware of the method and have been unwilling to offer it in the absence of formal guidelines. As guidelines are published it will be imperative to inform both clinicians and patients on the potential benefits of DoxyPEP.

#### Strategies to promote equity

Many public health agencies and organizations are concluding that the benefits of DoxyPEP outweigh the risks of potential increases in AMR, at least for some people. It is, therefore, important to ensure that these benefits are shared <u>equitably</u>. The rollout of HIV PrEP showed that inadequate funding and a failure to proactively consider and address concrete implementation challenges, from health insurance coverage to transportation to language and cultural barriers, reinforces long-standing inequities, that ultimately limit who has access to these prevention tools. Timely action is needed to create guidelines, secure funding, and ensure that DoxyPEP's potential benefits are distributed fairly.

This means, for example, that providers who are prescribing DoxyPEP should proactively offer the method to clients based on standardized criteria. For example, it could be offered to all MSM and transgender women who have tested positive for chlamydia, gonorrhea or syphilis in the past 12 months.

Advocates can also urge clinics and health systems to consider applying other lessons learned from the rollout of oral PrEP concerning how to <u>streamline the delivery</u> of a new prevention tool to reach more people. This includes engaging healthcare providers and leaders within communities with disproportionate rates of STIs to help develop strategies to effectively distribute DoxyPEP and accurate information to support its use. For example, primary care providers, and emergency departments, pharmacists, community-based distribution programs and AIDS service organizations (ASOs) may all have contact with people who do not visit STI clinics but could benefit from DoxyPEP and should be engaged in implementation planning.

The demand side of the access equation is equally important: individuals who could benefit need to know about DoxyPEP and be willing to use it. Right now, awareness of DoxyPEP appears to be concentrated within a network of well-informed, well-connected gay and bisexual men. Providers can help by proactively offering DoxyPEP to clients who meet eligibility criteria, rather than waiting for them to request it. Providing DoxyPEP prescriptions via telehealth appointments could help to ensure that those with limited access to a physical prescribing location still have access to this tool.

Advocates can also press for a host of <u>demand generation</u> approaches that have proven successful in expanding use of oral PrEP, from changing product dosing and packaging, to targeted marketing campaigns, to peer outreach. Trial results and public health guidelines are key steps, but action must extend all the way through the research to rollout pipeline. Funding is needed to ensure that those who could benefit from DoxyPEP have access no matter their insurance status, access to healthcare services, age, race/ethnicity, sexual orientation, or gender identity.

# 5. Insist on monitoring and implementation studies

The issuance of public health guidelines and rollout of DoxyPEP should be considered a starting point, not a conclusion; advocates should insist on continued research to answer remaining and emerging questions and monitoring to quickly identify and respond to any adverse outcomes.

Any DoxyPEP rollout plans should include implementation science studies that identify and promote the use of best practices to expand the effective, equitable use of this new prevention strategy. Additionally, real-world implementation studies could aid in monitoring AMR, assess side effects and better understand the effect of long-term intermittent use of doxycycline on the human microbiome. Research could also address strategies for integrating DoxyPEP with PrEP and other related sexual and reproductive health services, or the potential for alternative dosing strategies.

#### Antimicrobial resistance

Most critically, more data is needed to understand the potential impact and risks related to antimicrobial resistance when implementing DoxyPEP widely. According to WHO, AMR is one of the top <u>10 global health</u> <u>threats</u>. In 2019, there was an estimated <u>4.95 million deaths</u> associated with bacterial AMR with resistance levels highest across Africa. AMR is largely due to misuse and overuse of antibiotics. Concerns about AMR have led many to evaluate the benefits and harms of asymptomatic chlamydia and gonorrhea screening programs and how testing might lead to the overtreatment of these infections.

In England, for example, these concerns have resulted in the National Chlamydia Screening Programme shifting their focus to "<u>preventing adverse consequences of untreated chlamydia infections</u>" rather than screening for and treating asymptomatic infections. Australian authorities have similarly tightened the guidelines for chlamydia testing and screening programs, where testing is now recommended for those with an increased chance of acquiring an infection in an effort to reduce antibiotic use.

Research to date has not shown that DoxyPEP use leads to chlamydia or syphilis becoming resistant to doxycycline treatment. However, data on this issue is limited, and ongoing, long-term monitoring and surveillance will be critical to ensure that doxycycline remains effective as a treatment, not only for chlamydia and syphilis but also for other pathogens. There are particular concerns about the potential for DoxyPEP use to accelerate tetracycline resistance in gonorrhea. This would not affect gonorrhea treatment, which now relies on a different class of antibiotics, <u>but could potentially drive the development of tetracycline resistance in other bacteria</u>.

Additionally, doxycycline is a widely used antibiotic prescribed to treat acne and to prevent malaria. However, acne treatment <u>guidelines</u> propose limiting systemic antibiotic use, and research is being conducted to examine novel acne treatments to lessen dependence on antibiotics. Additionally, when doxycycline is used for malaria prophylaxis, <u>guidelines</u> suggest individuals begin taking the medication 1-2 days before travel and up to four weeks after returning home. Therefore, additional research is needed to examine DoxyPEP frequency and duration on AMR and identify if other regimens would be effective in preventing bacterial STIs while lowering doxycycline usage.

It also continues to be important to advocate for the development of new antibiotics, which are already <u>urgently needed</u> in the case of gonorrhea and could potentially be required for other STIs if chlamydia

or syphilis develop resistance to recommended treatments. Innovative antibiotics also need to be made available and accessible in LMICs: right now, antimicrobials entering the market are prohibitively expensive so their use in LMICs, with the highest STI burden and where problems may occur first, is limited.

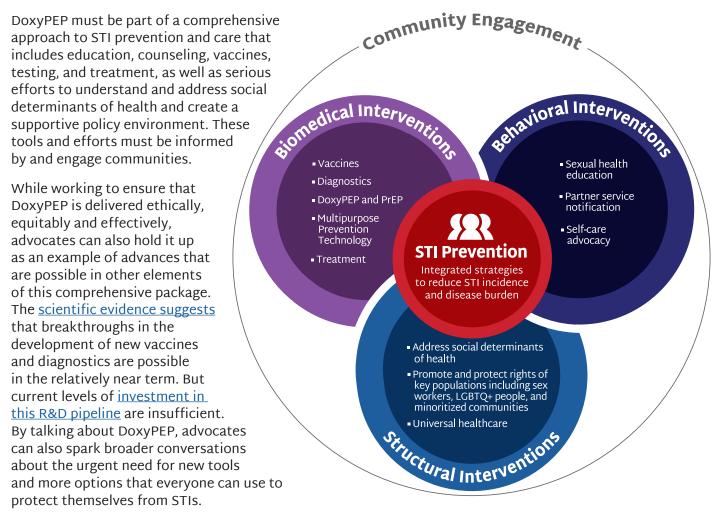
#### Side effects

It will also be important to monitor side effects and the effects of DoxyPEP on the gut microbiome. Clinical trial participants reported some side effects typical of doxycycline use, including stomach irritation, but long-term intermittent use of doxycycline has not yet been adequately studied. However, taking doxycycline on a full stomach with a full glass of liquid and avoiding laying down for 1 hour after taking a dose can prevent some symptoms like irritation in the throat. Providing people with guidance on how to use doxycycline and limit side effects will be essential.

# 6. Continue to advocate for innovation in STI prevention, diagnosis and treatment

DoxyPEP holds promise, but much more needs to be done to address the global problem of STIs.

STIs are often ignored or neglected by individuals and policymakers alike. STIs can be stigmatizing; they frequently go undiagnosed; and their effects are most devastating among groups lacking political power, such as MSM, adolescents, women, and sex workers. More advocacy is needed globally to increase awareness of the impact that STIs have on the health of people and communities and the need for vaccines and diagnostics to better prevent, detect, and treat infections.



## **Research to watch**

Currently, additional research studies including clinical trials, guidelines, and implementation strategies are being developed to better understand the effectiveness of DoxyPEP in preventing STIs and ensure that DoxyPEP is available and accessible to all who need this prevention tool. Below are additional studies that will be providing results within the next few years.

Study Name	Location	Information
DoxyDOT Pan African Clinical Trials Registry Trial ID: PACTR20240 1619811584	Kenya	This study will assess acceptability and adherence to 200 mg once-weekly doxycycline dosing to prevent bacterial STIs among Kenyan cisgender women using PrEP for HIV prevention. Approximately 50 sexually active, cisgender women ages 18-30 years will be enrolled and followed for six months. Participants will receive doxycycline once-weekly dose as directly observed therapy (DOT). All participants will complete STI testing (chlamydia, gonorrhea, and syphilis) at enrollment, month-three and month-six. Prior to initiating treatment and at exit visit, all participants will have samples collected for future microbiome and resistance testing. Hair samples will be collected at follow- up visits for future pharmacokinetic model development. The primary endpoint is percentage of completed weekly DOT doxycycline doses. Secondary endpoint is quarterly incident rate of Chlamydia trachomatis compared with quarterly incidence among participants assigned to standard of care in the <u>dPEP Kenya Study</u> .
Doxycycline PEP and 4CMenB as a Comprehensive Prevention Strategy in MSM and TGW at High Risk for Bacterial STIs Within the Swiss HIV Cohort Study (DOXY-MEN): ClinicalTrials.gov ID: NCT06242730	Kenya	This study aims to assess the effectiveness of offering event- driven Doxy PEP and 4CMenB immunization among men who have sex with men and transgender women (MSM/TGW) who have a higher chance of acquiring an STI. Doxy PEP and 4CMenB vaccination will be offered to all MSM/TGW in the <u>Swiss HIV</u> <u>Cohort Study</u> who are at risk of STI and compare 12-months STI incidence between those accepting and those not accepting the prevention package. The proposal further hosts two interesting sub-studies: One assessing potential effect of Doxy PEP on the microbiome and the other one assessing potential impact of Doxy PEP on TP, MG and CT resistance.
Doxycycline Intervention for Bacterial STI ChemoprOphylaxis ( <u>DISCO</u> ): ClinicalTrials.gov ID: NCT04762134	Canada	This study will examine doxycycline-based STI PrEP (daily 100mg doxycycline) versus STI PEP (200mg doxycycline after exposure event) for the prevention of bacterial STIs among gay, bisexual, and other men who have sex with men (gbMSM) over 15 months (60 weeks) in Canada. Additionally, this trial will provide insight to the unique challenges of medication adherence through assessing the acceptability, tolerability and safety of therapy with doxycycline. This study aims to provide health care providers with one additional tool to address the burden of STIs in populations with an increased likelihood of infection.

Doxy-Post-exposure Prophylaxis ( <u>DOXY-PEP</u> ): ClinicalTrials.gov ID: NCT05853120	United States	The goal of this project is to collect data regarding the ability of various oral doses of doxycycline to penetrate mucosal tissues in men and women to inform the combination of doxycycline with antiretrovirals (ARVs) for the development of single-dose event-driven multipurpose prevention strategies to protect against HIV and sexually transmitted infections (STIs). The duration of this clinical trial for study participants will be approximately 8 weeks and recruitment will occur in the United States.
Pharmacokinetic Characterization of a Single 200 mg Dose of Doxycycline in Post-exposure Prophylaxis (PEP) of Sexually Transmitted Infections in Different Biological Compartments (DOXY-PK) ClinicalTrials.gov ID: NCT06007534	France	The objective of this study is to evaluate the pharmacokinetics of doxycycline in plasma, whole blood, dried blood spots (DBS), urine and hair after a single dose of doxycycline in men using oral doxycycline for post- exposure prophylaxis of sexually transmitted infections (syphilis or Chlamydia trachomatis) and having sex with men in France.

For more information on STI vaccine, diagnostic, and DoxyPEP clinical trials, visit AVAC's STI Clinical Trials <u>Dashboard</u>.

# Advocacy needs and considerations

DoxyPEP is a promising tool to prevent bacterial STIs, including chlamydia and syphilis. However, many questions remain, including how DoxyPEP should be implemented, if it is effective among cisgender women, and how it might impact the STI rates in LMICs. Below are additional DoxyPEP advocacy needs and considerations.

- Understand The Evidence for DoxyPEP. It is imperative to understand what DoxyPEP is and how it could help prevent STIs, especially among populations burdened by these infections. Advocacy is needed to ensure that as more information about DoxyPEP becomes available, findings are translated and made available for civil society and the general public. This type of engagement will ensure that information about DoxyPEP is available to healthcare workers, policy makers, implementers, and civil society.
- Engage with DoxyPEP Guidelines. Guidelines provide clinicians and other healthcare workers with guidance on how to prescribe DoxyPEP, along with information on how frequently a person should be tested for STIs while taking DoxyPEP, the amount that should be prescribed, and provide implementation and communication tips for addressing people's needs and concerns. Advocacy is needed to ensure that guidelines meet the needs of communities that are eligible to take DoxyPEP. Guidelines should be co-created with communities to ensure they meet the needs of people who could benefit from this prevention tool.

- Call for More Research on Diverse Populations. Currently there is limited research on how DoxyPEP could prevent STIs among cisgender women, young people, and the impact in different geographical settings, including LMICs. Advocacy is needed to ensure that research is conducted and available for more diverse populations.
- Stress Equity in Access. DoxyPEP will only be effective if it is accessible to all who are impacted by STIs. Advocacy is needed to ensure that DoxyPEP is affordable for those with limited resources and easily accessible to different communities, including those who might not engage in clinical care services.
- Insist on Monitoring and Evaluation Studies. Concerns remain on how DoxyPEP could impact AMR. Monitoring and Evaluation studies are needed to examine if DoxyPEP is leading to increased resistance among STIs and other pathogens. This is especially needed as AMR is a <u>leading cause of death</u>, globally, with the highest burden in LMICs.
- Advocate for Increased R&D in STI prevention, diagnostics and treatment. DoxyPEP is one tool that can be used to prevent STIs. Advocating for novel vaccines, diagnostics, and treatments can help to ensure we have more tools and choices to prevent STIs. As new vaccines, diagnostics and treatments become available, they need to be effective and affordable to ensure access for those who live in low-resource settings.

### **Get Involved**

To get involved in STI prevention advocacy and to learn more about AVAC's STI Program, visit <u>STIwatch.org</u> and <u>avac.org/sti</u>. Email <u>sti@avac.org</u> for questions or additional information. And to sign up for specific updates on STIs, <u>click here</u>.

#### Resources

#### Data:

- DoxyPEP: Luetkemeyer AF, Donnell D, Dombrowski JC, et al. Postexposure Doxycycline to Prevent Bacterial Sexually Transmitted Infections. N Engl J Med 2023;388(14):1296–306.
- DOXYVAC: Molina J-M et al. Final results of ANRS174 DOXYVAC: a randomized trial to prevent prevent STIs in MSM on PrEP. 31st Conference on Retroviruses and Opportunistic Infections, Denver, abstract 124, 2024.
- DEP-Kenya: Stewart J, Oware K, Donnell D, et al. Doxycycline Prophylaxis to Prevent Sexually Transmitted Infections in Women. N Engl J Med 2023;389(25):2331–40.
- IPERGAY: Molina J-M, Charreau I, Chidiac C, et al. Post-exposure prophylaxis with doxycycline to prevent sexually transmitted infections in men who have sex with men: an open-label randomised substudy of the ANRS IPERGAY trial. Lancet Infect Dis 2018;18(3):308–17.

#### **Guidelines:**

- The BC Centre for Disease <u>Control Position Statement on Doxycycline as Prophylaxis for Sexually</u> <u>Transmitted Infections</u>. November 8, 2023
- California Department of Public Health. <u>Doxycycline Post-Exposure Prophylaxis (doxy-PEP) for the</u> <u>Prevention of Bacterial Sexually Transmitted Infections (STIs)</u>. April 28, 2023.
- Centers for Disease Control and Prevention. <u>CDC Clinical Guidelines on the Use of Doxycycline</u> <u>Postexposure Prophylaxis for Bacterial Sexually Transmitted Infection Prevention</u>. June 4, 2024
- Chicago Department of Public Health. <u>Doxycycline Post-Exposure Prophylaxis (doxy-PEP) for the</u> <u>Prevention of Bacterial Sexually Transmitted Infections (STIs)</u>.

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- National Coalition of STD Directors. <u>Doxy at STI PEP Command Center</u>.
- New York City Department of Public Health and Hygiene. <u>Doxycycline Post-Exposure Prophylaxis (Doxy-PEP) to Prevent Bacterial Sexually Transmitted Infections</u>. November 9, 2023.
- New York State Department of Health AIDS Institute. <u>Doxycycline Post-Exposure Prophylaxis to</u> <u>Prevent Bacterial Sexually Transmitted Infections</u>. September 25, 2023.
- San Francisco Department of Public Health, Population Health Division. <u>Health Update Doxycycline</u> <u>Post-Exposure Prophylaxis Reduces Incidence of Sexually Transmitted Infections</u>. October 20, 2022.
- Werner RK et al. Position statement of the German STI Society on the prophylactic use of doxycycline to prevent STIs (Doxy-PEP, Doxy-PrEP). J Dtsch Dermatol Ges 2024 Mar;22(3):466-478. doi: 10.1111/ ddg.15282. Epub 2023 Dec 20

#### **Background on STIs and Resistance**

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#### Commentaries & Summaries:

- Doxycycline Postexposure Prophylaxis for Prevention of Sexually Transmitted Infections by Chase A. Cannon and Connie L. Celum
- <u>US releases first doxyPEP guidelines for preventing sexually transmitted infections</u> by Liz Highleyman
- An old drug offers a new way to stop STIs by Will Stone
- Taking antibiotic after sex cuts STIs by two-thirds, 'DoxyPEP' study finds by Gus Cairns
- Doxycycline Postexposure Prophylaxis for STIs in Women Uncertain Benefit, Urgent Need by Jeanne Marrazzo

- Dissent on doxyPEP: recent guidelines becoming more cautious by Gus Cairns
- <u>Using antibiotics to prevent STIs</u> by Krishen Samuel
- What new STI prevention findings mean for SA from Spotlight

#### Webinars:

- Past is Prologue: PrEP, Doxy PEP, and Empowering Ourselves to Shape the Future, hosted by the National Coalition of STD Directors during STI Engage 2024, June 2024
- DoxyPEP: Prevention, effectiveness, and AMR, hosted by AVAC, April 2024
- Tackling STIs and Syphilis Prevention with DoxyPEP, hosted by Health Resources & Services Administration (HRSA), April 2024
- doxyPEP: Promise, Opportunities, and Considerations for Implementation, hosted by the California Prevention Training Center, April 2023
- DoxyPEP Takes Center Stage, hosted by the National Coalition of STD Directors during STD Engage 2023, May 2023
- Doxy PEP, hosted by National Association of City and County Health Officials, November 2022
- Doxycycline for STI prevention: Evidence and Current Research, hosted by The Choice Agenda, October 2022

#### About AVAC

AVAC is an international non-profit organization that leverages its independent voice and global partnerships to accelerate ethical development and equitable delivery of effective HIV prevention options, as part of a comprehensive and integrated pathway to global health equity. Follow AVAC on Twitter <u>@HIVpxresearch</u>; find more at <u>www.avac.org</u>, <u>www.prepwatch.org</u> and <u>www.stiwatch.org</u>.