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Doxy-PEP Acceptability and Feasibility Study in Ukraine: Strengthening STI Prevention and Its Integration into HIV Care

Exploring the Potential of Doxycycline for STI Prevention in Ukraine

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AIDS	acquired immunodeficiency syndrome
AMR	antimicrobial resistance
ART	antiretroviral therapy
CLO	community-led organisation
CDC	US Centers for Disease Control and Prevention
Doxy-PEP	doxycycline post-exposure prophylaxis
Doxy-PrEP	doxycycline pre-exposure prophylaxis
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EMIS-2024	The European Men Who Have Sex with Men and Trans People Internet Survey 2024
ESKAPE	a group of clinically significant pathogens with a high potential for antimicrobial resistance
EU	European Union
GI tract	gastrointestinal tract
HCF	healthcare facility
HIV	human immunodeficiency virus
IDP	internally displaced person
IQR	interquartile range
IRB	Institutional Review Board
LGBT	lesbian, gay, bisexual and transgender people
MoH	Ministry of Health of Ukraine
MSM	men who have sex with men
NGO	non-governmental organisation
PAF	Product Acceptability Framework
PCR	polymerase chain reaction
PEP	HIV post-exposure prophylaxis
PHC	Public Health Center of the Ministry of Health of Ukraine
PrEP	HIV pre-exposure prophylaxis
STI	sexually transmitted infection
TFA	Theoretical Framework of Acceptability
TGW	transgender women
TRSSC	Territorial Recruitment and Social Support Centre
US	ultrasonography
WHO	World Health Organization

EXECUTIVE SUMMARY

Doxycycline post-exposure prophylaxis (Doxy-PEP) is gaining increasing international attention as an option for preventing bacterial sexually transmitted infections (STIs), including syphilis, gonorrhoea and chlamydia, among men who have sex with men (MSM) and transgender women (TGW). In Ukraine, a relatively developed human immunodeficiency virus (HIV) prevention and pre-exposure prophylaxis (PrEP) infrastructure coexists with fragmented STI diagnostics and antimicrobial resistance (AMR) surveillance, while services are delivered under conditions of full-scale war. This creates specific evidence and implementation needs compared with countries where Doxy-PEP has already been studied.

STUDY AIM. The study assessed the acceptability and potential feasibility of introducing Doxy-PEP in Ukraine to inform future decisions on whether it should be integrated into national HIV prevention frameworks and related sexual health services and, if so, through which model. It examined the factors shaping willingness to use Doxy-PEP among MSM and TGW, as well as the system, policy and programme conditions affecting its potential introduction. The study did not involve prescribing doxycycline, piloting a service or clinically monitoring actual use of the medication.

METHODS. The study used a qualitative design based on semi-structured in-depth interviews conducted between 10 February and 4 April 2026 in Kyiv, Lviv and Odesa, with additional participants recruited at national level. A total of 130 interviews were completed across six groups: 30 MSM and 30 TGW who met study eligibility criteria informed by international approaches to identifying populations for whom Doxy-PEP may be most relevant; 18 professionals from non-governmental organisations (NGOs) providing HIV and STI services; 18 healthcare providers; 12 representatives of community-led organisations (CLOs); and 22 national and regional stakeholders working in HIV, STIs or AMR. Acceptability was assessed using the Theoretical Framework of Acceptability and the Product Acceptability Framework. Potential feasibility was assessed using an adapted World Health Organization health systems framework.

KEY FINDINGS. Doxy-PEP was broadly acceptable to potential users, although this acceptability was clearly conditional. MSM and TGW saw its value primarily after sexual contacts in which a condom had not been used as planned or control over the situation had been limited. They valued the opportunity to take action after an exposure, reduce anxiety and potentially avoid an STI and a treatment pathway that could be costly, inconvenient or stigmatising. For some participants, Doxy-PEP also strengthened personal control because taking the medication after sex did not depend on a partner's agreement. Most viewed it as an additional or back-up option for selected situations rather than a replacement for condoms, testing or treatment.

Willingness to use Doxy-PEP depended on a clear medical rationale: who it was appropriate for, after which contacts it should be taken, how frequently it could be used, how prophylaxis differed from treatment, and how doxycycline could be combined with PrEP, antiretroviral therapy (ART) and other medications. Concerns related to AMR, gastrointestinal effects, effects on the microbiome, allergies and repeated antibiotic use. For TGW, additional considerations included compatibility with hormone therapy, access to trans-competent care, and protection from judgement, misgendering and unwanted disclosure. Awareness was uneven: some potential users first learned about Doxy-PEP during the interview, while a smaller number reported taking doxycycline after sex or knowing others who had done so, indicating that informal use may already occur without a consistent clinical protocol.

Potential users preferred familiar and trusted services, although no single access point met everyone's needs. For some, existing PrEP, ART or HIV services represented the most natural route, while others placed greater trust in NGOs, CLOs, peer counsellors or particular friendly healthcare providers. Rapid contact within the post-exposure time window and the availability of telephone, messenger-based or online consultations were

important, especially in the context of displacement, service disruption, transport constraints and concerns related to wartime mobilisation pressures. At the same time, participants expected access to in-person assessment, testing and treatment when symptoms, positive results or other clinical needs were present.

Confidentiality was an integral part of access: MSM and TGW did not want to disclose their sexual practices, gender identity or other sensitive information repeatedly to different services. Some supported providing an advance supply of the medication to selected users but linked this option to prior assessment, clear instructions, monitoring and an accessible pathway for questions or symptoms rather than unrestricted stockpiling.

Professional respondents generally recognised the potential value of Doxy-PEP but assessed it in relation to the safeguards required for implementation. Healthcare providers focused on indications, contraindications, frequency limits, medication compatibility, management of symptoms and positive test results, responsibility for antibiotic prescribing and AMR risks. NGO professionals and CLO representatives emphasised trust, confidentiality, community-appropriate communication and practical accessibility. Stakeholders focused on the regulatory basis for prescribing, financing, monitoring, data protection, links to STI diagnostics and the ability of a pilot to generate evidence for subsequent decisions.

Across respondent groups, potential candidacy was associated with risk within populations supported by the current evidence rather than determined solely by MSM or TGW identity or PrEP or ART status. Relevant factors included recent or recurrent bacterial STIs, repeated condomless contacts, multiple partners, group sex, chemsex, sex parties, paid sex and other recurring circumstances involving increased or less controllable risk. Criteria should be clinically usable, avoid stigmatising language and not require excessive disclosure of private information. TGW should remain explicitly visible in eligibility criteria, information materials and referral pathways rather than being implicitly incorporated into a model framed exclusively around MSM.

The strongest convergence across groups concerned a hybrid model combining clinical decision-making and healthcare-provider responsibility with information, navigation and support from NGOs and CLOs. Such a model should provide confidential communication, flexible access and the possibility of rapid escalation to clinical assessment. Its implementation would require a single clinical and service-delivery algorithm covering candidacy, dosage, timing, frequency limits, contraindications, medication compatibility, management of symptoms and positive results, repeat access and the division of responsibilities. Staff training, clear referral mechanisms, proportionate and confidential monitoring, and financing of the full service pathway rather than the medication alone would also be required.

The clinical, service and system conditions for a controlled pilot are partly in place but unevenly developed. The strongest foundation is the existing HIV, PrEP and ART infrastructure, together with friendly healthcare providers and NGO and CLO navigation already reaching some people with relevant risk. The weaker components relate to bacterial STIs: gonorrhoea and chlamydia diagnostics are less accessible and systematic, dermatovenereology pathways may involve cost, delays or stigma, and AMR monitoring is insufficiently integrated into sexual health services. Gonorrhoea presents a particular challenge because Doxy-PEP provides less reliable protection against it, local resistance data are limited, and AMR surveillance remains weakly connected to sexual health services.

The central conclusion is that the acceptability and feasibility of Doxy-PEP in Ukraine are determined primarily by the model through which access is organised rather than by the availability of doxycycline. The findings support integrating Doxy-PEP into existing PrEP and ART services and NGO-delivered services through a hybrid pathway linked to STI testing and treatment, confidentiality, flexible access formats, and proportionate monitoring of use and AMR risks.

LIMITATIONS. The qualitative design and purposive participant selection do not provide statistical representativeness: the study was intended to explore different types of experience rather than estimate the prevalence of particular views. The potential-user sample was limited to MSM and TGW already engaged in HIV prevention or treatment pathways, and the findings may therefore not reflect the experiences and preferences of people outside these services. The recruitment shortfall among TGW in Lviv was addressed through additional recruitment in other cities. Data on sexual behaviour, STI history and medication use were based on self-report. As the study did not involve prescribing Doxy-PEP, clinical observation or assessment of actual outcomes, it cannot determine real-world uptake, adherence, effectiveness, safety, behavioural effects or impact on AMR in Ukraine.

KEY RECOMMENDATIONS. The report's ten recommendations define the minimum conditions for a controlled Doxy-PEP pilot in Ukraine:

(1) Develop and implement a controlled pilot in selected service pathways and locations.

(2) Develop a single clinical and service-delivery algorithm covering candidacy, dosage, timing, frequency limits, contraindications, medication compatibility, management of symptoms and positive test results, repeat access and referral pathways.

(3) Apply risk-based access criteria within populations supported by the current evidence, using clinically relevant criteria without stigmatising language or excessive requirements for disclosure of private information.

(4) Establish a hybrid access pathway with a clear division of roles between healthcare providers, NGOs and CLOs and ensure confidential, flexible and timely access.

(5) Provide a minimum package of STI diagnostics and referral, including accessible syphilis testing and feasible pathways for diagnosing gonorrhoea and chlamydia at relevant anatomical sites.

(6) Strengthen AMR surveillance, particularly for gonorrhoea, and incorporate a feasible AMR component into the pilot design.

(7) Develop shared training and communication materials for healthcare providers, NGOs and CLOs covering clinical use, AMR, medication compatibility, confidentiality, trans competence and non-judgemental communication.

(8) Establish proportionate and confidential pilot monitoring covering eligibility, frequency and correct use, links to testing, repeat access, symptoms, positive results and feasible AMR indicators.

(9) Finance the full service cycle rather than the medication alone, including clinical time, NGO and CLO navigation, diagnostics, training, communication, monitoring, supervision and coordination.

(10) Predefine the pilot's objectives, success criteria and conditions for scale-up before it begins. Partners should agree what the pilot is intended to demonstrate, which indicators will be used, what outcomes will be considered successful, and what findings would support continuation, modification or scale-up.

Doxy-PEP should not be regarded as ready for broad implementation without prior piloting. Its potential to address the gap between Ukraine's more developed HIV prevention system and its less structured prevention of bacterial STIs can be realised only if the medication remains linked to medical assessment, STI testing and treatment, community trust, confidentiality and rational antibiotic use.

1 BACKGROUND AND RATIONALE

Sexually transmitted infections (STIs) remain a public health concern in Ukraine [1], despite the decline in officially registered cases. National statistics show an overall reduction in reported cases of syphilis, gonorrhoea and chlamydia between 1999 and 2024 [2], although this trend should be interpreted with caution. Since 2022, the number of reported syphilis cases has gradually increased, particularly cases of early syphilis. Syphilis and acute gonorrhoea are more frequently reported among men, while official data indicate that chlamydia is more commonly detected among women. This pattern broadly reflects trends observed in many countries of the World Health Organization (WHO) European Region outside the European Union (EU) [3]. In 2024, the estimated incidence rates [4] were approximately 7.5 per 100,000 population for syphilis, 2.3 – for gonorrhoea and 9.2 – for chlamydia, although these figures capture only the documented share of the epidemic.

Official statistics are likely to substantially underestimate the actual burden of STIs. An estimated 30–40% of cases remain undetected because many infections are asymptomatic, testing is irregular, access to high-quality laboratory diagnostics is limited [5], and private healthcare providers are not fully integrated into national reporting systems [6]. The continued use of diagnostic methods with insufficient sensitivity for gonorrhoea and chlamydia points to the need for wider use of validated molecular diagnostic tests [7]. Based on prevalence levels reported in European countries [8], the actual number of men with gonorrhoea and chlamydia in Ukraine may be considerably higher than official figures suggest, while estimates for syphilis remain less certain. The apparent decline in registered cases may therefore reflect limitations in STI detection, reporting and surveillance as well as changes in the epidemiological situation.

Men who have sex with men (MSM) and transgender women (TGW) are disproportionately vulnerable to human immunodeficiency virus (HIV) and bacterial STIs [9-12] because of intersecting behavioural, social and structural factors [13-15]. These include sexual practices, number of partners, inconsistent condom use, previous STIs, stigma, discrimination and barriers to accessing friendly healthcare services. A history of syphilis or gonorrhoea among HIV-negative men is a strong predictor of subsequent HIV acquisition [16, 17], making bacterial STI prevention an important component of the broader HIV response.

Findings from Ukrainian biobehavioural studies confirm a substantial burden of STIs among MSM and TGW. In a 2021 study among MSM, self-reported prevalence was 5% for syphilis and 7% for both chlamydia and gonorrhoea, while only 57% of participants who tested positive for syphilis were aware of their status [18]. When considered against the estimated size of the MSM population [19], these findings may represent between 5,000 and almost 9,000 people living with one of these infections. Self-reported rates were lower among TGW, although testing identified syphilis more frequently than participants reported it themselves [20]. The gap between infection, awareness of status and regular testing demonstrates the need for systematic screening, accessible diagnostic services and additional prevention options.

The expansion of access to HIV pre-exposure prophylaxis (PrEP) has changed the prevention landscape for populations at increased risk in Ukraine. Introduced in Ukraine in 2017 [21], PrEP has become an important tool for reducing the risk of HIV acquisition [22]. International evidence, however, shows a high burden of bacterial STIs among PrEP users, particularly during the first year of use [23, 24]. Across different studies, between 43% [25] and 57% [26] of PrEP users were diagnosed with at least one STI. This has been associated with less frequent condom use [27], a greater number of sexual partners, group sex and reduced

fear of HIV [28]. Current national standards allow STI testing to be offered to PrEP users [29], in line with international recommendations [30, 31], but national policy still lacks targeted, evidence-based strategies for preventing bacterial STIs.

Doxycycline post-exposure prophylaxis (Doxy-PEP), or post-exposure prophylaxis with doxycycline, is increasingly being considered as a biomedical approach to reducing the risk of bacterial STIs among populations with increased vulnerability. It involves taking a single 200 mg dose of doxycycline no later than 72 hours after sexual contact associated with a risk of infection, preferably – within the first 24 hours. Randomised controlled trials among MSM and TGW have demonstrated substantial reductions in STI risk regardless of HIV status [32]: 73–87% for syphilis, 70–89% – for chlamydia and 17–57% – for gonorrhoea [33]. Pooled evidence also confirms reductions in the risk of any bacterial STI, chlamydia and syphilis [34], although protection against gonorrhoea remains lower and more variable [35].

Doxy-PEP can be used alongside other biomedical prevention approaches: concurrent use of Doxy-PEP and PrEP is considered safe [36], and no clinically significant interactions with gender-affirming hormone therapy for transgender people have been identified [33]. Doxycycline is widely used for a range of infectious and non-infectious conditions – including malaria [37], rosacea [38] and acne [39]. Its adverse effects are generally mild or moderate [40] and most commonly involve gastrointestinal symptoms or photosensitivity [41, 42]. Nevertheless, even a well-established medication requires clear instructions on how it should be taken: with or after food, with sufficient water, while remaining upright afterwards, without taking calcium or iron at the same time, and with appropriate sun protection during regular use [43].

The preventive use of doxycycline requires careful consideration because of the risks of antimicrobial resistance (AMR) and potential effects on the microbiome [44]. The primary concern is the selection of resistant strains, particularly *Neisseria gonorrhoeae*, which has already developed resistance to all major classes of antibiotics [30]. Mathematical models suggest that Doxy-PEP may reduce gonorrhoea incidence over an extended period while also increasing selection pressure for resistant strains and gradually losing effectiveness [45]. Resistance levels may vary by strain [46, 47], population and local context [48]. In 2024, tetracycline resistance among *N. gonorrhoeae* isolates from 22 European countries was 62.3% (range: 16,5–100%) and was primarily associated with MSM [49]. This issue is particularly relevant for Ukraine, where data on N. gonorrhoeae among MSM and TGW remain limited, as they do more broadly across the WHO European Region outside the EU [3], and systematic AMR monitoring is not sufficiently integrated into the national surveillance system [50-52]. Potential resistance in other potentially pathogenic flora, including *Staphylococcus aureus* and respiratory pathogens [53], must also be considered, together with possible effects on the microbiome – although doxycycline rarely causes antibiotic-associated diarrhoea [54, 55], even short courses of antibiotics can alter the composition of the gut microbiota [56], and these changes may be more pronounced among people living with HIV [57]. Any introduction of Doxy-PEP should therefore be accompanied by clear information about its benefits and risks, defined indications for use [58, 59], regular testing and expanded monitoring covering AMR [44, 60], antibiotic consumption, trends in bacterial STIs, user characteristics and sources of access to the medication [61].

International guidelines and position statements generally support targeted use of Doxy-PEP among MSM and TGW at increased risk of STIs, although eligibility, dispensing and monitoring criteria vary across countries and organisations [33, 40, 43, 53, 62-65]. Doxy-PEP is most commonly recommended or considered for people with a recent or recurrent STI, high levels of sexual activity, group sex, chemsex or attendance at sex parties *(Appendix 1)*. The position of the European Centre for Disease Prevention and Control (ECDC) for EU/European Economic Area (EEA) countries follows this principle of restricted use: Doxy-PEP is regarded as an individual, clinically supervised option for people at high risk of STIs, while population-level implementation is not supported at this stage [61]. Within this model, Doxy-PEP should form part of a broader sexual healthcare pathway that includes risk assessment, informed decision-making, STI testing and treatment, vaccination, PrEP or HIV post-exposure prophylaxis (PEP),

management of adverse effects and periodic reassessment of whether the medication is still needed [61]. Most guidelines also emphasise that widespread or daily use of doxycycline should be avoided, including its use as pre-exposure prophylaxis (Doxy-PrEP) [40, 62, 66], which has recently attracted considerably greater interest [67, 68].

The potential introduction of Doxy-PEP in Ukraine requires a dedicated contextual assessment. Doxycycline, like other antibiotics, is available by prescription under regulations introduced by the Ministry of Health of Ukraine (MoH) in 2022 [69]. Both domestically manufactured and imported products are available on the Ukrainian market, at prices ranging from UAH 27 to UAH 210 per pack. Doxycycline is used to treat chlamydia [70] and as an alternative treatment for syphilis [71], but its preventive use as Doxy-PEP is not included in national protocols. The broader regulatory framework for STI surveillance remains fragmented: some national documents date back to 1998 [72, 73], while current clinical guidelines focus largely on diagnosis and treatment without providing a comprehensive framework for prevention, screening or AMR monitoring [70, 71, 74]. Laboratory capacity in the public sector is also often limited, with continued reliance on outdated diagnostic methods [75].

The 2025 Standard of Medical Care for HIV Infection provides the first partial basis for discussing Doxy-PEP within the national regulatory framework: it mentions counselling MSM with recurrent STIs about post-exposure use of doxycycline as part of PrEP follow-up [76]. This brief reference, however, differs substantially from international guidance, which specifies dosage, indications, monitoring requirements and AMR-related precautions [77]. The Ukrainian standard does not define eligibility criteria, contraindications, monitoring requirements or a model for clinical decision-making, and Doxy-PEP remains absent from official STI guidance. Healthcare providers may therefore discuss this option with PrEP users without having sufficient national guidance on who should be offered Doxy-PEP, when it should be offered or how it should be used.

Available evidence suggests that informal use of doxycycline for STI prevention may already be occurring in Ukraine – as it is in other European countries [78-80]. Studies from the United Kingdom [81], Belgium [58], the Netherlands [82] and Australia [83] found that 9–15% of MSM had used antibiotics, including doxycycline, to prevent STIs before official recommendations were introduced. Data summarised by ECDC show a similar pattern: in EMIS-2024, 8.4% of MSM in EU/EEA countries who had sex with non-steady male partners during the previous 12 months reported using antibiotics to prevent STIs. Such use was more common among people living with HIV, PrEP users and respondents with a greater number of partners [61]. In 2024, 13 of the 29 countries participating in an ECDC survey of national STI responses also reported indications of informal Doxy-PEP use, based on information from clinicians, community organisations or surveys [61]. According to the menZDRAV Foundation [84], some doctors in Ukraine already recommend doxycycline to patients with recurrent episodes of syphilis and would be prepared to consider Doxy-PEP for people at high risk if official guidance and an adequate evidence base were available [85]. Some community members may also take the medication without clinical supervision and may avoid telling their doctor because they fear being judged [84]. These practices indicate genuine demand for preventive options while also underscoring the risks of self-prescribing in the absence of clear national guidance.

The full-scale war has created additional barriers to STI prevention, testing and treatment, and the potential introduction of Doxy-PEP must therefore be assessed within the wider service environment. Population displacement, loss of income, deteriorating mental health, restricted mobility, changes in healthcare providers, pressure on the healthcare system and increasing reliance on non-governmental organisations (NGOs) and friendly services all shape people's ability to use sexual health services. For some MSM and TGW, additional barriers include fear of travelling around the city, contact with public institutions, concerns related to the ongoing military mobilisation and recruitment campaign or the risk of stigmatising treatment [86]. Under these conditions, Doxy-PEP should be considered not simply as a clinically effective medication but as a service that requires a safe access pathway, clear counselling, feasible testing arrangements and continued follow-up.

International experience shows that willingness to use Doxy-PEP is shaped by local conditions of trust, stigma and service organisation [68, 85, 87-90]. Clinical findings therefore cannot be directly extrapolated to the Ukrainian context. For healthcare providers and stakeholders, key questions concern eligibility criteria, integration with PrEP and other services, cost, sustainability, monitoring and AMR surveillance [85, 91-93]. Given the likelihood of informal use, controlled introduction will require coordinated engagement among public health authorities, healthcare professionals and community organisations. These actors can support accurate communication, safe navigation, engagement with potential users and continued monitoring of the effects of this approach [61]. Decisions about introducing Doxy-PEP must therefore consider the effectiveness of the medication alongside the conditions that shape its acceptability, feasible access models, service barriers and the capacity of the system to support controlled use within a particular community and healthcare setting.

This study assessed the acceptability, potential feasibility and conditions for introducing Doxy-PEP in Ukraine among the populations for whom this approach may be most relevant. It explored perceptions of Doxy-PEP among potential users from MSM and TGW communities, together with the views of healthcare providers, representatives of NGOs, community-led organisations (CLOs), and national and regional stakeholders. Particular attention was given to how participants understood STI risk, how they viewed antibiotic prophylaxis, which conditions would make Doxy-PEP acceptable, which access models they considered realistic, and how this approach could be integrated into existing HIV prevention, sexual health and community service frameworks in Ukraine.

2 AIM AND OBJECTIVES

THE STUDY AIMED TO ASSESS the acceptability and feasibility of introducing doxycycline post-exposure prophylaxis (Doxy-PEP) in Ukraine to inform future decisions on whether and how this approach could be integrated into national HIV prevention frameworks and related sexual health services. It was designed to generate evidence that could help government, non-governmental and community programmes determine whether Doxy-PEP should be piloted, under what conditions it may be acceptable to potential users, and which system-level requirements would be needed for its safe and controlled introduction.

To achieve this aim, the study had **the following objectives:**

(1) To assess the acceptability of Doxy-PEP among potential users from MSM and TGW communities by examining their willingness, motivations, barriers and the factors shaping their perceptions and intention to use the medication

(2) To analyse the programmatic, policy and system-level factors that may affect the introduction of Doxy-PEP in Ukraine, including the views of healthcare providers, programme managers and stakeholders, regulatory frameworks, resource constraints and the potential for integration into existing HIV/STI prevention services

(3) To develop practical recommendations for an implementation roadmap outlining possible delivery models, approaches to risk mitigation, and mechanisms for ensuring the effectiveness, safety and accessibility of Doxy-PEP under real-world health system conditions.

The study focused on **two main analytical questions:** which factors shape the acceptability of and willingness to use Doxy-PEP among MSM and TGW in Ukraine, and which system-level, policy and programmatic conditions affect its potential feasibility and integration into national HIV/STI prevention programmes.

The study did not involve prescribing doxycycline, piloting a service or clinically monitoring actual use of the medication. Its focus – at the stage preceding any programmatic or regulatory decision – was on expectations, perceptions, barriers, conditions of acceptability and potential implementation models.

3. METHODOLOGY

3.1. Study design

The study used a qualitative design based on semi-structured in-depth interviews with potential Doxy-PEP users, service providers, community representatives and stakeholders working in HIV, STIs, sexual health or AMR. A qualitative approach was selected to understand how different groups of participants made sense of Doxy-PEP, which conditions made it acceptable or problematic, and what could affect its potential introduction in Ukraine. The study did not include any medical intervention, provision of medication or observation of actual Doxy-PEP use. Findings on acceptability and feasibility were based on participants' accounts, prior experience, professional perspectives, expectations and assessment of possible models for using doxycycline to prevent STIs.

3.2. Conceptual framework

The assessment of Doxy-PEP acceptability drew on the Theoretical Framework of Acceptability [94, 95] and the Product Acceptability Framework [96], adapted to the preventive use of an antibiotic to reduce the risk of bacterial STIs *(Appendix 2)*. Acceptability was understood as the extent to which potential users, service providers and stakeholders considered Doxy-PEP appropriate, understandable, safe, worthwhile and compatible with their own experience, professional role or programme context [97]. The analysis covered the characteristics of the medication, perceived benefits and risks, attitudes towards antibiotics, ability to follow a post-exposure regimen, confidentiality, stigma, social influences, and trust in different channels through which information and the medication could be obtained.

The assessment of feasibility drew on an adapted [94] WHO Framework on Health Systems [98] *(Appendix 3)*. Feasibility was understood as the extent to which Doxy-PEP could be integrated into existing healthcare and community service structures, taking account of resource, regulatory, workforce, logistical and programmatic conditions [97]. The analysis covered delivery models; integration with PrEP, antiretroviral therapy (ART), STI testing and NGO services; workforce capacity; prescription-based access; procurement and dispensing of the medication; monitoring of antibiotic use and AMR; reporting; and data management.

3.3. Study locations

The study was conducted in Kyiv, Lviv and Odesa and also included interviews with national-level participants. The cities were selected because of their epidemiological and programmatic importance for HIV and STIs, the presence of service networks for MSM and TGW, and the feasibility of conducting fieldwork safely during the full-scale war. All three cities also serve as regional hubs for internally displaced persons (IDPs), allowing the study to capture, to some extent, the experiences of people from different regions and types of settlements across Ukraine.

3.4. Study populations and sample

The study included six target groups: MSM and TGW who met the criteria for potential Doxy-PEP use; NGO professionals providing HIV and/or STI prevention services to MSM and TGW; healthcare providers involved in HIV and STI prevention, diagnosis or treatment; activists and representatives of CLOs; and representatives of institutions and organisations involved in the national or regional response to HIV, STIs or AMR.

A total of 130 interviews were conducted, as shown in *Table 1*. The inclusion criteria for MSM and TGW were informed by international approaches to identifying populations for whom Doxy-PEP is most relevant. Criteria for professional groups reflected experience in HIV, STIs, prevention, treatment, community support, advocacy, programme management or public health policy. Detailed inclusion and exclusion criteria are presented in *Table 2*.

Table 1. Study sample

No.	Target group	Kyiv	Lviv	Odesa	National level	Total
1	MSM who meet the eligibility criteria for Doxy-PEP	10	10	10	-	30
2	TGW who meet the eligibility criteria for Doxy-PEP	12	7	11	-	30
3	NGO professionals providing HIV/STI prevention services to MSM and TGW	6	6	6	-	18
4	Healthcare providers delivering HIV and/or STI treatment and prevention services	7	5	6	-	18
5	Activists and representatives of CLOs	2	1	2	7	12
6	Representatives of institutions and organisations involved in the national or regional response to HIV/STIs/AMR	4	4	4	10	22
Total		**41**	**33**	**39**	**17**	**130**

Table 2. Inclusion and Exclusion Criteria

Participant group	Inclusion criteria	Exclusion criteria
All participants	Aged 18 years or older; residence in Kyiv, Lviv or Odesa for at least three months for regional participants; willingness to provide verbal informed consent; ability to complete the interview in Ukrainian or Russian; consent to audio recording	Alcohol or drug intoxication that prevents meaningful participation; current participation in research that may create a conflict of interest or a risk of duplicate recruitment; membership of the research team or a subordinate relationship with the researchers
MSM who meet the eligibility criteria for Doxy-PEP	Assigned male at birth.	Medical contraindications to doxycycline, such as an allergy to tetracyclines or use of medications incompatible with doxycycline – systemic retinoids, barbiturates, carbamazepine and phenytoin – were not grounds for exclusion because the study did not involve prescribing the medication.
TGW who meet the eligibility criteria for Doxy-PEP	Experience of condomless anal or oral sex with one or more partners assigned male at birth during the previous 12 months; previously diagnosed HIV infection, regardless of ART use or date of diagnosis, OR a negative HIV test within the previous three months combined with current PrEP use or an intention to initiate PrEP within 30 days of the interview; at least one additional STI risk factor: a confirmed or self-reported bacterial STI *(syphilis, gonorrhoea or chlamydia)* during the previous 12 months; recurrent bacterial STIs during the previous 12 months; ≥10 male partners during the previous six months; participation in group sex, chemsex or higher-risk sexual practices *(including providing sexual services for payment)*.	
	Self-identification as a transgender woman – a person assigned male at birth who identifies as a woman, regardless of whether she has undergone hormone therapy or surgical procedures.	
NGO professionals providing HIV/STI prevention services to MSM and TGW	Staff members or consultants of NGOs providing HIV/STI prevention services to MSM and/or TGW, including PrEP support, testing, navigation, case management and psychosocial support; at least one year of experience in relevant programmes; direct involvement in service delivery or management of the relevant programmes.	No practical experience of working with MSM or TGW; exclusively administrative or technical roles without involvement in programme implementation.
Healthcare providers delivering HIV and/or STI treatment and prevention services Physicians, including infectious disease specialists, dermatovenereologists and family physicians, working in public, municipal or private healthcare facilities that provide ART, PrEP, STI testing or treatment; experience in providing ART, PrEP, STI testing, prevention or treatment services; at least one year of experience working with MSM and/or TGW; willingness to discuss STI prevention and patient counselling.		No experience in HIV/STI services or in working with MSM/TGW; exclusively administrative roles without clinical practice; a break from clinical practice of more than 12 months.
Activists and representatives of CLOs	Leaders or representatives of CLOs working in advocacy for the rights of MSM and TGW, access to healthcare, and HIV and STI prevention; at least one year of experience in advocacy, supporting access to healthcare, HIV/STI prevention or other work related to the health of MSM and/or TGW	No involvement in HIV/STI issues, lesbian, gay, bisexual and transgender (LGBT) health, or community support.

Participant group	Inclusion criteria	Exclusion criteria
Representatives of institutions and organisations involved in the national or regional response to HIV/STIs/AMR	Representatives of government, donor, international, academic, professional or civil society institutions involved in policy, coordination, funding, technical support, research or programming related to HIV, STIs or AMR; a position or professional role involving decision-making or participation in policymaking, an expert or advisory function in HIV/STIs/AMR, coordination of healthcare projects or programmes, or analytical or research work related to STI prevention; at least one year of experience in the relevant field; willingness to discuss regulatory issues, financing, AMR risks and perspectives on integrating Doxy-PEP into national prevention programmes.	Positions or roles unrelated to HIV/STI/AMR policy or practice; no managerial, expert or analytical responsibilities; a conflict of interest involving pharmaceutical companies or antibiotic suppliers.

3.5. Participant recruitment

Participant recruitment and data collection were conducted by INFO SAPIENS INTERNATIONAL LLC in coordination with the research team at ICF "Alliance for Public Health". Participants were recruited purposively, using maximum variation sampling to capture differences in experience, behavioural characteristics, and regional and social contexts. The main recruitment channels included partner NGOs, CLOs, LGBT-friendly healthcare services, professionals involved in PrEP, ART, STI testing or treatment, and professional and expert networks working in HIV, STIs and public health. Referrals from previously recruited participants or partners were used where necessary *(snowball sampling)*, but only to a limited extent to reduce the sample's dependence on particular social networks.

Potential participants from MSM and TGW communities underwent pre-screening through partner organisations or services. Once they had given initial consent, their contact details were shared with the research team, which provided further information about participation and arranged a suitable interview time. Professional participants were recruited through formal invitations, professional networks and direct contact with relevant organisations or institutions. Participants were informed that the interview was not an assessment of their work or organisation and that their views would be anonymised.

3.6. Conduct of interviews

Interviews were conducted individually and remotely via Zoom, taking account of the security situation, participants' preferences and the research team's capacity. The preferred interview language *(Ukrainian or Russian)*, suitable time and any preference regarding the interviewer's gender were discussed during recruitment. Interviews were conducted by eight interviewers with experience in qualitative public health research or engagement with key communities. All interviewers received training on ethical procedures, use of the interview guides, non-discriminatory communication, confidentiality, and responses to emotional distress or security risks.

The interview guides recognised that some participants might not have heard of Doxy-PEP or might have only fragmentary information about it, and the interviews therefore followed a staged structure. Participants were first asked to describe their personal or professional experience of HIV and STI prevention, their attitudes towards antibiotics, and any experience of using or prescribing doxycycline or other antibiotics "after sex". The interviewer then provided a brief standardised explanation of Doxy-PEP and asked the participant to assess the approach in light of this new information. The main part of the interview combined open-ended questions, probing questions, short informational prompts, scenarios and comparative questions. Topics included dosage, the timing window, effectiveness against different STIs, adverse effects, AMR, compatibility with PrEP, ART or hormone therapy, cost, access channels, keeping a supply of the medication, prescription

requirements, online consultations, confidentiality and the risk of unwanted disclosure. At the end of the interview, participants were asked to summarise their views on Doxy-PEP and identify its main benefits and risks, the conditions under which it would be acceptable, their information needs, and the potential roles of different actors in future implementation.

The median interview duration was 75 minutes, range – 34–165 minutes, depending on the target group and the participant's experience. The combined duration of all interviews was almost 174 hours.

3.7. Data processing and analysis

All interviews were transcribed in the language in which they were conducted, checked against the audio recordings, and stripped of personal identifiers or details that could reveal the identity of a participant, professional, healthcare facility or organisation.

The data were analysed using thematic analysis, combining deductive *(theory-driven)* and inductive *(data-driven)* approaches. The deductive component was guided by the conceptual frameworks, while the inductive component allowed the team to identify themes related to local service practices, the war and mobilisation context, stigma, self-directed antibiotic use, trans-specific healthcare navigation and unequal access to STI testing. During the initial stage, the team conducted a familiarisation review of a selection of transcripts from different target groups and developed a codebook containing both deductive and inductive codes. Coding was conducted in Microsoft Word and Microsoft Excel. Several team members reviewed 30% of the transcripts, and differences in code interpretation were discussed until a shared understanding was reached. Following coding, the data were organised into categories and themes, analysed both within participant groups *(within-group analysis)* and across groups *(cross-case comparative analysis)*, and interpreted in relation to the study's conceptual frameworks.

The analysis also considered the stage of the interview at which each statement was made: before the participant received standardised information about Doxy-PEP, after the initial explanation of the concept, or after further clarification regarding effectiveness, adverse effects, compatibility, cost, prescription-based access or AMR. This made it possible to distinguish participants' initial perceptions, their responses to new information and their final assessment of acceptability.

3.8. Ethical considerations

The study was conducted in accordance with the principles of voluntary participation, informed consent, confidentiality, risk minimisation and non-discriminatory engagement. The protocol and study instruments were approved before data collection by the Institutional Review Board of ICF "Alliance for Public Health" *(Kyiv, Ukraine, IRB#00012333, FWA#00027488)*.

Before each interview, participants were informed about the purpose of the study, the topics to be discussed, the voluntary nature of participation, their right to decline to answer any question or withdraw, the conditions of audio recording and the measures used to protect confidentiality. All participants provided verbal informed consent before the interview began. The main risks – emotional discomfort and a potential breach of confidentiality – were minimised by conducting interviews in private settings, allowing participants to skip any question or end the conversation, and ensuring that interviewers were prepared to pause or terminate an interview if signs of distress emerged *(no such need was documented during data collection)*. Given the martial law context, interviews were paused in the event of an air-raid alert or other emergency and resumed once the situation had stabilised or were rescheduled. Participants received UAH 940 as compensation for their time.

Each participant was assigned a unique code containing no personal information. This code was used in transcripts, analytical tables and quotations. The key linking contact details to participant codes was stored separately from the analytical files. Audio recordings, transcripts, screening forms, field notes and analytical materials were stored electronically with controlled access. Quotations included in the report were anonymised, and potentially identifying details were removed or generalised.

Quotation labels contain a limited set of characteristics required to interpret the statement. For MSM and TGW, the label includes the target group, city, ART or PrEP status, lifetime history of bacterial STIs and age, for example: "MSM, Kyiv, on PrEP, no target STIs, aged 33". In these labels, "target STIs" refers to syphilis, gonorrhoea or chlamydia reported by the participant during screening. For professional groups, labels provide generalised information on the participant's role, area of work and length of relevant professional experience, presented as a range: for healthcare providers – specialty, city, type of healthcare facility (HCF) and length of experience; for NGO professionals – city, standardised functional category and length of experience; for CLO representatives – city or national level, standardised functional focus and length of experience; and for stakeholders – city or national level, type of institution, professional profile and length of experience. Exact job titles, organisation names and other potentially identifying characteristics were not included in quotation labels. Where several participants had the same generalised label, a sequential number was added in parentheses.

3.9. Methodological limitations

The study has several methodological limitations that should be considered when interpreting the findings. The qualitative design and purposive recruitment do not provide statistical representativeness: the aim was not to estimate the prevalence of particular views or practices among all MSM, TGW, service providers or stakeholders, but to examine different types of experience, perceptions, expectations and barriers related to the potential introduction of Doxy-PEP.

The sample of potential users was deliberately limited to MSM and TGW who were already engaged in HIV prevention or treatment pathways: they were using PrEP, receiving ART or planning to initiate PrEP within one month of the interview. This approach reflected the likely model for introducing Doxy-PEP, but it also means that the study did not include people outside these pathways, whose access barriers, trust in services and views on Doxy-PEP may differ.

Access to some groups varied across study cities during fieldwork: in Lviv, only seven of the required ten eligible TGW could be identified. The shortfall was covered by recruiting additional participants in Kyiv and Odesa, allowing the overall target of 30 interviews to be reached. A similar approach was used for the CLO category, where a small shortfall in one city was compensated for by recruiting an additional national-level representative.

Some findings are based on participants' self-reports of sexual behaviour, STI history, use of PrEP, ART or antibiotics, and informal prevention practices. The study did not involve prescribing the medication, clinical follow-up or assessment of the actual outcomes of Doxy-PEP use. The findings therefore cannot be used to draw conclusions about its real-world effectiveness, safety, uptake or behavioural changes following implementation.

3.10. Study period

The data collection was conducted from February 10 until April 4, 2026.

3.11. Acknowledgements

The authors sincerely thank all study participants who shared their personal experiences, professional perspectives and reflections on the potential introduction of Doxy-PEP in Ukraine. Their openness in discussing sexual health, access to services, stigma, STI prevention and antibiotic use formed the basis of this analysis.

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The authors are solely responsible for the content of this report, the interpretation of the findings, and its conclusions and recommendations.

4 RESULTS

4.1. Participant characteristics

The study brought together the perspectives of potential Doxy-PEP users, service providers, CLOs and stakeholders involved in HIV, STI or AMR policy, programmes or expert work. This sample composition allowed Doxy-PEP to be considered both as a potential prevention option for people at increased risk of bacterial STIs and as an intervention that could be incorporated into existing pathways for PrEP, ART, STI diagnosis, NGO navigation, clinical counselling and system-level regulation.

The potential-user sample included 60 participants – 30 MSM and 30 TGW from Kyiv, Lviv and Odesa *(Table3)*. The MSM sample was evenly distributed across the three cities. A larger proportion of TGW were recruited in Kyiv and Odesa, reflecting the availability of recruitment channels, the concentration of relevant services and the difficulties involved in reaching some parts of trans communities in different local settings. Participants were predominantly young or middle-aged: the median age was 29.5 years, and TGW were generally younger than MSM. One quarter had experienced displacement since 24 February 2022, meaning that discussions of sexual health also took place against a background of relocation, disruption of established healthcare pathways and the search for new friendly services.

The potential-user sample was deliberately drawn from populations for whom Doxy-PEP may be clinically and programmatically relevant. All participants had experience of HIV treatment or prevention: some were living with HIV and receiving ART, half were already using PrEP, and a further third planned to initiate PrEP in the near future. This provided an important context for discussing Doxy-PEP, as participants understood the new post-exposure prevention approach through their existing experience of taking medication, testing, counselling and engagement with HIV services.

Participants' sexual and clinical profiles confirmed the relevance of the sample for assessing Doxy-PEP acceptability. One quarter of potential users reported a confirmed or self-reported bacterial STI during the previous 12 months, and some reported recurrent infections, most commonly gonorrhoea. Almost half had had ten or more male partners during the previous year, more than half had experience of group sex, half had experience of chemsex, and more than one third had attended sex parties. These characteristics frequently overlapped, creating recurrent or higher-risk contexts in which post-exposure prevention of bacterial STIs may have practical value.

The profiles of MSM and TGW shared several features but also reflected different contexts of risk and access to services. Both groups reported similar levels of group sex, chemsex and larger numbers of partners, while TGW were more likely to report providing sexual services for payment. Trans-specific healthcare pathways formed an important additional context for TGW: more than half had used hormone medication for gender-affirming therapy or body feminisation at some point, and one third had undergone medical procedures for body modification. The subsequent analysis of TGW responses therefore needs to consider medication compatibility, access to trans-competent healthcare providers, the safety of healthcare pathways, stigma and trust in professionals alongside STI risk and experience of PrEP or ART.

Table 3. Characteristics of MSM and TGW respondents who met the eligibility criteria for Doxy-PEP, n (%)

Characteristics	MSM (N=30)	TGW (N=30)	Total (N=60)
City of residence			
Kyiv	10 (33%)	12 (40%)	22 (37%)
Lviv	10 (33%)	7 (23%)	17 (28%)
Odesa	10 (33%)	11 (37%)	21 (35%)
Age, median (IQR); range	31.5 (26.5–35.8); 21–50	27 (24–35); 19–44	29.5 (24–35); 19–50
Experience of displacement since 24 February 2022			
Local residents / did not change their place of residence	22 (73%)	23 (77%)	45 (75%)
Internally displaced persons / moved from a different settlement	8 (27%)	7 (23%)	15 (25%)
Trans-specific healthcare experience			
Ever used hormone medication for gender-affirming therapy / body feminisation	-	17 (57%)	-
Ever undergone medical procedures for body modification	-	10 (33%)	-
Experience of HIV treatment or prevention			
Living with HIV *(diagnosed with HIV infection)*	7 (23%)	3 (10%)	10 (17%)
Tested for HIV within the previous 3 months and using PrEP at the time of the study	13 (43%)	17 (57%)	30 (50%)
Tested for HIV within the previous 3 months and planning to initiate PrEP within the next 30 days	10 (33%)	10 (33%)	20 (33%)
Year of HIV diagnosis among participants living with HIV			
2021 or earlier	5 (17%)	3 (10%)	8 (13%)
2022 or later	2 (7%)	-	2 (3%)
Year of PrEP initiation among current users			
2021 or earlier	1 (3%)	-	1 (2%)
2022 or later	12 (40%)	17 (57%)	29 (48%)
Ever diagnosed with a bacterial STI: syphilis, gonorrhoea or chlamydia			
Syphilis at any point in life	8 (27%)	2 (7%)	10 (17%)
Gonorrhoea at any point in life	9 (30%)	2 (7%)	11 (18%)
Chlamydia at any point in life	1 (3%)	3 (10%)	4 (7%)
Diagnosed with a bacterial STI *(syphilis, chlamydia or gonorrhoea)* during the previous 12 months			
Syphilis during the previous 12 months	5 (17%)	1 (3%)	6 (10%)
Gonorrhoea during the previous 12 months	5 (17%)	2 (7%)	7 (12%)
Chlamydia during the previous 12 months	1 (3%)	2 (7%)	3 (5%)

Characteristics	MSM (N=30)	TGW (N=30)	Total (N=60)
Additional STI risk / sexual behaviour criteria			
Confirmed or self-reported bacterial STI *(syphilis, chlamydia or gonorrhoea)* during the previous 12 months	10 (33%)	5 (17%)	15 (25%)
Recurrent bacterial STI *(syphilis, gonorrhoea or chlamydia)* during the previous 12 months	3 (10%)	1 (3%)	4 (7%)
≥10 male partners during the previous 12 months	14 (47%)	14 (47%)	28 (47%)
Experience of group sex with men during the previous 12 months	16 (53%)	16 (53%)	32 (53%)
Experience of chemsex during the previous 12 months	15 (50%)	15 (50%)	30 (50%)
Provided sexual services for payment during the previous 12 months	3 (10%)	11 (37%)	14 (23%)
Attended sex parties with men during the previous 12 months	15 (50%)	8 (27%)	23 (38%)
Number of unique male partners during the previous 12 months, median (IQR); range	8 (5–10); 1–100	10.5 (10–24); 10–200	8 (4–10); 1–200
Number of group sex episodes with men during the previous 12 months, median (IQR); range	2,5 (2–4); 1–20	3 (2–3); 1–10	3 (2–4); 1–20
Number of chemsex episodes during the previous 12 months, median (IQR); range	3 (1–8); 1–20	3 (2–7); 1–100	3 (1–9); 1–100
Number of episodes of providing sexual services during the previous 12 months, median (IQR); range	30; 1–150	5 (2–45); 1–200	7.5 (1–48); 1–200
Number of sex parties with men attended during the previous 12 months, median (IQR); range	3 (2–4); 1–7	3 (2–4); 1–5	3 (2–4); 1–7

For frequency measures, the median, interquartile range (IQR) and range are presented among participants who reported the relevant experience during the previous 12 months. STI risk / sexual behaviour categories are not mutually exclusive.

The sample of service providers, CLO representatives and stakeholders included 70 respondents: 18 NGO professionals, 18 healthcare providers, 12 CLO representatives and 22 stakeholders *(Table 4)*. It covered the local level in Kyiv, Lviv and Odesa, where access to Doxy-PEP could potentially be delivered, and the national level, where policies, standards, programmes and expert positions are developed.

Most NGO professionals were directly involved in client-facing work *(Table 5)* – as social workers, case managers, peer counsellors, medical or social counsellors, coordinators, or managers of local units. This group was important for examining Doxy-PEP from the perspective of the first point of service contact: clients may approach these professionals after higher-risk sex when they need rapid navigation or support through an NGO pathway they already know. Healthcare providers – infectious disease specialists, dermatovenereologists and family physicians, predominantly from public or municipal facilities – represented the clinical component of a potential Doxy-PEP pathway. Most were involved in ART or PrEP delivery, HIV or STI testing, and behavioural or psychosocial counselling. Their experience of working with MSM and TGW ranged from a few patients per month to several hundred, allowing the study to capture both specialised and more individualised clinical perspectives. CLO representatives worked across HIV/STI prevention, access to services, LGBT community health, psychosocial support and communication campaigns, adding perspectives on trust, confidentiality, the risk of being labelled and trans-specific safety. Stakeholders – representatives of government, international, academic, professional and civil society institutions involved in HIV, STI or AMR policy development, programme management, monitoring and evaluation – provided a basis for examining the regulatory, programmatic, financial and system-level feasibility of Doxy-PEP.

Table 4. General characteristics of service-provider and stakeholder respondents, n (%)

Characteristics	NGO professionals (N=18)	Healthcare providers (N=18)	CLO representatives (N=12)	Stakeholders (N=22)
Region of work				
Kyiv	6	7	2	4
Lviv	6	5	1	4
Odesa	6	6	2	4
National level	–	–	7	10
Gender				
Men, including transgender men	10	3	10	5
Women, including transgender women	8	15	2	17
Age, median (IQR); range	38.5 (34–52); 21–59	47 (45–55); 26–66	40 (33–46); 26–54	46.5 (37–50); 25–59
Relevant professional experience, years, median (IQR); range	8.5 (5–9); 1–20	18.5 (15–22); 2–40	6 (5–20); 2–27	15.5 (3–20); 1–32
Focus of work with communities				
MSM only	1	3	–	–
TGW only	2	–	–	–
MSM and TGW	15	15	12	–

Relevant professional experience / engagement was defined according to the role of each group: for NGO professionals and healthcare providers – as experience in HIV/STI prevention, diagnosis or treatment; for CLO representatives – as experience in public health, HIV/STI prevention or the protection of the rights of MSM and TGW; and for stakeholders – as experience in HIV, STIs or AMR.

Table 5. Specific characteristics of respondents by professional group, n (%)

Participant group	Characteristics	Category	n (%)
NGO professionals (N=18)	Current functions within the NGO	Direct client-facing work: navigation, case management, counselling, testing, PrEP/ART support, psychosocial support, etc.	16 (89%)
		Management or coordination of projects involving MSM and/or TGW	5 (28%)
	Types of services in which NGO professionals were involved	PrEP support: initiation, adherence support, navigation	13 (72%)
		ART support: initiation, adherence support, navigation	12 (67%)
		HIV testing, including self-testing	15 (83%)
		STI testing, referral or treatment support	15 (83%)
		Psychosocial support	11 (61%)
		Provision of prevention materials: condoms, lubricants, etc.	14 (78%)
		Legal / human rights support	3 (17%)
Healthcare providers (N=18)	Medical specialty	Infectious disease specialist	11 (61%)
		Dermatovenereologist	4 (22%)
		Family physician	3 (17%)
	Type of HCF	Public / municipal	14 (78%)
		Private	4 (22%)
	Current clinical functions	ART provision / counselling for people living with HIV and/or PrEP provision	16 (89%)
		HIV or STI testing	16 (89%)
		STI treatment	6 (33%)
		Psychosocial or behavioural counselling	12 (67%)
CLO representatives (N=12)	Areas of CLO activity	Advocacy for the rights of MSM / TGW	2 (17%)
		Access to healthcare and prevention services	7 (58%)
		HIV/STI prevention	8 (67%)
		Support for LGBT community health	7 (58%)
		Psychosocial support / peer-support groups	7 (58%)
		Information, education and communication campaigns	6 (50%)
Stakeholders (N=22)	Type of institution	Government	14 (64%)
		International / intergovernmental	2 (9%)
		Academic / professional	2 (9%)
		Civil society / charitable	4 (18%)
	Professional profile of stakeholders	Programmatic / managerial: coordination, policy, financing	15 (68%)
		Analytical / research: monitoring, evaluation, analysis	7 (32%)
	Main functions within the institution	Decision-making or participation in policymaking	12 (55%)
		Expert or advisory work in HIV, STIs or AMR	14 (64%)
		Programme / project coordination or management	12 (55%)
		Analytical / research work	12 (55%)

Percentages were calculated using the number of participants in the relevant group as the denominator. For characteristics where multiple responses could be selected, categories are not mutually exclusive and percentages may therefore total more than 100%.

Overall, the sample brought together people with direct experience of STI risk; professionals supporting clients through HIV and STI services; healthcare providers able to assess the clinical boundaries of Doxy-PEP; CLO representatives working with community trust and legitimacy; and stakeholders familiar with the system-level conditions required for implementation. This composition reflects the study's analytical focus on the acceptability and feasibility of Doxy-PEP as an intervention situated at the intersection of user experience, clinical practice and system capacity.

4.2. Potential users' perspectives on Doxy-PEP

4.2.1. Sexual health practices and access to services

MSM and TGW understood the potential use of Doxy-PEP through their existing experience of managing sexual health, in which HIV prevention was considerably more familiar and structured than the prevention of bacterial STIs. Some participants had established self-protection practices, including condom use, PrEP, regular HIV testing or self-testing, consultations with a doctor or social worker, laboratory screening and personal rules for responding after higher-risk sexual contacts. For others, prevention remained situational and was prompted by a specific concern – a new or unfamiliar partner, condomless sex, symptoms, a suspected STI, a party, chemsex or a period of greater sexual activity. Doxy-PEP would therefore be introduced into an environment where biomedical HIV prevention is already familiar, but consistency of use, knowledge and access to STI diagnostics vary substantially between individuals.

For some MSM, prevention was a way to maintain control over their sexual lives – knowing their status, staying in contact with a social worker or friendly doctor, knowing where to seek help after a potential exposure, and not waiting for symptoms to appear. These participants discussed PrEP, condoms, routine testing, vaccination against hepatitis A and B or human papillomavirus, general health check-ups, laboratory screening and testing together with a partner. This organised approach was not universal, however: some MSM were tested when they "remembered", when friends were going and invited them along, when it was convenient to visit an NGO, or when a specific reason for concern arose.

> *"I test for HIV, I think, about every three months, maybe every two. Sometimes it's more situational, when I have a very active period and realise I need to go and get checked. When nothing's happening, I understand that I don't need to go. Sometimes I don't have any sexual contact at all for two months."*
>
> *MSM, on PrEP, no target STIs, aged 31*

For TGW, sexual health was more often embedded in broader medical and social navigation. Participants discussed hormone therapy, finding an endocrinologist, psychiatrist or family physician, changing or losing a doctor, self-prescribing hormones, and obtaining advice through acquaintances or NGOs. Some had stable and trusted healthcare providers, while others described the process as a "quest" to find a doctor who would not judge them, ask unnecessary questions or treat being transgender as a problem. For TGW, STI testing, PrEP and potential future access to Doxy-PEP therefore cannot be separated from trust in the doctor, compatibility with hormone therapy, fear of discrimination and the service's ability to understand a trans-specific context.

> *"After moving from Kherson, the first thing we looked for was an endocrinologist, because I was already on hormone therapy and it was going well. Then a psychotherapist, a psychologist. It was really difficult to find a decent family doctor who'd be tolerant and give the referrals you ask for. Of course, I've now found specialists through recommendations from people I trust, but it still feels like a lottery."*
>
> *TGW, Odesa, on PrEP, no target STIs, aged 23*

"I was advised to contact a community organisation. Things got a little better because they immediately referred me to a decent doctor. Before that, it was genuinely a quest. I had completely ridiculous online consultations where the person running the consultation didn't understand the subject at all. Before that, and I know you probably shouldn't do this, I was prescribing the medication entirely for myself. Sometimes it worked, and sometimes it had some rather unpleasant consequences for my health."

TGW, Odesa, planning to initiate PrEP, no target STIs, aged 22

In the accounts of both MSM and TGW, PrEP was understood as both a medication and a means of managing risk. For some, it had become a daily habit supported by an alarm, pill organiser, reminder from a doctor or regular visit to collect medication. Others preferred an "on-demand" regimen linked to anticipated sexual contact, which did not require a permanent daily routine. Some participants described injectable PrEP as convenient precisely because it removed the need to think about tablets every day. Across these different approaches, PrEP created a sense of control over HIV risk, but did not always draw attention to bacterial STIs – most participants did not recall STIs or relevant preventive measures being discussed systematically during medical appointments.

"I've been using PrEP since January. Because of that, of course, I feel less need to use condoms. There are many risks apart from HIV, but since starting PrEP I use condoms a little less often. That's probably not very good."

TGW, Odesa, on PrEP, no target STIs, aged 23

*"I: When you receive PrEP, does the doctor talk to you about STIs or possible prevention options?
R: No, not about that, because as far as I understand, it isn't included in the programme."*

MSM, Kyiv, on PrEP, syphilis and gonorrhoea, aged 36

People living with HIV often described ART as part of everyday life: taking tablets daily, attending routine appointments, monitoring viral load and receiving medication through an AIDS centre, NGO or delivery service. After years of treatment, ART had become a routine that some respondents barely regarded as problematic – and this routine did not always include discussion of bacterial STIs. A stable HIV care pathway therefore does not necessarily provide an integrated sexual healthcare pathway when contact with the system focuses primarily on treatment or PrEP.

Participants rarely assessed STI risk through the number of partners alone. They more often described specific situations in which control over the safety of a sexual contact was reduced. These included sex with a new or unfamiliar partner, group sex, sex parties, condomless sex, including oral sex, sexual contact under the influence of alcohol or psychoactive substances, incomplete trust in a partner, or a partner's failure to follow an agreement about protection. In some interviews, risk was associated with sex for payment, which some MSM and TGW described as a means of survival or additional income during the war, following job loss or amid limited financial resources. In these accounts, STI risk arose from an unequal negotiating position: a client might insist on condomless sex, offer more money or violate prior agreements, while the person agreed because of financial need. STI risk was therefore more often presented as a feature of particular scenarios than as a characteristic of the individual in general.

"Now, during the war, there are many people, especially military personnel… There've always been a lot of STIs. Especially now. Partners change frequently. I don't know who my partner was with before me. So, of course, the risk is high."

MSM, Kyiv, on ART, syphilis, aged 41

"I think the biggest factor is substances. Because sometimes you can't say 'no', and it can become a little out of control."

MSM, on PrEP, no target STIs, aged 31

The wartime context shaped whether and how participants could maintain their sexual health. For MSM, particularly in Odesa, mobilisation enforcement and fear of Territorial Recruitment and Social Support Centres (TRSSCs) directly affected mobility, employment, social life and willingness to travel to a service, doctor or laboratory. Some men worked from home more often, went outside less, postponed testing or chose routes they considered less risky. For TGW, the wartime context was often even more complicated because fear of mobilisation intersected with a male gender marker in identity documents, an incomplete legal transition, the risk of misgendering and the need to explain themselves in medical or administrative settings. Under these conditions, access to testing, PrEP, ART, hormones and STI treatment depended both on whether a service existed and on the physical safety of reaching it and the likelihood of receiving care without stigma.

"When the full-scale war started, I looked for a new doctor. I wanted somewhere closer for testing and collecting ART, so I wouldn't have to travel far. And now everything's easy. I found a wonderful doctor. He can send it by post. When I need it, I call, and they deliver it either by taxi or by post."

MSM, Kyiv, on ART, syphilis, aged 41

"I look for everything through online platforms because offline is a little difficult. Many doctors aren't ready to hear about transgender people, and that makes me uncomfortable. I also spend more time at home now because there can be problems with the TRSSC, so at the moment mobilisation affects things even more. It's very difficult to get to a doctor. Going by taxi is quite expensive."

TGW, Kyiv, on PrEP, gonorrhoea, aged 29

Friendly services, NGOs, CLOs and word of mouth played a central role in shaping access pathways. Participants frequently reached testing, PrEP, a friendly doctor or a trans-competent professional through friends, partners, social workers, community events or online chats. This form of access was particularly important because mainstream healthcare was often perceived as unpredictable, stigmatising or insufficiently competent. For some MSM, knowing a specific organisation or social worker was enough. For TGW, it was important that a service was not simply "friendly", but had been specifically verified by other transgender people – whether the doctor understood hormone therapy, possible differences between identity documents and appearance, the importance of using the correct pronouns, and the risks associated with disclosure.

"I don't know what it's like when you're receiving treatment, because if someone's in treatment, they have no choice but to go there [to a public hospital]. But if it's prevention… If the experience there is bad, I'll probably think twice or skip it. I don't want to deal with bad doctors and all the rest of it again and end up stressed."

MSM, Kyiv, on PrEP, no target STIs, aged 33

"There's an organisation in Lviv that provides free testing specifically for people from the LGBT community and transgender people. Everything there is always very comfortable and calm. I have almost no experience of testing anywhere else, so I don't even know whether it can be done in ordinary clinics."

TGW, Lviv, planning to initiate PrEP, no target STIs, aged 27 (1)

Regular screening most often covered HIV, syphilis and hepatitis – infections largely incorporated into rapid testing, NGO services, PrEP pathways or ART support. Some MSM and TGW were tested every two–three months – particularly when testing was required to receive PrEP, provided free of charge by an NGO or socially reinforced through reminders from a doctor, visits to collect medication, or testing "for company" with friends or a partner. Even participants living with HIV responded positively when offered rapid testing, as it provided an opportunity to meet and maintain contact with a social worker.

"I get tested about once every three months. I know some guys who go, and sometimes we all go together. When they suggest it, I go with them, and when I go, they come too."

MSM, Odesa, planning to initiate PrEP, no target STIs, aged 50

"The social workers remind me about testing. They all have their own indicators to meet. And of course, you need to come in to collect contraception supplies. There's always something going on there: different surveys, humanitarian aid."

MSM, Kyiv, on ART, syphilis, aged 41

"It all started in 2016 when I found out about my status, and a few months later I started ART. But I still get tested every three months because my social worker lives nearby. I take those rapid tests, even for HIV, and he says, 'Come on, let's do one.' Sometimes it even shows a negative result. I do it for fun. And anyway, I go there to talk to someone I know and find out what's new in their world."

MSM, Lviv, on ART, gonorrhoea, aged 32

Testing for bacterial STIs other than syphilis was less consistent. Gonorrhoea, chlamydia and other infections more often required a separate pathway – a swab, venous blood sample, paid test or visit to a private laboratory. Some participants underwent this screening every six months or once a year, but it remained largely linked to symptoms, a particular higher-risk contact or a doctor's referral. Regular testing for HIV or syphilis therefore did not amount to systematic screening for the bacterial STIs that Doxy-PEP is intended to prevent – a substantial gap identified in the data as part of the context in which potential Doxy-PEP use must be assessed.

"I have a swab every six months or once a year, depending on whether I can manage it. I didn't pay much attention to my health before and neglected many things. I had a negative experience in a relationship and contracted trichomoniasis. After that, I started to understand that you can't really trust anyone, so now I get checked an extra time to make sure everything's okay."

MSM, Lviv, planning to initiate PrEP, no target STIs, aged 29

"After a contact I wasn't sure about, I'd have a syphilis test about 3–4 weeks later. There's a complication, though: I was treated for syphilis in 2005, so ordinary rapid tests won't give me a useful result. They'll still show that antibodies are present. I therefore need a full venous blood test, which is more difficult and more expensive. That's a real barrier for me."

MSM, Odesa, on ART, syphilis and gonorrhoea, aged 49

Barriers to broader STI diagnostics included cost, logistics and stigma. The price of tests, lack of free screening for the full range of bacterial infections, the need to travel to a laboratory, queues, fear of the TRSSC and the requirement for an in-person consultation all made testing less accessible. For TGW, this was compounded by the need to find a service where they would not face inappropriate treatment or have to explain their gender identity. Some therefore preferred rapid HIV tests or self-testing, although these formats did not meet the need for laboratory diagnosis of gonorrhoea and chlamydia.

"I went to the dermatovenereology clinic on [street name] because I wanted to have some tests. A woman of about sixty came out into the corridor, opened the door and said, 'Who here has syphilis? Come in.' How can anyone work like that? You're already stressed because you have an infection, and then they expose you in front of everyone."

MSM, Kyiv, on PrEP, no target STIs, aged 33

"I didn't get tested… It wasn't even because I was afraid of the result. When you have sex without a condom, you obviously understand that there are risks. What stopped me from going to any healthcare facility was more the psychological pressure from doctors and being treated like I was worthless."

TGW, Odesa, planning to initiate PrEP, no target STIs, aged 22

"I was never diagnosed, but I had some mild suspicions. I didn't really have time to seek help, and after a short while it started to clear up. I treated myself – there's ChatGPT, there's the internet. I know that's far from the best option, but if it had continued or become worse, I definitely would've gone to a doctor."

TGW, Lviv, on PrEP, no target STIs, aged 37

Participants evaluated STI treatment in terms of clinical effectiveness, time, cost and the quality of their interaction with the healthcare system. Those with experience of syphilis or gonorrhoea recognised the need for antibiotics, but the treatment pathway was not always straightforward. Public or specialist facilities were considered acceptable when participants knew the doctor and encountered minimal judgement, while private clinics were chosen for speed and comfort, although they were expensive and did not always guarantee quality. Some participants described self-treatment or partially supervised treatment in which laboratory confirmation or an online consultation was combined with advice from acquaintances or self-administration of medication. These practices generally arose not from distrust of medicine itself, but in response to logistical barriers, mobilisation risks, stigma, cost or previous negative encounters with the healthcare system.

"The first time I had gonorrhoea, I went to the dermatovenereology clinic on [street name], and the way they treated me was pretty unpleasant. 'Damn, you came just as my shift was ending. It would've been better if you hadn't come. What am I supposed to do with you now?' And I was sitting there, nineteen years old, with no idea what I was supposed to do. The doctor started explaining that I could be treated according to the protocol or outside the protocol – meaning I could go to the pharmacy myself, buy ceftriaxone, and she'd inject it. Then at home I'd take whatever else she prescribed. It was the same situation on [street name]: they passed me from one doctor to another, and each time I had to explain my problem all over again."

MSM, Kyiv, on PrEP, gonorrhoea, aged 21

"The treatment for syphilis itself, excuse me, is pure Soviet-era medicine. I think it was 18 days of injections every day. Medicine has advanced so much, but here you still have almost three weeks of injections every day, twice a day. It's a huge hassle. It takes so much time, and if you work, you have to fit everything around your job. I was treated in a public clinic – and they didn't care whether you worked or not – 'You're ill, go and get treated, you're the one who needs it.' A private clinic adapts more to you because you're paying them. Although the public clinic wasn't cheap either: antibiotics, injections, constant blood tests. And everything was so corrupt! It made me furious! If you wanted to have your blood taken faster because you had to get to work, you had to slip 200 hryvnias into the nurse's pocket."

MSM, Lviv, planning to initiate PrEP, syphilis, aged 28

"I'm taking antibiotics now because I was diagnosed with syphilis a month ago. But I'm taking them on my own and didn't go to the doctors, even though I was referred… I'm afraid… There are two injections, and they're very strong. Retarpen. I know people who were treated like that, literally with two injections, and afterwards nothing was detected. I've only had one dose so far and need the second injection… but it's so painful that I don't know how I'll manage another one. If it doesn't work, I'll have the tests and go to a private clinic. But to receive treatment in a private clinic, to be admitted as an inpatient… I don't have that kind of money."

MSM, Lviv, planning to initiate PrEP, syphilis, aged 26

"It happened after a group encounter, around ten people, and everyone else was on drugs. I was the only one who hadn't taken anything. When it was all over and we woke up towards the evening, one guy said, 'Do you know that the person we had sex with is ill?' I panicked immediately, called a taxi and went to the clinic. They explained that sexually transmitted infections have what they call a window period, so gonorrhoea, for example, doesn't appear that quickly. I didn't know whether I'd caught anything, but I didn't want to wait for long, so I told the doctor, 'Let's start treatment so that if there's something there, we can reduce the risk.' We started treatment, and then two weeks later the first symptoms appeared."

MSM, Odesa, planning to initiate PrEP, syphilis and gonorrhoea, aged 39

"I had gonorrhoea twice in one year. When I started having discharge, I went to a laboratory, had the tests and contacted a doctor through the online platform [platform name]. It started about two weeks later because I'd been having quite a lot of sexual contact at the time… There were cases when someone penetrated me without a condom and without my consent. I had a swab at the laboratory, gonorrhoea was confirmed, and I started treatment. I injected myself after getting information from people I knew about how to treat it. I consulted the doctor remotely because transport and the TRSSC made it difficult to travel there."

TGW, Kyiv, on PrEP, gonorrhoea, aged 29

Attitudes towards antibiotics varied and formed an important part of the context in which Doxy-PEP would be introduced. Some participants took antibiotics only when prescribed by a doctor and explicitly stated that preventive use raised more concerns than treatment of a confirmed infection. Others had experience of self-prescribing through pharmacists they knew or based on previous experience. Adverse effects – stomach discomfort, diarrhoea, nausea and effects on the microbiota – did not necessarily lead participants to reject antibiotics, but encouraged caution. For some TGW, these concerns were accompanied by questions about compatibility with hormone therapy, antidepressants, PrEP, ART or other medications. Doxy-PEP would therefore enter an existing set of beliefs about antibiotics, adverse effects and trust in medical explanations, all of which are likely to shape how respondents assess a new preventive regimen.

"Of course, it's better to consult a doctor, but sometimes doctors prescribe all sorts of things… I have a friend who works in a pharmacy, and if I can't get to a doctor, I can ask her. But generally, I'm not big on antibiotics. You shouldn't play around with them; they affect the liver quite badly. But when you need them, you need them. If it's ordinary bronchitis without complications, I'll still think about it, but if it's some sexually transmitted infection, then of course I take an antibiotic."

MSM, Kyiv, on ART, syphilis, aged 41

"Antibiotic use should be minimised. It's stupid to take antibiotics when your temperature is 37°C, for example. But when there's an urgent need, then of course I view them positively because they're medication. When their use is controlled and they're prescribed by a doctor, it makes sense. But when someone prescribes them for themselves, that's unacceptable in my view."

TGW, Odesa, planning to initiate PrEP, no target STIs, aged 22

A consistent distinction emerged between HIV as a threat that many participants had learned to control and bacterial STIs as a less clearly defined risk. PrEP, rapid tests, ART and regular HIV monitoring provided a relatively clear framework for managing HIV, while syphilis, gonorrhoea and chlamydia remained less structured for some participants. People could fear these infections without being tested regularly; regard them as curable without knowing that they may be asymptomatic; or associate them with symptoms while still not seeking medical care. This imbalance between a clearly defined HIV pathway and a weaker STI pathway provides the context in which perceptions of Doxy-PEP will develop. It also demonstrates that potential use of the medication cannot be separated from testing, counselling and a clear distinction between prevention and treatment.

The context for potentially introducing Doxy-PEP among MSM and TGW is therefore shaped by more than the level of sexual risk. It also depends on how people currently manage their sexual health in everyday life: through established or situational pathways, through friendly services or independently, and with trust in the healthcare system or against a background of stigma. These different starting points mean that perceptions of Doxy-PEP will depend on how well it fits into existing practices and whether the pathway for obtaining it is understandable, safe and supported by clear medical guidance.

4.2.2. Awareness, initial reactions and understanding

Discussions of Doxy-PEP rarely began with participants having a fully formed understanding of the approach. Some respondents heard the term for the first time during the study but quickly tried to make sense of it through concepts they already knew: PrEP, HIV PEP, antibiotics, STI treatment, prevention after a higher-risk contact or their own experience of taking doxycycline. Others had already encountered fragments of information through conversations within the community, contact with NGOs, medical consultations or social media. Awareness of Doxy-PEP was therefore uneven, but the idea of taking medication after a higher-risk contact was not entirely unfamiliar to most respondents.

Three broad levels of familiarity emerged. Some participants knew neither the name nor the regimen, but after a brief explanation understood the general principle: following sexual contact perceived as risky, a person could take medication to reduce the likelihood of acquiring a bacterial STI. Others had heard of doxycycline as an "antibiotic after sex" or a form of STI prevention, but were uncertain about the dose, timing, frequency or limits of use. A smaller number already had practical or partially informed experience: some had received information from a friendly service, some kept the medication at home, and some had taken it after particular sexual contacts. These accounts suggest that Doxy-PEP already has a limited presence within service and community settings, despite the absence of a single national protocol.

"I heard about doxycycline from friends, and doctors were also discussing something among themselves. A pharmacist I know prescribed it for himself. When I asked what for, he said, 'Just as an extra precaution.' My doctor said it was popular in Europe, but the protocol was unclear. What I remembered was that some countries had already introduced it, while others were cautious because of resistance, when the medication might stop working."

MSM, Kyiv, on PrEP, no target STIs, aged 33

"One of my friends was taking it regularly. He was the one who told me about it. I only took it once, as prevention. For me, it was preventive treatment for syphilis."

MSM, on PrEP, no target STIs, aged 31

"A counsellor at the organisation where I get tested told me about this antibiotic. He said there's now a pill you can take when you have doubts after sex, when you're not sure that the person is okay or doesn't have an infection. You can take this antibiotic, and it'll reduce your risk of getting infected."

MSM, Lviv, planning to initiate PrEP, syphilis, aged 28

"A doctor at [clinic name] told me about it when I was having tests there. I found out that this option existed and had a separate consultation, just for myself. I came home, looked it up online and saw that it was considered promising but wasn't yet recommended, so I decided against it."

TGW, Odesa, on PrEP, no target STIs, aged 44

"They recommended it to me at [NGO name]. I came in the day after sex and took two pills. Then I came back and did it once again."

TGW, Odesa, on PrEP, chlamydia, aged 26

The source of information partly shaped how credible Doxy-PEP appeared. Respondents might hear about it from friends, partners, social workers or doctors, or come across it on social media, but these sources did not carry equal weight. Information from a familiar social worker or friendly doctor was viewed differently from stories shared by acquaintances or rumours. For some participants, the source itself was a prerequisite for initial trust: a new prevention approach seemed more credible when it was discussed by a professional or service with which they already had a safe and positive relationship.

"Of course I have doxycycline. When I have some questionable sexual contacts, I take two pills. I don't know whether that's correct because there's very little information. Someone I know told me about doxycycline, and I started reading about it online. People take it in Germany, and it's popular there. I asked my doctor, and he said, 'Well, you can take it, but I don't know whether it helps. I suppose it's better to take it.' So I take it after sex."

MSM, Kyiv, on ART, syphilis, aged 41

"I heard about doxycycline from a social worker when I was getting tested, more than a year ago. Two pills after contact within 72 hours. People in the community do the same, and I hear about it from them, but I decided to check with a doctor to make sure the information was reliable. The doctor said it could be used for prevention, but she couldn't recommend it or prescribe it. So it was up to me. Sometimes, when I didn't have any pills, I had to run to a pharmacy. You can't always buy it without a prescription, but most pharmacies still sell it."

TGW, Kyiv, on PrEP, gonorrhoea, aged 29

Previous experience of doxycycline did not necessarily mean that participants understood Doxy-PEP correctly. For some, doxycycline was a familiar antibiotic they had previously taken for acne, inflammation or respiratory conditions; for others, it was associated with STIs or informal use after a higher-risk contact. Familiarity with the medication could increase trust because it was not perceived as new or experimental. At the same time, it could create a misleading sense of simplicity: when someone already knows the name of the antibiotic or keeps it at home, the boundary between evidence-based post-exposure prophylaxis and taking it independently "just in case" becomes less clear.

"I was bitten by a tick once, and they suggested that I take doxycycline as prevention. I took it for a couple of days and that was it, because I'd only bought one blister pack. A woman I know recommended it. She works with cats and dogs and understands something about these things, and she said I could take it."

MSM, Odesa, planning to initiate PrEP, no target STIs, aged 50

"It's reassuring that this isn't some experimental drug that appeared yesterday. It's well known, tested and certified. If it has this effect and can be used this way, then that's wonderful."

TGW, Lviv, on PrEP, no target STIs, aged 37

PrEP was the most prominent frame through which MSM and TGW understood Doxy-PEP. People who already used PrEP daily under a 2-1-1 regimen, or had experience of injectable PrEP, more readily understood the idea of using medication to reduce sexual risk. Doxy-PEP appeared to them as a related but distinct tool: it was not for HIV, was taken after rather than before exposure, and was not intended for continuous use. Familiarity with PrEP did not, however, guarantee correct understanding. Some respondents asked whether Doxy-PEP could be taken before sex for greater protection, whether it was needed after every condomless contact, and how it should be combined with existing HIV prevention.

"What happened with HIV? PrEP didn't exist in my life, I acquired HIV, and then PrEP appeared a few years later. I think this medication could be similar. If I start taking it now, I'll at least have some chance of protecting myself from these infections."

MSM, Lviv, on ART, gonorrhoea, aged 32

HIV PEP also helped some respondents understand the post-exposure principle. A limited window in which action could be taken after higher-risk sex was intuitive to those familiar with HIV PEP or emergency preventive measures such as emergency contraception. The analogy had limits, however: HIV PEP was generally understood as a response to an exceptional event, whereas respondents associated Doxy-PEP with

potentially recurring situations – sex parties, group sex, sex work or several sexual contacts within a short period. The post-exposure logic was therefore easy to understand, but it immediately raised questions about frequency and the limits of safe use.

"If it works like PEP, where you take this pill after sex and can be sure that you won't catch anything, or if the infection was already there and the pill killed it, then that's great."

MSM, Lviv, on ART, gonorrhoea, aged 32

"For some reason, I imagine it the way my female friends described the contraceptives they take. To me, it's a very similar concept: taking something afterwards."

TGW, Lviv, planning to initiate PrEP, no target STIs, aged 27 (2)

Initial reactions to Doxy-PEP were generally open, but quickly shifted towards practical questions. Respondents rarely rejected the approach immediately. Instead, they tried to understand which situations it was intended for and how safely it could be used. Interest emerged particularly quickly when participants imagined condomless sex with an unfamiliar partner, chemsex, group sex or sex parties – contacts that could leave them with lingering uncertainty afterwards. In these accounts, Doxy-PEP was seen as a potentially useful action following an event that could no longer be undone. Interest was, however, almost immediately accompanied by questions about the evidence, safety, dose, timing, frequency of use and compatibility with other medications, particularly among TGW.

For many respondents, the basic understanding of Doxy-PEP could be summarised as "an antibiotic after risky sex". Participants quickly grasped the idea of taking medication to reduce the risk of bacterial STIs and described its action intuitively as "stopping the infection at the beginning" or "preventing the bacteria from developing". This understanding did not always extend to the limits of effectiveness, differences in protection against syphilis, chlamydia and gonorrhoea, the need for testing, the risk of AMR, or the distinction between prevention and treatment. Even participants who had already taken doxycycline after sex most often asked the same practical question: how frequently could the dose be repeated?

"How much of it can you take for prevention? And how often? So you take two pills – how long do they work for? It's not like PrEP, where you take one pill and it keeps working. What if someone has sex all the time? Can you take it every day? There's no information about this at all."

MSM, Kyiv, on ART, syphilis, aged 41

The recommended dose and timing window were interpreted through participants' trust in the person providing the explanation. Some considered a 200 mg dose within 24–72 hours to be reasonable but could not independently assess the evidence behind it, and their willingness to follow the regimen depended on confirmation from a doctor. A window of up to 72 hours seemed practical to some because it allowed time to respond after the contact; others found the idea of taking the medication as soon as possible more convincing. These responses show that even a relatively simple regimen requires explanation – including when the time window begins and what to do if the contact was prolonged, repeated or not fully remembered.

"I don't understand dosages, but if that's the dose needed for it to work, then it must be fine. If a doctor told me and it was written in the instructions, I'd feel confident. If friends told me, I wouldn't take that information seriously because they're not specialists."

MSM, Kyiv, on PrEP, syphilis, aged 35

"The length of the window sounds quite reassuring because people very often start thinking about everything only after it's happened… It's only after the contact that they think about how safe it was. So for me, this approach is quite acceptable."

TGW, Kyiv, on PrEP, no target STIs, aged 35 (2)

Awareness of Doxy-PEP is already emerging among MSM and TGW but remains fragmented. Some potential users first learned about the approach during the interview, others had heard about it through doctors, NGOs or the community, while a smaller group had already taken doxycycline after sex or knew people who had. For most participants, the key issue was not simply knowing that the approach existed, but understanding its boundaries: when it is appropriate, how often it can be used, how it differs from treatment and how it can be combined with other medications.

4.2.3. Perceived benefits and motivations

Respondents most often understood the value of Doxy-PEP through situations in which sexual risk had already occurred and the person needed a clear course of action. In the accounts of MSM and TGW, the medication was not presented as a universal option for every sexual encounter – its purpose was most evident following condomless sex, sex with a new or unfamiliar partner, group sex, a sex party, chemsex, contact under the influence of psychoactive substances, paid sexual services, or a situation in which a partner had violated an agreement about protection. In these circumstances, Doxy-PEP was seen as a way of regaining some control after an event that could no longer be changed.

The post-exposure principle was one of the main reasons for interest in Doxy-PEP. Some respondents described situations in which a condom was not available or they did not want to use one, a partner insisted on condomless sex, the contact occurred spontaneously, or the agreement changed during sex. In these accounts, Doxy-PEP was valuable precisely because it did not require perfect control before sex, but offered an action that could be taken once the risk had already occurred.

"Sometimes you might have some unplanned sexual contact and you can't go home first. But afterwards, when you get home, you can take it. Of course, I think taking something 'after' is more convenient than taking it 'before'."

MSM, on PrEP, no target STIs, aged 31

"Say you had casual sex, or even sex with someone you know, but it was unprotected. Another possibility is that you were so drunk or high that you don't remember whether it was protected or unprotected. Or maybe it was aggressive sex, or something else. For me, taking a pill would also make me feel better psychologically."

MSM, Kyiv, on ART, no target STIs, aged 30

For respondents who had casual sexual contacts, provided sexual services for payment or had less power in negotiating the conditions of sex, particularly TGW, autonomy after exposure was an important advantage. In such situations, safety did not always depend solely on the person's own intentions: a partner or client might refuse to use a condom, remove it, bring other people into the encounter or break a previous agreement. In these accounts, Doxy-PEP appeared to offer an option in which the decision and action after the contact remained with the individual, regardless of what had happened during the encounter.

"In my view, this prevention should be available, but not for situations like, 'I went out, had some fun, and now I need prevention.' It should be for when something happens, some kind of emergency: the condom broke, there was stealthing and the person didn't know that their partner had removed the condom without their consent. Or when someone spiked your drink and you don't remember anything, which could be considered rape."

MSM, Kyiv, on PrEP, chlamydia, aged 29

"A condom doesn't always protect you. But if we're talking about unprotected sex, without a condom, nobody asks you for a medical certificate before having sex. So the risk of infection is very high. Especially if it's a stranger and casual sex. So protection is your responsibility. You can't blame someone else if you get infected, because you were the one who didn't think about it. Taking something for protection is very logical."

MSM, Kyiv, on ART, no target STIs, aged 30

"I have sexual partners with whom I don't use condoms. They don't like condoms because the sensation isn't the same. They persuade me and talk me into it. And if I get tested and find out I have some infection, I'll immediately say goodbye to that partner and find another one."

TGW, Odesa, on PrEP, chlamydia, aged 26

"I like that it doesn't involve the person you're having sex with at all. You can do it yourself, after the contact, and it's entirely your responsibility. The other person isn't involved. Because unlike with a condom, you don't need both people to agree."

TGW, Lviv, planning to initiate PrEP, no target STIs, aged 27 (1)

For some participants, Doxy-PEP was attractive as an addition to familiar biomedical prevention. PrEP users understood that HIV risk could be managed with medication, but that PrEP did not protect against syphilis, gonorrhoea or chlamydia. Doxy-PEP was therefore viewed as a tool addressing another part of sexual risk. The logic was similar for people receiving ART, although their starting point differed: HIV was already controlled through treatment, but this did not remove the risk of bacterial STIs. Both groups perceived an imbalance between the HIV pathway – with regular appointments, testing and contact with NGOs – and the weaker STI pathway, in which bacterial infections were more often associated with paid tests, symptoms or searching for a friendly professional after a problem had already emerged. Doxy-PEP was appealing as a way of taking action rather than remaining passive between a higher-risk contact and possible treatment.

"For me, it looks very positive at the moment because… PrEP protects against HIV, but there's nothing else to protect you from other infections apart from condoms. And sometimes even that might not be enough. So I'd really like to have this option, just in case, after sex, especially if it was something very intense or involved a large number of partners."

MSM, Kyiv, on PrEP, no target STIs, aged 31

Previous experience of STIs increased the perceived practical value of Doxy-PEP. Respondents who had experienced syphilis, gonorrhoea or chlamydia often remembered more than the infection itself; they remembered the entire pathway surrounding it: symptoms, fear, laboratory visits, waiting for results, injections, expenses and conversations with doctors. For these participants, Doxy-PEP was attractive because it might reduce the risk of infection and help them avoid repeating a difficult, expensive or stigmatising treatment pathway.

"I've had syphilis. Syphilis is a real problem, of course. You wait a month to see whether it appears or not, and then you have to treat it, with a million injections… When I remember it… it was just hell. So obviously it's wonderful that there's this kind of syphilis prevention."

MSM, Kyiv, on ART, syphilis, aged 41

"I think the main advantage of Doxy-PEP is that you save a lot of money on treatment. Buying the medication for 200 hryvnias and taking two pills at once is much cheaper than spending months going to hospitals."

TGW, Odesa, on PrEP, chlamydia, aged 26

The psychological value of Doxy-PEP was distinct from its clinical benefit. Some respondents described the period after an uncertain or uncontrolled sexual contact as a time of anxiety, repeatedly going over what had happened and being unsure whether they needed to seek medical care. In these accounts, the medication offered a way to avoid remaining passive after a higher-risk contact – taking action within a defined timing window rather than waiting and worrying. This motivation was particularly evident among participants who tended to analyse a sexual encounter for a long time afterwards.

"Sometimes you start winding yourself up, for example, if there were a lot of partners. Then you get stuck on it: maybe something did happen and maybe I caught something. But this way you just take a pill and feel calmer, sleep better, and then you still get tested so you can sleep even better."

MSM, Kyiv, on PrEP, no target STIs, aged 31

"I'd feel calmer because I'm a bit of an anxious person. Even after the pleasure, there are still all these thoughts and you wonder whether you might've caught something. I'd feel calmer if I took this medication and knew I'd done everything necessary. And if I still ended up in the percentage where it doesn't work and caught something… Well, then I'm the loser."

MSM, Lviv, planning to initiate PrEP, no target STIs, aged 29

"My anxiety is generally quite high, so if something's really worrying me, I immediately try to get rid of that anxiety. I go and get tested, but I know there's no point testing immediately after sex because nothing will show up. But taking some medication, like doxycycline, would already be something."

TGW, Odesa, on PrEP, chlamydia, aged 26

The event-driven format of Doxy-PEP also increased its appeal to people who did not want to add another daily regimen to their existing medication burden. This was particularly evident among people with irregular sexual activity, on-demand PrEP users and TGW whose medication burden could already include hormones, PrEP, ART or antidepressants. In such cases, Doxy-PEP was considered acceptable precisely as an action linked to a particular situation rather than as a new continuous regimen.

"The advantage of Doxy-PEP is that it's easy to use. You don't need to take it every day or follow some kind of course. If there's a risk – you take it, and that's it."

MSM, Odesa, on PrEP, no target STIs, aged 36

"I might have sexual contact a few times a month or, depending on the circumstances, more or less often. It's easier for me to take these pills than to take something every day, like PrEP."

TGW, Odesa, planning to initiate PrEP, no target STIs, aged 22

"When you're on hormone therapy, sexual desire and libido are often low. Yes, there are people for whom it's a way of life, but as far as I know, most people I know either have sex with a regular partner or don't have it very often at all. Speaking for myself, I had much more sex before hormone therapy."

TGW, Odesa, on PrEP, chlamydia, aged 26

Doxy-PEP was also regarded as better suited to a sex life that did not always unfold according to plan. In MSM accounts, condoms remained an important and familiar form of protection, but many participants acknowledged that they were not used consistently in real life. Among TGW, this logic also included situations involving clients, unequal power within sexual relationships or broken agreements. Respondents distinguished the convenience of Doxy-PEP from the role of other prevention methods: condoms were described as a more familiar form of protection that did not involve medication entering the body, while Doxy-PEP was viewed

as useful specifically when behavioural control had been insufficient or impossible. A positive view of the medication did not mean that participants were ready to abandon condoms. More often, they regarded it as a backup strategy that could reduce the consequences of a risk that had already occurred rather than replace prevention before exposure.

"Not everyone likes condoms, including me. I use them more often than some people who ignore them completely, but I still think Doxy-PEP would be more convenient. In terms of comfort, I'd prefer it to condoms. Although that doesn't mean I wouldn't also use a condom."

MSM, Kyiv, on PrEP, no target STIs, aged 33

"Obviously, a condom is much safer. A pill is prevention, but there are lots of other infections. Hepatitis, different fungal infections. Nobody's cancelling condoms. But pills are convenient, of course. With a condom, sometimes you don't have one, sometimes it breaks, sometimes you can't get it on. But with a pill, you take it after sex – and that's it."

MSM, Kyiv, on ART, syphilis, aged 41

"Not every MSM uses a condom for oral sex. If there's an infection in the mouth, you won't see it immediately. So condoms are very good, but Doxy-PEP would be more convenient."

MSM, Odesa, planning to initiate PrEP, no target STIs, aged 50

"Gay sex is very often connected with taking certain substances. Because of that, it's very easy to move away from using a condom. I know from experience that this happens a lot. Not just to me, but also among the people we've spoken to. So in that sense, Doxy might actually be better than a condom."

MSM, Kyiv, on PrEP, no target STIs, aged 31

"A condom is good and it protects you, but it isn't very convenient. The feelings aren't the same. So if there's something that can reduce the risk of infection, then it could work. And you don't always know what infections your partner has. They tell you one thing, but the reality can be completely different."

TGW, Odesa, on PrEP, no target STIs, aged 34 (2)

Motivation to use Doxy-PEP among MSM and TGW therefore centred on the need for a manageable action following a situation of uncertainty. For some, the main benefit was reducing STI risk after a specific contact; for others, it was reducing anxiety, the simplicity of a single dose, the possibility of avoiding a difficult treatment pathway, or greater autonomy when the circumstances of the sexual contact were not under their control. Most participants shared a desire for an additional tool suited to a sex life that could not always be fully planned in advance.

4.2.4. Concerns, limitations and conditions of acceptability

Concerns about Doxy-PEP among MSM and TGW arose primarily because it involved an antibiotic rather than because of the idea of post-exposure prevention itself. Respondents could readily understand the potential benefit of taking the medication after a higher-risk sexual contact, but were more cautious about preventive antibiotic use in the absence of signs of infection. Their accounts reflected unease about "treating something in advance" and fear of harming the body, while most drew a clear distinction between treatment prescribed by a doctor and preventive or frequent use without sufficient explanation. This distinction shaped the conditional acceptability of Doxy-PEP: the medication could be appropriate if its use was based on clear indications, limited in frequency and supported by a medically understandable rationale.

AMR was the most prominent substantive concern, although respondents understood and weighed this risk differently. Some participants had given little thought to resistance or viewed it as a distant problem that might not apply to a single dose. Others regarded AMR as one of the main limits on acceptable use and described it – not always in clinically accurate terms, but in an understandable way – as bacteria "getting used to" the medication, reduced antibiotic effectiveness or the risk that the medication would no longer work in the future. Among more informed respondents, AMR was not a reason to reject Doxy-PEP automatically, but a boundary defining appropriate use. Occasional use in situations involving a sufficiently clear risk appeared acceptable, rather than regular use after every sexual contact.

> *"I've read different things saying that frequent antibiotic use can make you get used to them. I don't know how true that is, but if you take the same antibiotic often, you can get used to it and then it won't work."*
>
> *MSM, Odesa, on PrEP, no target STIs, aged 50*

> *"It all depends on how often you have unprotected sex. If it happens several times a week and you take Doxy-PEP every time afterwards, then you're basically taking antibiotics almost continuously. That wouldn't really work for me anymore. But if it's once every month or two, then in principle that's okay, and I'd feel more comfortable with it."*
>
> *MSM, Lviv, planning to initiate PrEP, gonorrhoea, aged 22*

> *"Resistance sounds quite serious, but if the medication only needs to be taken after unprotected contact, then for me personally that wouldn't be regular or frequent enough to worry too much."*
>
> *TGW, Lviv, on PrEP, no target STIs, aged 37*

For many respondents, an important condition of acceptability was the distinction between Doxy-PEP as a medically explained prevention regimen and independently taking an antibiotic "just in case". Participants repeatedly stated that antibiotics should be prescribed or at least explained by a doctor rather than recommended by acquaintances, pharmacists or the internet. At the same time, the boundary between medically explained prevention and self-directed use was already partly blurred: interviews included accounts of acquaintances taking an antibiotic "as an extra precaution", people keeping their own supply at home, or receiving advice from pharmacists without being fully certain about the regimen. Such practices often arose not from a principled rejection of healthcare services, but in situations where accessing a doctor quickly was difficult. These experiences suggest that the future acceptability of Doxy-PEP will depend on whether it is introduced as a managed prevention approach capable of bringing greater structure to informal practices that already exist.

> *"When it comes to antibiotics, I'm in favour of them, but I'm against uncontrolled use… I've heard that if you keep stuffing yourself with them, then when you actually need the same class of medication, it might no longer work. I could find a way around the rules, and I even know websites that deliver prescription medication, but I don't want to. It isn't paracetamol, after all. You need to approach antibiotics sensibly."*
>
> *MSM, Kyiv, on PrEP, no target STIs, aged 33*

"It's still an antibiotic, and antibiotic resistance hasn't gone away. I want this approach to be available, but only when it's well founded and justified. When a doctor screens you, talks to you, understands the situation and says, 'Okay, we can do this, but keep in mind that this may be a one-off, or perhaps twice. Don't get used to it, and get tested regularly, because resistance could mean that the antibiotic won't work later.'"

MSM, Kyiv, on PrEP, chlamydia, aged 29

A separate set of concerns focused on the effects of antibiotics on the body. Some respondents spoke less about specific adverse effects than about a general sense of medication burden: effects on the microbiota, stomach, intestines, liver or immune system. For people with gastritis, antibiotic-associated diarrhoea or a history of difficult treatment, Doxy-PEP was viewed as an intervention that could have consequences even after a single dose. In these accounts, safety extended beyond a standard list of adverse reactions: respondents wanted to understand how well the medication was tolerated, which reactions were expected, how discomfort could be reduced and when repeated use might be inadvisable.

"I have Stevens–Johnson syndrome – an individual allergic reaction to medication, any medication. I can take analgin or paracetamol and be completely fine, or I can have a terrible allergic reaction because I have asthma and I'm allergic to many things. Once, after antibiotics, I had severe hives, gastrointestinal problems and ulcers on my tongue and mucous membranes."

MSM, Lviv, planning to initiate PrEP, no target STIs, aged 29

Previous negative experiences of antibiotic treatment could substantially alter perceptions of Doxy-PEP. For some participants, antibiotics were associated with prolonged gastrointestinal problems, dietary restrictions, additional medication or fear of returning to a previous state of ill health. In these cases, interest in Doxy-PEP did not disappear completely, but became more selective: a respondent might be willing to take the medication following a genuinely high-risk exposure, but would not want to use it frequently or after every contact that caused anxiety. These accounts show that acceptability is shaped both by knowledge of effectiveness and by embodied experience of previous treatment.

"I'd never had any bowel problems, but while dealing with stress and gonorrhoea I was treated with antibiotics, doxycycline and tetracycline, and in about two weeks I completely destroyed my gastrointestinal tract. Now I'm being treated for irritable bowel syndrome. Antibiotics are a major trigger for me now because my microbiota has been disrupted, and this isn't just one month of dieting. I understand that the same doxycycline could take me back to that state. I had diarrhoea for six months, antibiotic-associated diarrhoea that completely disrupted my bowel movements."

MSM, Kyiv, on PrEP, gonorrhoea, aged 29

Compatibility between Doxy-PEP and other medications was a central condition of trust, particularly for TGW and respondents with chronic conditions or regular medication use. Questions about combining doxycycline with PrEP, ART, hormone therapy, antidepressants or medication for the heart, kidneys or liver were practical: Doxy-PEP should not disrupt an already established balance between medication, health status and daily routine. Respondents intuitively understood that PrEP, ART, hormone medication and doxycycline belonged to different pharmacological groups and assumed that serious interactions were therefore unlikely, but most still wanted confirmation from a doctor or an opportunity to ask questions relevant to their individual circumstances.

"Someone from a community organisation could explain compatibility if they have medical training. An infectious disease doctor – definitely, no question. There are other resources, like those stupid GPT chats, but let's not go into that. There are more authoritative sources that can check how compatible PrEP medication is with antibiotics. A doctor told me that different classes of medication can usually be combined, but they should be taken at least two hours apart."

MSM, Kyiv, on PrEP, no target STIs, aged 33

For TGW, concerns about compatibility extended beyond pharmacological interactions. Hormone therapy, antidepressants, PrEP, ART and other medications formed part of long-term management of their bodies, transition, mental health and sexual health. Doxy-PEP was therefore assessed as another medication that would need to fit into an already complex medical configuration. Questions about the liver, kidneys, hormone levels or general wellbeing reflected an experience in which medical decisions were rarely isolated. Acceptability for TGW therefore depended on receiving guidance relevant to their specific medication use and gender-related context rather than a universal instruction.

"I take hormone therapy and I'm constantly worried about the burden on my kidneys. That's why I always rely on a doctor. I don't choose things myself and never treat myself. Everything goes through a doctor."

TGW, Odesa, on PrEP, no target STIs, aged 23

"What I have now didn't take one, two or even five years of treatment to achieve. I wouldn't want some medication to set me back. If I had to choose between hormone therapy and another medication, such as PrEP or doxycycline, hormone therapy would come first because getting to this point was very difficult for me."

TGW, Odesa, on PrEP, no target STIs, aged 34 (2)

Short-term adverse effects were generally not regarded as an absolute barrier if they remained mild, temporary and understandable. Few participants who had taken doxycycline for STI prevention or treatment reported substantial adverse reactions. Across the wider sample, nausea, stomach discomfort, diarrhoea or photosensitivity were more often viewed as a possible trade-off for reducing STI risk. Willingness to tolerate these effects nevertheless depended on previous experience of antibiotics and the level of confidence in the regimen. If adverse effects were more severe, prolonged or disruptive to everyday activities, motivation to use Doxy-PEP again could decline. Respondents therefore wanted to know in advance which reactions were expected, when medical advice should be sought and when continued use should be reconsidered.

"Every pharmaceutical medication has adverse effects, and some people experience them while others don't. So it's all individual, and they list these effects so people won't be frightened and will understand that they're possible. The effect against STIs is more important. Even if this medication caused strong adverse effects that affected how I felt or interfered with everyday life, I'd simply go to a doctor, tell them, and perhaps they'd look for an alternative."

TGW, Odesa, on PrEP, no target STIs, aged 34 (1)

"If this medication helps and means I don't get infected, then mild adverse effects like that are something I can easily tolerate."

MSM, Kyiv, on PrEP, syphilis, aged 35

"If a medication has no adverse effects, you can question whether it has any main effect either. So when you take medication like this, you need to be prepared for that."

TGW, Odesa, planning to initiate PrEP, no target STIs, aged 22

"If I take it and experience adverse effects myself, then I'll think about it. If they're serious or uncomfortable, or if I feel unwell, I won't take it. If it's something mild that passes and doesn't interfere with my life for those hours or days, then that's okay."

MSM, Kyiv, planning to initiate PrEP, gonorrhoea, aged 39

The incomplete effectiveness of Doxy-PEP did not undermine interest in the medication, but required honest communication about its limits. Greater effectiveness against syphilis and chlamydia was viewed positively, while lower effectiveness against gonorrhoea did not lead most participants to reject the approach – an additional reduction in risk was seen as valuable even without complete protection. Some responses nevertheless reflected an expectation of broader or almost universal protection against STIs, indicating a genuine risk of misunderstanding: if the medication is presented too generally, users may overestimate its protective effect and underestimate the need for testing, particularly for gonorrhoea.

"It's still effective against syphilis. There's no single pill that works against everything at once and is maximally effective. Psychologically, of course, everyone wants to hear more than 90%, but… There were also different figures for PrEP, especially for 'on-demand' use before it was approved as a single standard. The social worker told me one thing and the doctor another, referring to different protocols. So for me, 70% protection is already a lot and inspires confidence. Anything over 50% is already good."

MSM, Kyiv, on PrEP, no target STIs, aged 33

"There isn't one universal antibiotic for all STIs, and it makes sense that some bacteria may be sensitive to it while others aren't. But then people need to be clearly informed that it's more effective against some infections and less effective against others. I think people will assume that if they're using Doxy-PEP, they're protected against all bacterial STIs. In reality – they aren't. I see a risk here because people often don't look into these things in detail and then face the consequences."

MSM, Lviv, planning to initiate PrEP, gonorrhoea, aged 22

"To me, syphilis is a more serious infection. It's harder to treat and causes more problems than gonorrhoea, which can be treated fairly easily and quickly. So its effectiveness in preventing the more serious infection is a benefit for me."

MSM, Odesa, on ART, syphilis and gonorrhoea, aged 49

"I think that if it helps against at least some infections, that's already good. There's no medication that covers everything in one. Everyone will decide what matters more to them: taking a pill and protecting themselves against at least some infections, or doing nothing at all."

TGW, Odesa, on PrEP, no target STIs, aged 34 (2)

Respondents had mixed views on the potential behavioural effects of Doxy-PEP. Most participants expected it to have no effect on their number of partners or frequency of condom use. Others suggested that access to the medication could reduce caution about risk or create a sense of additional protection that might influence sexual decisions – an issue readily understood by people who had already observed how PrEP could change attitudes towards condoms. Most of these reflections were not presented as arguments against Doxy-PEP, but as indications that it should be introduced as an additional tool for specific risk situations without creating an impression of complete protection.

"I think people will start using condoms less. Given that it's less effective against gonorrhoea, it's still better to combine the two. But I think the same thing happens with PrEP: some people think PrEP protects against more than HIV, so they don't use condoms and don't think about catching other infections."

MSM, Kyiv, on PrEP, no target STIs, aged 31

"When PrEP was first developed, it had a different purpose. But now, especially among gay men, it's turned into, 'I can have sex however I like because I'm protected by PrEP.' There are other STIs, but we forget about them a little. With Doxy-PEP, we need to take it more seriously so it doesn't simply become another panacea, like PrEP."

MSM, Kyiv, on PrEP, chlamydia, aged 29

"Doxy-PEP seems logical and convenient because you take it after sex within a certain timing window, and it provides some degree of reassurance. I'm not sure the number of times I have sex would change, but I think my already minimal condom use would fall to zero. I don't see condoms as providing a 100% guarantee, and, for example, the condoms we receive for free may be expired, which worries me."

TGW, Odesa, on PrEP, no target STIs, aged 27

Overall, concerns about Doxy-PEP did not negate its potential acceptability, but defined the conditions under which it could be perceived as safe and appropriate. For MSM and TGW, it appeared acceptable when use remained occasional, was justified by a specific situation, medically explained, compatible with existing medication and linked to consultation. The main reservations concerned preventive antibiotic use itself, AMR, adverse effects, frequency, limits of effectiveness, self-prescribing and possible changes in sexual behaviour. In these accounts, Doxy-PEP emerged as a tool requiring clear boundaries, trust and an understandable rationale for use.

4.2.5. Preferred formats of access and support

MSM and TGW understood acceptable access to Doxy-PEP in terms of trust, speed, confidentiality and the ability to receive a clear explanation without judgement. Respondents did not describe access simply as the physical availability of tablets – they wanted to know who would explain the medication, whether they could ask questions about their own circumstances, whether they would have to disclose unnecessary details about their sexual lives or gender-related experiences, and whether the pathway would be fast enough for a post-exposure regimen. In their accounts, acceptable access combined medical reassurance with practical accessibility rather than unrestricted provision of an antibiotic after any perceived risk.

The first level of access was often imagined as an explanation from a trusted source. Friends, partners, social workers or online sources could provide an initial introduction to Doxy-PEP, but most participants wanted confirmation from a doctor or an NGO-based medical counsellor before making a final decision. This confirmation needed to address more than the general benefits of the medication. Participants wanted answers to specific questions: whether Doxy-PEP was appropriate for them personally, whether it could be combined with PrEP, ART, hormones or other medications, how often it could be taken, and what to do if symptoms appeared. Initial interest in Doxy-PEP therefore needed to develop into an individual understanding of its use, and this was what made an access pathway acceptable.

"With a family doctor, you have to make an appointment, then get there, wait in a queue, spend the time… But you know NGOs are always nearby. There are many of them in the city, you can go to any one of them, and they'll help you and explain everything. They welcome you in a way that makes you want to tell them even the things you'd never tell anyone else and ask about everything that worries you. They'll never refuse to explain."

MSM, Odesa, on PrEP, no target STIs, aged 50

"I need to talk to a doctor, I need to have tests, I need to understand how all of this works, sit down and think about it until I understand."

MSM, Kyiv, on ART, no target STIs, aged 30

Respondents generally did not expect continuous medical supervision for every dose, but wanted a clear medical framework at the outset. Many considered a model acceptable in which a person received an initial explanation, was assessed for contraindications or potential interactions, understood the regimen and could subsequently act independently within defined rules. This autonomy was important because Doxy-PEP is intended for use after a particular contact and may be needed at night, during the weekend or at a time when arranging a medical appointment is unrealistic. At the same time, autonomy did not mean arbitrary use – respondents expected a clear distinction between self-administration under a previously explained regimen and self-prescribing an antibiotic without understanding the indications.

"The main advantage of Doxy-PEP is probably that you can go and consult a doctor, and they'll prescribe the tablets because you can't prescribe them for yourself. Then you just take them if you've had unprotected sex or you're worried about a particular partner, and you feel calmer."

MSM, Lviv, on ART, no target STIs, aged 28

"If we're talking about the first consultation, I think the doctor will explain everything that needs to be explained. Why would I need a consultation every time? I think one consultation would be enough."

MSM, Odesa, on ART, no target STIs, aged 33

For many participants, the most convincing option was a combined model in which an NGO or CLO representative introduced the topic, while a doctor or clinical professional addressed safety-related questions. A social worker was often regarded as a more accessible first point of contact: it was easier to message them, they could explain information in understandable language, reduce fear of judgement and suggest the next step. The doctor's role was different: to explain the dose, contraindications, adverse effects, compatibility, frequency and situations in which testing or treatment was needed instead of Doxy-PEP. Within this model, NGOs and CLOs would not replace the medical pathway, but would make it more accessible, understandable and less stigmatising.

"I'd want a doctor to tell me about this medication. I could have some additional tests to make sure everything would be okay, or have an examination after taking it for the first time. I'd trust a doctor first. I know of cases where people in the trans community prescribe medication for themselves. I don't do that. I don't want to ruin my health."

TGW, Odesa, on PrEP, no target STIs, aged 34 (2)

"In general, I'd ask a doctor all of my questions. For me, a doctor is someone who has experience and education and takes a more informed approach to the information they give each patient."

MSM, Kyiv, on PrEP, gonorrhoea, aged 29

"Things related to health should be explained by a doctor – someone who trained for this and understands it. A counsellor who performs tests isn't a general medical specialist and doesn't know much about all the inactive ingredients involved.. Everyone should do their own job. I'm not against consultations being provided by people who aren't doctors, but the dosage, descriptions and all that work should be handled by a doctor."

MSM, Lviv, planning to initiate PrEP, syphilis, aged 28

For TGW, an acceptable access pathway was closely linked to trans competence. A Doxy-PEP consultation for this group could not be limited to a general discussion of STIs because the medication was immediately considered in relation to hormone therapy, other medications, mental and emotional wellbeing, previous discrimination and the safety of contact with the healthcare system. Respondents preferred doctors, NGOs or counsellors who already understood trans experiences and would not require them to repeatedly explain differences between their documents and appearance, pronouns, hormones or aspects of transition. The acceptability of access depended on whether the process itself created an additional risk of stigma, inappropriate forms of address or disclosure of identity.

"There's more tension in healthcare facilities: the meaningful looks, giggling, strange gestures. It isn't very pleasant. Even though they're doctors, they ask such uncomfortable and, I'd say, incompetent questions: when, how, where, why?.. So if this were available through organisations, from someone trained or the same friendly doctor, it would be much more pleasant because they treat you with more respect."

TGW, Odesa, on PrEP, no target STIs, aged 34 (2)

"If I decide to take this medication, I'll first consult the endocrinologist who manages my hormone therapy."

TGW, Odesa, on PrEP, no target STIs, aged 34 (1)

"It would be more convenient for me to have a consultation with a doctor or an NGO counsellor. I'd actually prefer the second option. I think they're more informed about this. Doctors are doctors, but NGOs have been working in this area for longer and understand it better. And I'd want to hear a professional opinion."

TGW, Lviv, planning to initiate PrEP, no target STIs, aged 27 (2)

For some MSM, the most natural access route was through existing PrEP, ART, testing or friendly-service pathways. Where a person already had a doctor, social worker or organisation with whom they could discuss sexual practices, a new medication could be incorporated into an existing relationship – without having to explain male partners, condomless sex or STIs from the beginning each time. At the same time, not all potential users were in stable PrEP or ART care, meaning that HIV services represented a strong entry point but could not be the only way to reach people at risk of bacterial STIs.

"I'll take Doxy-PEP exactly as my doctor tells me. If she says I shouldn't take it more than once or twice a month, then I won't. Doctors rely on protocols and recommendations. My infectious disease doctor attends conferences, knows the current protocols, understands how different conditions are treated and what the recommendations are. So it won't be difficult for me to ask her about Doxy-PEP. She'll explain which recommendations are better or worse and advise me."

MSM, Kyiv, on PrEP, no target STIs, aged 33

"It would be convenient to receive Doxy-PEP in the same place where I receive PrEP. You don't need to explain anything there. Perhaps it would be convenient if the doctor prescribed it and issued a long-term prescription."

MSM, Kyiv, on PrEP, syphilis and gonorrhoea, aged 36

"I've been seeing the same doctor for more than a year, taking PrEP and having all my tests, and she knows all my results. Based on that, she can recommend or not recommend doxycycline. First, there's already an established relationship. Second, I trust her professionalism. Third, she has enough information about me."

MSM, Odesa, on PrEP, gonorrhoea, aged 26

Ordinary primary care or any "general" doctor was not always perceived as a safe place to begin a conversation about Doxy-PEP. Some respondents had positive experiences with family doctors, but many did not discuss sex with men, STIs, PrEP, trans experiences or paid sexual services with them – because of embarrassment, reluctance to disclose, expectations of inappropriate treatment or previous negative experiences. Medical involvement did not in itself guarantee trust: what mattered was not only the professional's formal status, but a combination of competence, friendliness, confidentiality and the ability to discuss sexual risk without judgement.

"I do trust doctors, just not always every doctor. It depends on how the doctor communicates with me. Some doctors are like old Soviet-style doctors and don't engage with you properly. You can tell from the way they speak that they don't care about you and you're just another patient. But other doctors talk to you normally, reassure you that everything will be fine, and you can communicate with them more or less comfortably."

MSM, Kyiv, on ART, no target STIs, aged 30

"In general, I trust doctors. But if I've had unprotected sex, I feel uncomfortable telling a doctor that I had sex stupidly and now want an antibiotic. I'd rather take it myself."

TGW, Odesa, on PrEP, chlamydia, aged 26

"I haven't discussed infections with my doctor because I can't tell her everything as it is. When I speak to my family doctor, I describe everything in a very impersonal, general way. Unfortunately, I can't speak openly about these topics because my family doctor reacts very negatively to them, and I know that. I tried to raise the subject once and received a harsh response, so I didn't try again."

TGW, Odesa, on PrEP, no target STIs, aged 34 (1)

Speed of access was critical because of the post-exposure principle itself. Higher-risk situations often occurred in the evening, at night, during weekends, after a party, while travelling or following alcohol use. If a person then needed to find a doctor, obtain a prescription, travel to a pharmacy or wait for a consultation, the timing window could lose its practical value. Participants therefore preferred models in which the initial medical explanation was provided in advance and the person either already had the medication or had access to a rapid channel for clarification after an exposure.

"Making an appointment with a doctor and going there all takes time. I work Monday to Friday and can't always see a doctor. On Saturday and Sunday, most doctors aren't working. So it would be easier for me to go to a pharmacy and buy it."

MSM, Lviv, planning to initiate PrEP, syphilis, aged 28

"Time, queues and travelling there are much more important than cost. If I can get it as quickly as possible by paying more, I'll choose that option rather than receiving it free of charge but spending half a day or an entire day. That's critical."

TGW, Lviv, on PrEP, no target STIs, aged 37

The option of keeping a small advance supply of the medication was practically important to some respondents and was not seen as a request for uncontrolled access to antibiotics. If the medication needs to be taken within 24–72 hours, it must be available when the risk has already occurred rather than only after completing an entirely new service pathway. For people with irregular working hours, fear of travelling around the city, paid sexual contacts or night-time encounters, this could determine whether Doxy-PEP was actually used. An advance supply was considered acceptable when provided after a consultation and accompanied by clear instructions on appropriate situations, frequency, symptoms and follow-up testing.

"Keeping the medication in advance is a good idea. It's convenient and gives you constant access. The risk of misuse depends on the individual and their conscious choice. We're all adults, so it's each person's decision."

MSM, Kyiv, on PrEP, syphilis, aged 35

"If the medication is available and kept at home, and you don't need to look for a doctor and try to make an appointment within the first 24–48 hours, that's the best option. It's better than running to a doctor after every sexual contact."

MSM, Odesa, on ART, no target STIs, aged 33

"If I have it and it's sitting on my shelf, I can take it and that's it, I'm fine. If I have to travel to a doctor, stand in a queue and then do something else… That's an unnecessary process that will discourage people from obtaining the medication."

TGW, Lviv, planning to initiate PrEP, syphilis, aged 22

A prescription or another form of medical authorisation was not rejected if it did not undermine the practical value of post-exposure prevention. Participants did not express a desire for completely unrestricted access to doxycycline without professional involvement, but a slow or bureaucratic prescription pathway could reduce acceptability. Potential barriers included a limited number of dispensing points, having to explain one's sexual life to a pharmacist, and unpredictable delays. Medical authorisation was valued when it provided reassurance and clear boundaries, but not when it created a delay that made post-exposure use too late. In most interviews, the idea of obtaining the medication from a pharmacy using a special code or password was received negatively – this format was perceived as creating a greater risk of disclosing membership of a particular group than an ordinary prescription.

"You can find antibiotics without a prescription because many pharmacies here will sell them. But if doxycycline is prescription-only, I don't have a prescription, and I'm unlikely to get an appointment with a doctor within 48 hours, then that's already a problem. If I have it at hand in my home medicine cabinet, I think I'll find a moment to take it within 48 hours."

MSM, Lviv, on PrEP, no target STIs, aged 34

"If it's prescription-based, then you have a consultation with a doctor who genuinely understands that you need the medication. Once you've discussed everything with the doctor, they give you a prescription and you simply go and collect it. In general, prescription medication is more acceptable to me."

MSM, Kyiv, on ART, no target STIs, aged 30

"It would be best to receive it by prescription because without a prescription I might get used to it and become dependent on it."

MSM, Lviv, on PrEP, no target STIs, aged 23

"It would be better if it weren't available at only one specific point, but at many locations. If it can be obtained by prescription, it should be available at several places across the city, and preferably not only within the city but also across the region. Not everyone lives in the city; some people may be outside it."

TGW, Lviv, planning to initiate PrEP, no target STIs, aged 24

Remote and hybrid access formats were acceptable to some respondents if they retained a link to consultation. Online consultations, messaging a social worker, telephone contact, delivery or collection through a postal service could reduce barriers to seeking support, particularly during the war, with restricted mobility, fear of TRSSCs or curfew. For TGW with a male gender marker in their identity documents or negative experiences of public institutions, a remote component could provide additional safety as well as convenience. Respondents did not, however, describe online access as a complete substitute for medical explanation – what they valued was a hybrid model: fast, confidential and linked to a professional whom they could approach with their individual concerns.

"If you have to go to a doctor in an official institution, that would be difficult for me now because of the ongoing mobilisation campaign. If the medication is available in pharmacies, and there are pharmacies everywhere, especially in a large city, you could go to any of them and receive it with a prescription if it's in stock."

MSM, Lviv, planning to initiate PrEP, syphilis, aged 26

"On the one hand, we live in the digital era, so online consultations would be good. But not everyone will trust them. Physical contact with the person advising you inspires more trust. But there's a war and mobilisation now, and many men don't leave their homes. Not everyone can afford to go to a hospital. So online consultations need to be considered."

MSM, Kyiv, on ART, no target STIs, aged 30

"A consultation is desirable. And not just for me, but for anyone receiving the medication. They need to be told what it is and how it works, rather than simply having it sent by post. A consultation should be mandatory so the person understands everything, doesn't take it without control or invent their own regimens."

MSM, Kyiv, planning to initiate PrEP, gonorrhoea, aged 39

"TRSSCs and mobilisation are a very painful issue. There are cases where even people with official exemptions are taken away, so what can we say about people like us? It's inconvenient: you have to go out into an unsafe environment, travel to a professional, obtain a prescription and only then buy the medication. It's much easier to order it to your address through a pharmacy or take the risk and visit the nearest pharmacy."

TGW, Odesa, on PrEP, no target STIs, aged 34 (1)

Confidentiality was a consistent condition of an acceptable pathway. Doxycycline itself was not stigmatised, but Doxy-PEP could become a recognisable marker if obtaining it were publicly associated with MSM, TGW, condomless sex, sex work or STIs. The risk of unwanted disclosure could arise in a pharmacy, during delivery, in interaction with a pharmacist, within an intimate relationship or in a small community where people frequently encountered one another. For some participants, this sensitivity was heightened by service in the Defence Forces of Ukraine, identity documents or the possible social consequences of disclosure. Confidentiality therefore concerned both medical information and how the very act of obtaining the medication might be interpreted by others.

"In an ordinary pharmacy it might be uncomfortable because there could be other people around. [Name of online medication ordering service] works very conveniently: I arrive, give the order code and they hand me the medication. At [pharmacy name], they even have lockers: you arrive, enter a code, it opens, you collect the medication and go to pay. If there's no interaction with other people at all, that's the height of convenience."

MSM, Kyiv, on PrEP, no target STIs, aged 31

"Privacy is important to me because my husband is in the military, and I'm always thinking about him: I don't want anyone to find out that he's gay, that he lives with an HIV-positive partner or that he takes any medication. I don't want rumours spreading. We know that in the military, if someone is found to be gay, it can block their career progression, interfere with their work and make people point fingers at them. It would put pressure on him, and he's a very sensitive person."

MSM, Kyiv, on ART, no target STIs, aged 30

"Of course there's fear of judgement because these prevention approaches are mostly used by the community rather than heterosexual people. So it's like an obvious indicator that raises concerns about being judged."

TGW, Lviv, planning to initiate PrEP, no target STIs, aged 27 (1)

Explanations needed to be simple but sufficiently detailed to support independent use. Verbal counselling could be useful, but some respondents recognised that there might be too much information about STIs, prevention, adverse effects, the timing window and frequency to remember everything. Short written or visual materials that could be stored on a phone or reread after a sexual contact were therefore considered desirable. Instructions needed to explain the dose as well as the situations in which use was appropriate, limits on frequency, actions to take if symptoms appeared, the need for testing, and circumstances in which advice should be sought.

"There should be information about compatibility, how often to take it so there isn't resistance, and exactly which situations it should be used in. And perhaps a note saying, 'Don't have unprotected sex this often.' If the pill protects against particular infections, there should be information about those infections: what the symptoms are and how difficult they are to treat afterwards."

MSM, Lviv, on ART, gonorrhoea, aged 32

Price mattered but did not determine the acceptability of the pathway on its own. Information that doxycycline cost less *(UAH 27–210 per pack)* than most respondents had expected *(UAH 500–1,000 per dose)* reduced the financial barrier and made it more realistic as event-driven prevention, although for some participants the lower-than-expected price raised doubts about effectiveness. Some respondents also felt that paying for the medication could encourage more deliberate use, particularly because it was an antibiotic. For people with unstable incomes or recurrent higher-risk contacts, even a moderate price could become a barrier if medication, consultations or testing were needed repeatedly. The actual cost of the pathway included the tablets, transport, laboratory tests, consultations and possible follow-up visits. The affordability of Doxy-PEP was therefore linked to broader questions about access to STI services.

"Medication that works can't be this affordable. When you're ill and spend a lot of money on medication, of course you automatically start comparing things… If there's a chance this medication can protect you, why is it so cheap?"

MSM, Kyiv, on ART, no target STIs, aged 30

"It would be better if Doxy-PEP were prescription-based and paid for because that creates a culture of conscious use. Take other countries where people buy PrEP at a pharmacy. That gives the product value. You understand that your risky behaviour has a financial cost. You either pay and continue that kind of sexual lifestyle, or you think, 'No, let's use a condom instead because this Doxy-PEP is expensive and I don't want to take the risk.'"

MSM, Kyiv, on PrEP, chlamydia, aged 29

MSM and TGW imagined acceptable access to Doxy-PEP as a hybrid pathway in which the medication remained medically explained but did not become practically inaccessible after a higher-risk contact. Key elements included a trusted doctor or counsellor, the role of NGOs or CLOs as the first point of entry, the ability to ask questions quickly, confidentiality, trans competence, remote or hybrid formats, a small advance supply following an initial consultation, understandable prescription rules and an acceptable price. Within this model, Doxy-PEP should not resemble an antibiotic available without restriction, but neither could it be tied to a pathway that required more time or created greater safety risks than the post-exposure regimen allowed.

4.2.6. Practical manageability and self-efficacy of use

The practical feasibility of Doxy-PEP for MSM and TGW depended on whether a person could incorporate post-exposure use into real situations in which risk often arose unexpectedly. Most respondents did not regard taking a tablet as technically difficult, particularly if they had experience of PrEP, ART, hormone therapy or other regular medication. A post-exposure regimen, however, requires a different form of self-organisation from a daily routine: the person must recognise a situation as appropriate for Doxy-PEP, remember the medication after sex, have it available or obtain it quickly, remain within the timing window and avoid confusing prevention with treatment of a possible existing infection. Confidence in the ability to use Doxy-PEP was relatively high, but remained conditional on the quality of the initial explanation.

The first practical condition for correct use was the ability to determine after which contacts the medication was genuinely needed. Most respondents did not imagine Doxy-PEP as an automatic action after any sexual encounter, but associated it with situations they considered less controlled, more casual or likely to leave room for uncertainty: sex with new or unfamiliar partners, group sex, contacts at sex parties, condomless anal sex, and sex involving alcohol or psychoactive substances. Within this logic, self-efficacy meant being able to assess risk clearly enough to avoid taking the medication too often and to distinguish a situation requiring prevention from one requiring testing or treatment.

"After sex parties, after a new partner I don't know well enough and whose health I'm unsure about, I'd probably take it. If it's a sex party with many partners, I'd take it because I understand that people who attend sex parties and constantly change partners have a higher risk of acquiring these infections."

MSM, Kyiv, planning to initiate PrEP, gonorrhoea, aged 39

Experience of taking medication regularly helped respondents imagine how they might organise Doxy-PEP use. People using PrEP, ART, hormones or other medications often already used alarms, pill organisers and kept medication with them. Medication-taking discipline was therefore not new to them, but Doxy-PEP does not fit the same routine because use is triggered by an event rather than a calendar. Even someone who is disciplined with daily treatment needs a simple algorithm following spontaneous sex, psychoactive substance use or a night-time encounter: whether a risk occurred, when the timing window began, whether the medication was available, and whether additional advice was needed. At the same time, the single-dose and occasional nature of Doxy-PEP, unlike a daily routine, increased the likelihood that a reminder would attract attention.

"There's nothing difficult about the regimen. I also take PrEP on demand, although with that you have to take it 'before' as well. The main thing is to set reminders and alarms and use your head. When I took antibiotics or vitamins for a long time, I sometimes missed them because it was daily and routine. But when it isn't regular and the alarm goes off during the day, it immediately gets your attention."

MSM, Kyiv, on PrEP, no target STIs, aged 33

For most participants, personal reminders were the simplest way to support timely use. An alarm or note on a phone was familiar to people who already used reminders for PrEP, ART or hormones. A post-exposure regimen, however, has a weak point before the reminder itself: the person first needs to remember to set it. This initial step may be the most difficult after a contact that was spontaneous, emotionally intense or involved psychoactive substances.

"A reminder on your phone… But again, you have to set it in advance. First, you have to remember to set the reminder, and then you have to remember to take the medication."

MSM, Odesa, on ART, no target STIs, aged 33

"You can set an alarm, if you remember. If you don't have the medication with you but know you need to get home and take it, it's better to set a reminder. Or carry a small pill box with you."

TGW, Kyiv, on PrEP, chlamydia, aged 36

External support to remind people to take Doxy-PEP was viewed cautiously because most respondents associated it with personal responsibility. Participants generally felt that individuals should assess the risk themselves, set a reminder and take care of their health, and did not describe a need for continuous support after every contact. This emphasis on autonomy did not reduce the need for clear initial instructions, because independence could work only when a person had sufficiently clear rules rather than having to guess each time whether the situation was "risky enough" to justify an antibiotic.

"Sex is something spontaneous; you can't plan it. Self-discipline would probably help you remember. If you remember it and need it, you'll do it. If you keep forgetting, then maybe you don't really need it."

MSM, Lviv, on ART, gonorrhoea, aged 32

"We need to develop a culture where people manage these things themselves: 'Okay, I need to set an alarm, I need to make an appointment with a doctor.' We shouldn't create a system where a social worker calls and reminds them to go and collect it. Social workers provide prevention services, and that's important, but if we involve them in things like this as well, where will they get the resources for the genuinely important work?"

MSM, Kyiv, on PrEP, chlamydia, aged 29

Having the medication at hand was an important condition of practical feasibility. Even a relatively broad window of 24–72 hours could lose its value if a person had to search for a doctor, prescription, pharmacy or way to obtain the medication during the weekend or at night. Under martial law, this became even more important: travelling around the city, fear of TRSSCs, curfew, air-raid alerts or exhaustion could make a post-exposure pathway practically inaccessible. Notably, respondents rarely regarded keeping a supply of the medication at home as a potential risk of misuse.

"If I know I'm going somewhere and sex isn't guaranteed but might happen, I'll take it with me just in case. If I stay somewhere overnight, I'll simply take it in the morning."

MSM, Lviv, planning to initiate PrEP, no target STIs, aged 21

"Air-raid alerts are a real pain for everyone. So I'd rather receive it through a community organisation – a doctor brings PrEP there, and I've received it that way before. Travelling to a hospital and finding the doors locked because they can't receive patients during an air-raid alert is incredibly frustrating. You've spent the whole day – for nothing. Then when the alert ends, everyone goes in at once, around ten people at the same time, and you still have to wait in a queue… No. It's better to receive it through a community organisation."

MSM, Kyiv, on PrEP, no target STIs, aged 33

"An air-raid alert starts just before the appointment, the doctor comes out and says she's going to the shelter and we also need to go. So you make an appointment for a particular time, arrive, then there's an air-raid alert – and your appointment may be cancelled, rescheduled or you'll have to wait in a live queue."

TGW, Odesa, on PrEP, no target STIs, aged 34 (1)

"There could be a temptation to misuse it… But I don't even know how many unprotected contacts and random partners someone would need to have for that?.. That's already a question for the person. What's going on in their head, why are they doing it, and what are they actually interested in in life?"

MSM, Kyiv, on PrEP, gonorrhoea, aged 29

Group sex, chemsex, sex parties, night-time encounters and prolonged sexual sessions made an apparently simple regimen more difficult to follow. In these scenarios, risk could involve several contacts, continue for many hours, include different partners or arise when the person had less control over time and their own decisions. The question of "when exactly to start counting" became less obvious. Without specific clarification – what to do after several contacts in one night, how to act after a prolonged session and whether the dose could be repeated following a new risk – even a motivated user might interpret the regimen in their own way.

"If it's chemsex, people already have problems with ART and PrEP. People with serious addictions have problems with everything, so even if you invent a super-pill, there'll still be a problem with when to take it. Someone responsible won't have a problem. They'll have everything prepared in advance. But these group sessions where parties last 3–4 days – when are you supposed to take the doxycycline? Four days afterwards? Or on the first day?"

MSM, Kyiv, on ART, syphilis, aged 41

"You might be at a party, then after the party travel to the other side of the city, keep partying there, take drugs or drink alcohol, and lose track of time. You don't remember when you had sex – whether it was morning, evening or night… You lose track of time and don't understand how long you have left to take the medication. And of course that creates a risk of missing the window."

MSM, Kyiv, on ART, no target STIs, aged 30

"Of course, if you were very drunk or high, you might completely forget that the contact even happened."

TGW, Kyiv, planning to initiate PrEP, no target STIs, aged 23

Anxiety could support timely Doxy-PEP use while also creating a risk of excessive use. For some respondents, fear of infection or a tendency to analyse sexual contact for a long time afterwards could prompt them to take the medication quickly within the recommended window. In these cases, Doxy-PEP created a sense of action and reduced emotional tension. The same anxiety, however, could lead a person to take the medication following contacts involving lower or uncertain risk. Practical self-efficacy therefore included both the ability to take the medication on time and the ability to assess risk without excessive fear or excessive reassurance arising from the medication's availability.

"I probably wouldn't personally be worried about misusing it, but I know there are people who are even more anxious. They might take two pills 'just in case, so everything will be fine.' So people need to be told that if they take the medication frequently because they're anxious and worried, it can have consequences."

MSM, Lviv, planning to initiate PrEP, no target STIs, aged 29

Practical instructions for taking the medication generally appeared manageable if explained clearly and in advance. Most respondents did not view the need to take the medication with water, remain upright afterwards or avoid strong sunlight as serious barriers. Some requirements could nevertheless conflict with

everyday routines: sex at night, work, travel, a party or time at the beach. Instructions therefore need to be framed as practical guidance for the ordinary circumstances in which risk most often occurs.

"Taking it with water – all medication should be taken with water, so I don't think that's a problem. There's some flexibility with the timing: if there's no water available now, you can find some a little later. Avoiding the sun worries me slightly because it would be difficult during summer or on holiday. I'd probably try to listen to my body: if I didn't have any adverse effects or discomfort, I might cut a few corners."

TGW, Kyiv, on PrEP, chlamydia, aged 36

"There are some doubts about whether it would be appropriate to take it during certain periods. For example, if we're talking about summer, the question arises whether it should be taken. If the days are less sunny, then I think yes, but the health risks need to be considered."

MSM, Odesa, on PrEP, gonorrhoea, aged 26

Overall, MSM and TGW regarded Doxy-PEP as practically feasible, but not automatically simple. Taking the medication itself was not technically difficult, particularly for people experienced with other medication regimens. Complexity arose within the real sexual context: recognising an appropriate situation, having the medication nearby, remembering to take it after a contact, calculating the timing correctly and avoiding excessive use. Doxy-PEP can function as a manageable post-exposure action only when users receive clear and sufficiently specific instructions for the situations in which risk most commonly occurs.

4.2.7. Social and interpersonal influences

Social and interpersonal influences in the accounts of MSM and TGW were expressed primarily through who they could speak to safely about sexual health, risk and preventive medication. Respondents rarely described Doxy-PEP as a practice that would in itself attract strong disapproval from those close to them. Where partners, friends or NGO contacts already discussed PrEP, testing, STIs, condoms, hormone therapy or friendly doctors, a new post-exposure approach was imagined as another topic that could be discussed. In these settings, the social environment was more often viewed as a source of normalisation than as a direct barrier.

Close social networks often already served a practical navigation function in prevention. Friends, partners or former partners could remind someone to get tested, recommend a friendly service, share a doctor's contact details, accompany them to testing or support them in seeking care after a higher-risk contact. Social influence in these accounts took the form of concrete action: a person might fear judgement from healthcare providers or postpone testing, but someone they knew from the community could make the pathway more understandable and less anxiety-provoking. Doxy-PEP could similarly be introduced through people who were already trusted and could explain new information in the language of everyday experience.

"I'm always embarrassed and afraid because people are still ashamed of sexually transmitted infections. My partner helps me. He's open about these things and always says, 'It's your health.' I'm very focused on my appearance and take care of my face, and he says, 'You take care of your face, but you need to take care of your body too.' And when he supports me like that, I immediately say, 'Okay, yes, let's go.'"

MSM, Kyiv, on ART, no target STIs, aged 30

Partners' reactions depended on the type of relationship and the agreements already in place. In casual or less emotionally significant encounters, the partner was often not regarded as relevant to the decision about Doxy-PEP at all – post-exposure prevention was seen as a personal decision about one's own health that did not necessarily require explanation. In stable relationships, acceptability depended on whether sexual risk

could be discussed without blame. Where partners already spoke about PrEP, testing or sex with other people, the medication could be incorporated into an existing culture of responsibility. Where exclusivity was assumed but not discussed explicitly, Doxy-PEP could be interpreted as an indirect indication of other sexual contacts. Partner influence was therefore ambiguous: it could support use where prevention was already normalised, or complicate it where discussion of STIs was perceived as a threat to the relationship.

"I'd think about whether I needed to take it with a regular partner. But the words 'regular partner' can be complicated… Life has already taught me that he may be regular for me, but I'm not necessarily regular for him. It's entirely based on trust. With a casual partner, at a party or with a new partner, there's no trust at all. In any case, you can't build your health on trust alone."

MSM, Kyiv, on PrEP, no target STIs, aged 33

"With a partner, it wouldn't be a problem. You're not taking it to avoid infecting them; you're taking it for yourself. If it's a random partner, it isn't an issue at all. With a regular partner, it would only come up in the context of an open relationship. And it could even be a positive thing if he sees it and thinks, 'Great, you're taking it just in case.'"

MSM, Lviv, planning to initiate PrEP, no target STIs, aged 21

"If it were my partners, they might ask why I was taking these pills. They might suspect that I had something, that I'd caught an infection somewhere and could infect them. It could undermine trust between partners."

TGW, Odesa, planning to initiate PrEP, no target STIs, aged 24

"Regular partners would probably react neutrally or positively. With casual partners, whose reaction you can't predict, I simply wouldn't share that information."

TGW, Lviv, planning to initiate PrEP, no target STIs, aged 27 (1)

Respondents linked community attitudes towards Doxy-PEP to existing norms of openness around sexual health. In settings where PrEP, testing and STIs were already discussed, Doxy-PEP was viewed as a new but not fundamentally unfamiliar topic. Within trans communities, anticipated reactions were more likely to involve practical questions – about compatibility with hormones, reliability and where the medication could be obtained – than direct disapproval. Trust within the community was not automatic, however: some people were more cautious about gossip, unwanted disclosure or overlapping sexual networks within small social circles. Doxy-PEP could be disseminated effectively through trusted networks, provided that people did not feel pressured to disclose sexual details or explain why they needed the medication.

"As for NGOs… If I go to the centre in Odesa, I might meet people I know there, and that could be embarrassing. I'm not really comfortable with that."

MSM, Odesa, on PrEP, gonorrhoea, aged 26

"Odesa is a big village, as they say, so it's better to stay away from all that gossip. I don't like it myself… When someone comes to me and starts telling me something about another person, I say, 'Why are you digging through someone else's dirty laundry?' Everyone has their own life, and everyone decides for themselves what to do and how to do it. There's no need to discuss it."

MSM, Odesa, planning to initiate PrEP, syphilis and gonorrhoea, aged 39

Peer-to-peer sharing of experience could play an important role in normalising Doxy-PEP. Trust in the new approach increased when someone within a close or familiar social circle had already tried the medication, understood the regimen, had not experienced serious adverse effects and could describe their own experience. This form of trust differs from formal medical information: it makes a new approach less abstract and helps people imagine its practical details. Peer experience cannot, however, replace medical guidance – if Doxy-PEP spreads primarily through messages such as "I took it and everything was fine", users may not receive sufficient information about frequency, contraindications, AMR and limits of effectiveness.

"If social workers start working with this, the word will spread quickly. If it's effective, people will share the information fast. You won't even need advertising: launch the project, and by tomorrow people will already be lining up. Social workers will immediately say, 'My God, it's a miracle pill – you take it and turn into a very beautiful woman,' and that's it, nothing else needs to be done."

MSM, Kyiv, on ART, syphilis, aged 41

The simplicity of the basic Doxy-PEP concept could facilitate its spread within communities. The idea of "taking medication after a higher-risk contact to reduce the risk of bacterial STIs" was intuitive, particularly for people familiar with HIV PrEP or PEP, and could quickly become a topic of discussion in online chats or informal settings. The same simplicity also had a potential downside: if Doxy-PEP circulated merely as "an antibiotic after sex", without explanation of the limits and frequency of use, it could be interpreted as an arbitrary response to any perceived risk. Community communication therefore requires simple language without oversimplifying the clinical rationale.

Positive attitudes among friends or within the community were not sufficient on their own to establish trust in Doxy-PEP. Respondents expected balanced information in which potential benefits were accompanied by honest explanations of limitations, adverse effects, AMR, compatibility with other medications and the situations in which Doxy-PEP was genuinely appropriate. For some participants, overly optimistic or promotional communication could itself create distrust precisely because the intervention involved an antibiotic. Community support could make the medication more familiar and less stigmatised, but sustained trust depended on discussing it as a serious prevention option governed by clear rules.

"I think there should be honest information about all the advantages and disadvantages. Even if there are risks or unpleasant aspects, people need to be told about them honestly."

TGW, Kyiv, on PrEP, chlamydia, aged 36

"As for information being spread by the community – it isn't always good when something is promoted by the community. There've been cases where people said, 'Yes, it's all great, it's cool,' and then after some time negative situations came to light. I'd probably trust a doctor more."

MSM, Lviv, planning to initiate PrEP, no target STIs, aged 21

The most substantial social barrier was likely to be the risk of an unfriendly or stigmatising medical encounter rather than the reaction of friends. For some MSM, reluctance to discuss sexual practices or condomless sex with a doctor was linked to anticipated judgement or intrusive questions. For TGW, this barrier was broader – several interviews referred to stigmatising or inappropriate treatment by healthcare workers. Such experiences did not make Doxy-PEP unacceptable as an idea, but could complicate access if obtaining it required interaction with a professional perceived as unsafe or incompetent.

"I sought care for an STI and couldn't even say that I had sex with men because I was afraid of being judged. There were far too many inappropriate questions about how I'd become infected: 'Where did you manage to pick that up? Do you even know what contraception is? I haven't seen anything like this in a long time. Where did you find it?' You go to a doctor for treatment and leave feeling as though you've been interrogated."

MSM, Lviv, planning to initiate PrEP, gonorrhoea, aged 22

"I had an ultrasound and went to a urologist. It was just awful! Can't you treat me normally? Yes, I'm a woman, yes, I have a penis, but I need to be examined."

TGW, Odesa, on PrEP, chlamydia, aged 26

Broader societal stigma could affect how Doxy-PEP was interpreted outside friendly or LGBT community settings. Respondents did not necessarily anticipate stigma attached specifically to Doxy-PEP, which remained a relatively unfamiliar approach, but clearly recognised that STIs, homosexuality, transgender identity and sexual behaviour remained taboo and stigmatised topics. An "antibiotic after sex" could be interpreted as a marker of uncontrolled sexuality or membership of an LGBT community – particularly for people who did not want to disclose their sexual orientation, gender identity or use of preventive medication to family members, employers or their wider social circle. Participants who described themselves as "open", however, generally said that they had learned to live with stigma and that negative comments would not influence their decision to use the medication.

Overall, social and interpersonal influences were more likely to support the potential acceptability of Doxy-PEP than to prevent it. The most favourable conditions were a supportive close social circle, pragmatic attitudes among friends and partners, community openness to sexual health topics, and opportunities to hear about other people's experiences. The main risks arose where Doxy-PEP could become a marker of stigmatised sexuality, create tension within stable partnerships, spread through overly simplified messages or require contact with an unfriendly healthcare environment. The social acceptability of Doxy-PEP therefore depends on whether information can circulate through trusted, confidential and sufficiently competent networks as an honestly explained prevention option.

4.3. Service providers' and stakeholders' perspectives on Doxy-PEP

4.3.1. Professional awareness and existing practices

Healthcare providers, professionals from HIV-service NGOs, CLO representatives and stakeholders approached discussions of Doxy-PEP from different starting points. These differences reflected both their level of awareness and the settings in which they had encountered the subject of antibiotic prophylaxis. For some doctors involved in PrEP and ART provision, Doxy-PEP was already familiar through international guidance, professional discussions or questions from patients following condomless sex. For infectious disease specialists and dermatovenereologists, the starting point was often doxycycline itself as a well-known medication used in the management of Lyme disease, acne, chlamydia or syphilis. Among NGO professionals and CLO representatives, familiarity with Doxy-PEP often developed through practical questions from clients: what could be done after a higher-risk contact, whether an antibiotic might help, and when they needed to see a doctor. These differences in awareness were even more apparent among stakeholders: national HIV and PrEP experts were more likely to recognise Doxy-PEP as an intervention under international discussion, while some regional professionals working in surveillance, AMR or broader infection prevention regarded it as a new or peripheral topic.

"We heard about Doxy-PEP during training organised by [international organisation name], where a doctor from the United Kingdom had been invited. She was asked what she thought about Doxy-PEP. She was also very cautious in her predictions: perhaps we still don't know whether resistance will develop, and time will show how rational this approach is."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (2)

"To be honest, I looked for some Ukrainian protocols or standards, but I couldn't find anything, so I can't say that I have any information."

Stakeholder, Lviv, government, programme, 10–19 years' experience

"Recently, people have been asking how they can protect themselves against STIs and where they can obtain Doxy-PEP because they've read that this medication exists."

CLO, national, advocacy, 20+ years' experience (2)

The analogy with preventive doxycycline use following possible exposure to Lyme disease helped some healthcare providers accept the idea of taking an antibiotic after a risk event. They nevertheless quickly recognised the limits of this analogy: a tick bite is a relatively clear, isolated event, whereas sexual risk may recur and involve several partners, sex parties, chemsex or a series of contacts within a short period. Their questions therefore shifted from whether antibiotic prophylaxis was possible in principle to where the boundary lay between occasional post-exposure use and frequent repeated dosing that would require diagnostics and broader prevention support.

"The same type of prevention is used for Lyme disease. If a tick bites you, you take two doxycycline tablets. That's normal and is, again, included in international recommendations. But a person isn't bitten by ticks as many times as they might have unprotected sexual contacts. So everything here needs to be approached very cautiously."

Infectious disease specialist, Lviv, public HCF, <5 years' experience

Within HIV-service NGOs, awareness of Doxy-PEP was greatest among staff who regularly handled clients' post-exposure questions. Social workers involved in PrEP counselling, outreach or communication following higher-risk contacts were more likely to connect Doxy-PEP immediately with familiar working situations: a client messages after condomless sex, asks about an antibiotic, sends a photograph of symptoms or does not know when testing will be informative. Other NGO professionals heard about Doxy-PEP for the first time during the interview or were familiar only with related practices – using antiseptics, taking antibiotics without medical advice or the general logic of "doing something after contact". For NGOs, the need was not simply to receive information about the dose, but to learn how to distinguish Doxy-PEP from STI treatment, random advice found online or self-treatment.

"I explain that PrEP only protects against HIV. This pre-exposure therapy doesn't protect against syphilis or other STIs. For many people, that's a revelation. And that's when doxycycline comes into the conversation – that there's post-exposure doxycycline therapy: a 72-hour window to reduce the risks."

NGO, Lviv, client support, <5 years' experience

CLOs added a community dimension to this uneven awareness of Doxy-PEP. Some representatives had learned about Doxy-PEP through international guidance, conferences or partner networks, while others had only a general understanding or had rarely encountered the topic in their work. CLO representatives nevertheless made clear that information about Doxy-PEP could spread through channels beyond doctors and official materials, including online chats, peer counsellors, social media and informal advice. This created a dual requirement for implementation: information had to be simple enough to circulate within communities, but not so simplified that Doxy-PEP was reduced to the formula "an antibiotic after sex".

"The community is quite well educated. It's no longer mainly about doctors' recommendations. Google helps, artificial intelligence helps. All these things like Doxy-PEP are known from Europe. Our community is very well informed and absorbs these Western trends immediately."

CLO, national, community programme coordination, 20+ years' experience

Informal antibiotic use after sex was an important context through which professionals assessed Doxy-PEP. Healthcare providers and NGO professionals described both potential future demand for a new prevention option and existing self-managed practices: buying an antibiotic from a pharmacy after a higher-risk contact, asking for a prescription, taking medication on the advice of acquaintances, following regimens found online, or combining doxycycline, ceftriaxone and other medications. Dermatovenereologists were particularly cautious about these practices because they were more likely to see the consequences – incomplete treatment, an obscured clinical presentation and unsuccessful self-treatment. NGOs described the other side of the same issue: some clients arrived with their own idea of an "antibiotic after sex". In this context, the challenge for Doxy-PEP is less to create an entirely new culture of antibiotic use than to bring structure to practices already developing without a protocol.

"They all know ceftriaxone and doxycycline. If it's the weekend, you can't see a doctor… They just inject something or take doxycycline. I view that negatively because they don't know how to do it properly, and it can obscure the clinical picture."

NGO, Kyiv, programme coordination, 10–19 years' experience

"Sometimes people come to us with questions like that, but our direct answer is that if you inject anything without medical supervision, you take personal responsibility for it. Some people don't even want to see a doctor. It's easier to go to a pharmacy, buy something familiar, inject it and be done with it."

CLO, Lviv, community navigation, 5–9 years' experience

"Sometimes patients took doxycycline immediately after contact, one tablet twice a day. Some of those who wanted to be extra cautious took it for up to five days because they thought that would be more reliable. There'd been a risk, they started worrying, and thought, 'The more I take, the greater the guarantee.'"

Family physician, Lviv, public HCF, 20+ years' experience

Some services were already responding in practice to requests concerning Doxy-PEP, although no single Ukrainian algorithm was available. Doctors described patients asking whether they were still within the window for taking doxycycline after condomless contact, requesting prescriptions or seeking advice before anticipated higher-risk situations. Some professionals already explained the dose, timing window and frequency of use, relying on international guidance as the only available legitimate basis. The absence of a shared framework nevertheless made practice inconsistent: some doctors moved towards recommending doxycycline before anticipated exposure or suggested combined regimens, while others declined to provide it without a national protocol. NGOs and CLOs encountered this demand at the point of first contact – in an online chat, after a party or once symptoms had appeared. Demand for Doxy-PEP is already present within the service environment, but responses remain inconsistent and dependent on individual professionals or organisations, creating a risk that the evidence-based post-exposure regimen will be mixed with broader informal practices.

"People do contact me about Doxy-PEP. Our patients are quite advanced and ask about it themselves. I even issue prescriptions. When they call and ask whether there's still time to take doxycycline, I say yes, and if they need a prescription, I send it through Viber."

Infectious disease specialist, Lviv, public HCF, 10–19 years' experience (1)

"I know of at least one service provider that openly says they've already tried this practice. But I know for certain that it also exists across a broad network of doctors who have simply taken the CDC protocol and started implementing it."

Stakeholder, national, international organisation, programme, 20+ years' experience

"We aren't permitted to dispense doxycycline prophylactically. If MSM or other patients ask me how they can prevent infection, in about half of cases I advise them to do it 24–48 hours before contact: 200 mg of doxycycline per day. So I mainly recommend prophylaxis 'before'."

Infectious disease specialist, Lviv, public HCF, 10–19 years' experience (2)

Professional role shaped which aspects of Doxy-PEP became visible first. Doctors working in HIV services viewed it as an extension of biomedical prevention and a possible addition to PrEP or ART care. Dermatovenereologists focused more on diagnostics, symptoms, self-treatment and the risk of losing the distinction between prevention and treatment. NGO professionals assessed Doxy-PEP through the client pathway: whether the person would reach a doctor, feared TRSSCs or could obtain the medication within the timing window. CLOs drew attention to trust, community legitimacy and labelling. Stakeholders added a system-level perspective: whether there was a national basis for the intervention, how Doxy-PEP could be linked to STI surveillance and AMR, who would be responsible for clinical decisions, and how to avoid creating a poorly controlled parallel practice.

Doxy-PEP is therefore already partly present within professional and service settings, but knowledge remains uneven and fragmented. For some actors, it is an internationally recommended form of post-exposure prophylaxis; for others, a new use of a familiar antibiotic; for NGOs, a response to clients' real post-exposure questions; for CLOs, information that may spread quickly through communities; and for regional experts, a topic that still needs to be incorporated into existing mechanisms for infection control and rational antibiotic use. Before piloting, a shared framework is needed to explain what the intervention is and is not, who may prescribe or explain it, how it relates to testing, PrEP, STI treatment and AMR, and how to prevent an evidence-based regimen from being reduced to informal advice to "take an antibiotic after sex".

4.3.2. Perceived relevance and added value

Respondents most often described the relevance of Doxy-PEP in relation to the gap between relatively well-developed HIV prevention and the much less structured prevention of bacterial STIs. For doctors providing PrEP and ART, this gap was visible in everyday practice: people could use PrEP, have their HIV risk under control and test regularly, while continuing to have condomless contacts, recurrent STIs or anxiety after sex without a condom. For NGOs, it appeared through questions from clients who already knew about HIV PrEP or PEP but had no clear post-exposure option for syphilis, chlamydia or gonorrhoea. Stakeholders viewed the same gap more broadly: the HIV system has standards, medication, pathways and support, while STI prevention remains fragmented, less well funded and less integrated into routine work. PrEP had normalised the concept of biomedical prevention but had not addressed bacterial STIs, and this unresolved part of sexual risk made Doxy-PEP understandable to many professionals.

"The community sees it as part of pre-exposure prevention, as a component of PrEP. People use pre-exposure prophylaxis to avoid acquiring HIV, they don't use condoms, and they use Doxy-PEP as post-exposure prophylaxis for STIs. It's a combined approach."

CLO, national, community programme coordination, 20+ years' experience

"I was involved in a PrEP pilot project, and we tested everything – the oral cavity, the anus for STIs, PCR tests, syphilis, gonorrhoea and trichomoniasis. Over six months, the number of STIs among one hundred people increased by 30%... The guys relaxed completely and decided that if everything else was treatable but HIV wasn't, and they were protected against HIV, then that was it… The STIs took off."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (1)

Syphilis was the STI through which the need for additional prevention most often became visible to HIV and NGO services. This visibility partly reflected the integration of rapid syphilis testing into many HIV, PrEP and NGO pathways, making syphilis more likely to be detected during routine service provision and to become an argument in favour of Doxy-PEP. At the same time, this visibility partly resulted from the availability of testing rather than necessarily indicating a higher prevalence than other STIs. Gonorrhoea and chlamydia, by contrast, often remained less visible in routine practice, although both are important in assessing the need for Doxy-PEP. Diagnosing these infections requires laboratory services, swabs or samples from different anatomical sites and therefore money, time, logistics and willingness to discuss specific sexual practices with a healthcare professional. Some professionals consequently viewed Doxy-PEP as a way to address part of the post-exposure risk, while emphasising that the true STI situation would remain incomplete without better diagnostics for gonorrhoea and chlamydia.

"The number of syphilis cases has increased – almost doubled – because clients take PrEP to avoid acquiring HIV, while other infections are now circulating freely."

NGO, Kyiv, programme coordination, 10–19 years' experience

Doxy-PEP was also viewed as a way to provide a structured response to post-exposure anxiety among MSM and TGW. Healthcare providers described patients wanting to know what else could be done following condomless sex, contact with a new partner or a sex party. NGOs encountered these situations earlier in the pathway: clients messaged at night, asked about risk, requested support or did not understand when testing would become informative. CLO representatives added that these questions did not arise only through formal appointments, but also in online chats, safe spaces or conversations with peer counsellors. In such situations, the value of Doxy-PEP lies in the possibility of turning an anxious post-exposure question into a clear pathway in which a counsellor or social worker knows how to direct the person rapidly towards a medical decision.

"Sometimes it helps reduce patients' anxiety, and it gives them a way to feel more comfortable. I've had patients who bought doxycycline and then didn't have any of those frightening contacts for a whole year… There's some reassurance in knowing that the pill is there and everything is fine, so they feel more comfortable and calmer mentally."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (1)

For some respondents, the value of Doxy-PEP also lay in potentially reducing the need for STI treatment and the associated costs in time, money and stress. Healthcare providers discussed repeat visits and possible complications, while NGOs observed another aspect: clients needed to find a friendly doctor, pay for laboratory testing, explain their sexual experience and sometimes overcome fear of disclosure. CLOs emphasised that for people concealing their identity or with negative experiences of healthcare, the act of seeking STI treatment could itself be a barrier. Post-exposure prophylaxis was therefore viewed as a potential means of reducing the number of difficult and stigmatising contacts with the healthcare system.

"If you consider how long it takes to treat gonorrhoea or syphilis – how many examinations are needed, the injections, follow-up after three months, registration with a dermatovenereologist... But if the patient receives post-exposure prophylaxis, they won't become ill and won't need me for treatment. It's an investment in the future."

Infectious disease specialist, Kyiv, private HCF, 5–9 years' experience

"They go to NGOs to look for solutions because treatment isn't actually that free at the moment. On paper it's free, but in practice it isn't. That's another barrier because not everyone can go to a healthcare facility now. So syphilis is largely undiagnosed, and there are many cases."

CLO, national, community programme coordination, 10–19 years' experience

Respondents noted that some people already live in a reality where condoms are used inconsistently, PrEP or an undetectable viral load reduces fear of HIV, and bacterial STIs are regarded as curable or less threatening. In this context, advice to "just use condoms" does not always correspond to actual practices. Doxy-PEP may be useful precisely because it operates within this reality rather than requiring ideal behaviour. Its added value therefore depends on communication: Doxy-PEP should be presented as an additional risk-management tool rather than a substitute for condoms, testing or clinical care.

"If someone has been treated for syphilis, some time passes and they become infected again, they assume they'll simply be treated again. It's a dismissive attitude towards their own health – they think that because it's curable, there's no need to protect themselves."

NGO, Lviv, client support, <5 years' experience

"Doxy-PEP is more of an additional option. We can't force people to use condoms. From twenty years of work and observation, I can conclude that there will always be people who use them and people who don't... So this is more about knowledge and additional options."

Stakeholder, Lviv, government, programme, 10–19 years' experience

"The person isn't going to use a condom anyway. No matter what we say or how much we lecture them, they say, 'It doesn't feel the same!' That's the most common answer. It doesn't feel the same… Is there a risk? Yes. If this helps stop the spread of STIs, then I support it."

CLO, national, community programme coordination, 20+ years' experience

Doxy-PEP could also provide an additional entry point into friendly services and help bring some clients into more regular contact with the sexual healthcare system. Healthcare providers saw it as an opportunity to engage people at risk of STIs who did not necessarily seek care through HIV or PrEP services. NGOs and CLOs described clients who approached them for condoms, self-tests, hormones, psychological support or an opportunity to speak without judgement – and discussing Doxy-PEP within these pathways could create an opportunity to address STIs, PrEP, chemsex or willingness to undergo testing. For less open MSM, TGW or people with negative experiences of the healthcare system, it could provide a route into broader sexual healthcare through a trusted community space.

"Every new service can attract more people and retain those who have long been involved in prevention or may disengage because the services have become outdated. If, for the tenth time, we talk only about HIV transmission routes and correct condom use, the person will eventually leave us; it's only a matter of time. Doxy-PEP is something new that will attract the attention of new clients or help us retain existing ones."

CLO, national, advocacy and community expertise, 5–9 years' experience

"We prescribe pre-exposure prophylaxis and ART, and if Doxy-PEP were available as an additional service, some people might be motivated to seek care not only because of HIV, but specifically because of STIs. The more services and the broader the range of services, the greater the opportunity to engage patients."

Family physician, Lviv, public HCF, 20+ years' experience

At the public health level, stakeholders saw potential value in reducing the incidence of some bacterial STIs and making better use of existing PrEP and HIV pathways, although these expectations remained cautious. National and regional experts did not always have sufficient local data to assess the actual burden of STIs among MSM and TGW, while respondents focused on AMR emphasised that the benefits of any antibiotic prophylaxis needed to be weighed against the risks of frequent use. Doxy-PEP was not regarded as a guaranteed system-level solution, but rather as an intervention with plausible benefits that required testing under Ukrainian conditions.

"You could draw an entire theory of change here, but the first immediate outcome is reduced STI incidence. That main outcome is enough – a reduction in incidence."

Stakeholder, national, academic, research and analysis, 20+ years' experience (2)

None of the groups regarded Doxy-PEP as a self-contained answer to all sexual health needs. Healthcare providers repeatedly returned to its limits: Doxy-PEP should not replace STI testing, diagnosis and treatment. NGOs emphasised the gap between need and demand: STI risk may be high, but clients do not always view it as a priority amid war, humanitarian needs, fear of travelling around the city or distrust of doctors. CLOs pointed to the risk that, if presented as a simple innovation, Doxy-PEP could quickly become part of a culture of self-managed prevention. Stakeholders stressed that Doxy-PEP should be incorporated into a broader continuum of services: access to condoms, regular testing, STI diagnostics and a clear treatment pathway. Its added value therefore depends both on clinical appropriateness and on whether it is explained as a limited, targeted tool linked to existing services.

"It can't be the case that someone receives pre-exposure prophylaxis but doesn't have access to condoms or STI diagnostics. This needs to be a single package. If we don't conduct regular STI screening, we don't detect infections in time, don't initiate treatment and create conditions for further STI transmission."

Stakeholder, national, international organisation, programme, 20+ years' experience

"We still need to return to the good old condom and explain the benefits of barrier prevention. This educational component is needed so that people understand that the magic pill isn't actually so magical. Doxy-PEP works against syphilis and chlamydia, but doesn't cover gonorrhoea as well. And again, these infections can also develop resistance."

CLO, national, advocacy, 20+ years' experience (3)

The added value of Doxy-PEP lies in its response to a specific gap between well-developed HIV prevention and less structured prevention of bacterial STIs. For healthcare providers, this value relates to recurrent STIs, post-exposure questions and the possibility of preventing an infection before treatment becomes necessary. For NGOs, it lies in providing clients with a rapid and safe response after a higher-risk situation. For CLOs, it offers a way to discuss realistic risk management without moralising or stigma. For stakeholders, it has the potential to integrate STI prevention into existing HIV infrastructure, but only if it is piloted, linked to diagnostics and supported by clear programme management. In this sense, Doxy-PEP appears relevant as a targeted tool for recurrent or higher-risk situations in which post-exposure action can be incorporated into a broader sexual healthcare pathway.

4.3.3. Target population, candidacy and limits of appropriate use

Respondents most often defined candidacy for Doxy-PEP through a combination of group-level vulnerability, specific sexual risk, previous STIs and the person's ability to remain engaged in care, rather than through membership of a particular population alone. MSM were most frequently identified as the most apparent initial group because respondents saw several relevant conditions converging among them: greater representation in PrEP services, more regular discussions of condomless sex, repeated syphilis testing and established NGO and CLO pathways. Even when MSM were described as the first group for implementation, however, professionals rarely reduced candidacy to identity alone. Recurrent exposures, previous STIs, frequent changes of sexual partners, chemsex, group sex and willingness to engage with services were also important. Group membership could help identify potential users, but did not replace an assessment of actual risk.

"We consider this in terms of behavioural characteristics rather than identity. What makes these populations vulnerable to HIV and STIs is certain sexual practices. A large number of partners, group sex, sexualised drug use. Regardless of how the person identifies, we need to screen for behaviours that increase risk. We're interested in people with higher-risk behaviours. Any selection of a target population needs to be justified by risk and the need for the service."

Stakeholder, national, NGO, research and analysis, 20+ years' experience

"We see infections occurring through less typical routes. For example, gonorrhoea was acquired through the anus rather than the urethra. That already indicates higher-risk behaviour. This person and their sexual partners could be potential recipients. On the one hand, the process needs to be standardised; on the other, it needs to be individualised."

Stakeholder, national, international organisation, programme, 20+ years' experience

TGW were considered a distinct potential population for Doxy-PEP, although their visibility across the interviews was uneven. Some healthcare providers, NGOs and CLOs described TGW as a population in which STI risk may intersect with barriers to friendly healthcare, experiences of stigma, paid sexual services, hormone therapy and the need for a confidential pathway. Others spoke less confidently about TGW or effectively incorporated them into a broader service model for MSM. This itself reflected a service-related risk: if Doxy-PEP is communicated only through the category of MSM or "male" sexual behaviour, some TGW may not recognise themselves as potential users or may again enter a pathway in which their gender identity is not acknowledged. A parallel approach therefore appeared more convincing: MSM and TGW may share some risks, but require gender-appropriate pathways with distinct communication.

"This information about Doxy-PEP needs to be taken there. Among transgender women involved in sex work – that was also one of the reasons why, in 2024, the Ministry of Health recognised trans people as a key population at risk of HIV transmission."

CLO, Odesa, community programme coordination, <5 years' experience

"Trans women are very closed off. Even social workers who are MSM themselves and work with MSM say that they find this population rather difficult to reach."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (2)

"In practice, many trans people don't want to have sex until they've had surgery because that's important to them. But if someone needs to be referred to an infectious disease specialist or urologist, that becomes a problem. The standard prevention package designed for MSM doesn't suit trans people. PrEP is prescribed for MSM, but we don't know how PrEP and hormone therapy interact. It's the same with ART – an endocrinologist is additionally needed."

NGO, Kyiv, client support and programme coordination, 5–9 years' experience (1)

A separate programmatic complication was that TGW's access to some HIV-service pathways could depend on formal project categories or identity documents. NGO and CLO respondents noted that TGW might be included in an HIV-service project only when their documents recorded male sex, while people who had changed their documents, non-binary people or those who did not fit the binary logic of programmes risked falling outside the available categories. For Doxy-PEP, this means that access criteria need to be risk-based and gender-appropriate rather than tied solely to a gender marker or the way people are recorded within programmes.

"One of our mandatory conditions is that the documents indicate male sex. That's the only way we can include trans women in the project. The organisation also works in human rights, and that's where we see how some trans people simply don't meet the criteria because of their documents."

NGO, Kyiv, client support, <5 years' experience (1)

Determining candidacy in practice was complicated by the fact that sexual orientation, gender identity and sexual practices were not always discussed openly. Some healthcare providers emphasised that they could not always directly ask whether a person was MSM or belonged to a trans community if the person had not disclosed this information or might perceive the question as stigmatising. NGOs and CLOs confirmed that some MSM and TGW lived discreetly, did not use friendly services regularly, distrusted doctors or feared that a specialised pathway might become a marker of their identity. Candidacy assessment therefore needs to rely on a sensitive discussion of sexual practices, partnerships, previous STIs and condomless contacts rather than assumptions based on appearance or formal group membership.

"We have situations where a patient comes in with a positive syphilis test. The stigma is that he doesn't want to disclose how he became infected. Because if he says, 'From a man,' that's already a marker. So they often say something neutral."

Infectious disease specialist, Lviv, public HCF, <5 years' experience

"If we're talking about something that makes your membership of a key population visible before it's accepted… Many trans people don't accept themselves because society doesn't accept them. Many MSM don't accept themselves and remain closeted because society doesn't accept them. If you push a person into making their 'weak spot' visible – no, you can't do that."

CLO, national, community programme coordination, 10–19 years' experience

Some professionals understood candidacy more broadly than the initial focus on MSM and TGW. Their responses mentioned sex workers of different genders, people with frequent condomless contacts regardless of sexual orientation, patients with recurrent STIs, internally displaced people who had lost their usual healthcare pathways, and survivors of sexual violence, including conflict-related sexual violence. This approach reflects a tension between targeting based on group membership and assessing a specific risk. A broader approach may be more equitable, but requires clear limits; otherwise, Doxy-PEP could become an antibiotic used after any anxiety-provoking sexual situation. Despite recognising a potential need to expand coverage, the experts interviewed did not consider it realistic for Ukraine to conduct its own clinical studies of effectiveness among additional populations.

"I consider it a discriminatory approach. This prevention should be available to someone because they have risks, not because they belong to a particular population. There's simply more evidence for MSM and TGW because the studies were conducted among them. That's a sampling bias in terms of the populations studied."

Stakeholder, national, international organisation, programme, 20+ years' experience

"People who have experienced conflict-related sexual violence – that's the first group. Second, there's a population that hasn't exactly fallen out of view, but is overlooked: forcibly displaced people who, because of financial difficulties, have to provide sexual services. Nobody talks about that."

CLO, national, community programme coordination, 5–9 years' experience

"If we have evidence showing that this is appropriate and effective for other populations, I'm sure there'll be no problem targeting them as well. Unfortunately, Ukraine isn't a country with unlimited resources that can spend large amounts on research. Ukraine could participate in international studies. But I don't really believe Ukraine could initiate and conduct them independently because resources are limited."

Stakeholder, national, international organisation, programme, 10–19 years' experience

PrEP users appeared to be the most practical initial population for piloting, but PrEP use alone was not considered a sufficient condition for prescribing Doxy-PEP. PrEP provides a convenient pathway: the person is already in contact with a doctor or NGO, undergoes regular testing and has experience of taking preventive medication. However, not every PrEP user has the same risk of bacterial STIs, and not everyone at high risk uses PrEP. NGOs and CLOs clearly indicated that PrEP should not become an access filter because some people at high STI risk may engage with services through ART, sex work, psychosocial support or trans-specific needs. PrEP was therefore viewed as the most readily available point of entry rather than a criterion in itself. People living with HIV also appeared within the candidacy logic, although less consistently. From the perspective of bacterial STIs, someone receiving ART may have the same risks: condomless sex, multiple partners, chemsex, recurrent STIs or paid sexual contacts. For HIV doctors, this creates an opportunity to discuss Doxy-PEP within an existing care pathway, but only where there is an actual STI risk and prevention can be explained without being confused with ART or HIV PEP.

"In fact, HIV-positive MSM can also benefit from doxycycline and STI prevention programmes."

CLO, national, advocacy and community expertise, 5–9 years' experience

Chemsex and psychoactive substance use were among the most consistently identified behavioural markers of candidacy, while also indicating greater complexity in Doxy-PEP use. NGOs, CLOs and some healthcare providers described chemsex as a context in which condoms might be used inconsistently, the number of partners might be higher, memory of events might be incomplete, and contact with services might be delayed. CLOs emphasised that during the war, chemsex may be linked to stress, a need to "escape" the wartime reality and reductions in harm-reduction programmes. Doxy-PEP may appear especially useful in these situations, but chemsex also increases the risk of frequent, chaotic or incorrect use and requires broader support: harm reduction, counselling about substance use, testing and opportunities to discuss sexual risk without judgement.

"Our chemsex programme for men who have sex with men was closed. This is particularly relevant during the war because the more stressed people are, the more likely they are to have unsafe sex. And they often use club drugs during sex."

NGO, Kyiv, client support, <5 years' experience (1)

"Using different substances that affect your awareness… There'll be a question about when the clock starts. If I don't remember exactly when the sexual contact happened and I'm unsure – is this hour 65 or hour 75? That starting point is the first question. The second is that the sexual contact lasted three hours. From which point do we count the 72 hours? I had five partners in one night and five ejaculations – which one do I count from? The first or the last?"

CLO, national, community programme coordination, 20+ years' experience

Paid or transactional sex, including within MSM and TGW populations, was also considered a possible marker of elevated risk, but not an automatic basis for prescribing the medication. Respondents associated these practices with more partners, a weaker negotiating position regarding condoms, dependence on clients and substance use. CLOs and NGOs were particularly sensitive to the risk of stigma: if Doxy-PEP were presented as a "medication for sex work", it could deter people or reinforce labelling. Paid sex is therefore one of the contexts in which actual risk, previous STIs and control over the conditions of the contact should be assessed rather than the medication being prescribed automatically.

"Some clients enter sex work not because they like it, but because they have no other source of money. They test more often and seek prevention more often because in sex work it's also about safety for the client."

NGO, Kyiv, client support, <5 years' experience (1)

The wartime context complicated the assessment of candidacy by creating new or intensified vulnerabilities without always providing clear epidemiological criteria. Stakeholders and regional professionals referred to internally displaced people, military personnel, residents of frontline areas, disrupted healthcare pathways, stress and fear of approaching official institutions. The wartime context is more appropriately understood not as an independent criterion for Doxy-PEP, but as a factor that can alter both risk and access. Someone may be a candidate not because they are internally displaced or serving in the military, but because wartime circumstances in their particular situation intersect with condomless sex, recurrent STIs or an inability to obtain medical care quickly.

> *"I see Doxy-PEP working well in settings where people don't have normal access to condoms, testing or doctors. For this population, of course, Doxy-PEP would be an excellent option because people have no other option. But if condoms and testing are available, I'd still recommend using those preventive measures. Because Doxy-PEP, I'd say, is more of an emergency option."*
>
> *CLO, national, advocacy, 20+ years' experience (3)*

Medical limitations and "red flags" were discussed less systematically than behavioural criteria, but established an important boundary for appropriate use. Respondents mentioned allergy or intolerance to tetracyclines, childhood, severe liver or kidney impairment, complex chronic conditions and possible interactions with other medications. Most of these factors did not necessarily mean automatic exclusion, but reinforced that candidacy could not be determined by a social worker or the individual alone. All respondent groups emphasised the need for medical assessment, particularly where there were comorbidities, symptoms or frequent repeated antibiotic use.

> *"If someone has previously had an allergic reaction to the medication or any medication in the same class, we won't use Doxy-PEP. The same applies to people with acute kidney or liver failure. If someone has substantial impairment of kidney or liver function, the decision about prescribing it should be considered with a doctor."*
>
> *Stakeholder, national, government, programme, 5–9 years' experience*

Frequency of use was the most difficult boundary. People with the most recurrent risk may derive the greatest benefit from Doxy-PEP, but may also take it most often. Respondents could not always identify an exact threshold for excessive use, but nearly all groups viewed repeated requests as a signal for further assessment: for healthcare providers, a review of candidacy and testing; for NGOs, an exploration of the reasons for frequent higher-risk situations; and for CLOs, a risk that the medication was becoming a routine strategy without support. Frequency therefore emerged less as an absolute restriction than as the point at which individual benefit, AMR risks and the need for broader support intersected.

> *"If, for example, we take a married man who occasionally has sex outside the relationship – that's one situation, perhaps once a month or with some other limited frequency. If someone has several partners and several encounters every week, then you need to explain when and how to use Doxy-PEP. And that could be more complicated."*
>
> *CLO, national, advocacy, 5–9 years' experience*

> *"If there are people providing sexual services – and there are such people among MSM and TGW – will there be misuse, and what adverse effects will occur if they take this medication frequently? Will it still work if it's used often? I understand that you could calculate taking two pills once every three days, supposedly covering all 18 of your clients. But I also understand that this is nonsense. So explanations will probably be needed."*
>
> *NGO, Lviv, client support and programme coordination, 20+ years' experience*

Candidacy for Doxy-PEP therefore emerged at the intersection of three forms of reasoning. The first was clinical: previous STIs, condomless contacts, symptoms, contraindications and the need for testing. The second was service-related: whether the person had genuine access to a friendly doctor, NGO, laboratory and continued engagement with the system. The third was community and social: whether the criteria avoided stigmatising MSM, TGW, sex work or people who lived discreetly. Doxy-PEP appeared most justified for people with recurrent or high risk of bacterial STIs who could receive medical assessment, take the medication within the timing window and remain engaged in testing and support. At the same time, the criteria need to be formulated carefully enough to provide access to those who may benefit without turning Doxy-PEP into a stigmatising or uncontrolled practice.

4.3.4. Professional reservations and conditions of acceptability

Reservations about Doxy-PEP rarely amounted to outright rejection of doxycycline post-exposure prophylaxis. Most healthcare providers, NGO professionals, CLO representatives and stakeholders saw potential benefits for people with recurrent or high risk of bacterial STIs. Almost every positive assessment, however, was accompanied by conditions: Doxy-PEP should be clearly distinguished from self-prescribing, should not be used after every sexual contact, should not replace testing, and should not turn a familiar antibiotic into an easily accessible medication taken "just in case". The main tension lay between an evidence-based prevention regimen and existing or potential practices of uncontrolled antibiotic use after sex.

"What's unacceptable is uncontrolled self-prescribing and taking the medication without seeking medical care. It's unacceptable because if someone takes this medication every two days, every time, then we all understand that after some time it simply won't work."

Stakeholder, Odesa, government, research and analysis, <5 years' experience

"People in Ukraine are very clever: first they treat themselves online or ask AI for medical advice, and then, when something goes wrong, they go to doctors. Antibiotic sales in pharmacies are still uncontrolled. They either don't ask for a prescription or simply take your word for it."

Infectious disease specialist, Kyiv, private HCF, 10–19 years' experience

AMR was the strongest system-level concern, although respondents interpreted it in different ways. Some discussed AMR generally in relation to the existing overuse of antibiotics in Ukraine. AMR specialists were more specific: the risk should be assessed not as an abstract fear, but in relation to the particular medication, pathogens, frequency of use and existing susceptibility data. Most respondents were more comfortable with the idea of a single dose after a specific risk than with regular antibiotic use. Doxy-PEP was therefore not rejected automatically because it involved an antibiotic, but neither could it be introduced without a clear management framework.

"Speaking simply as a person, setting aside the fact that I'm an AMR specialist, it's a good idea. But it needs to be agreed with a doctor. Regular self-administration of an antibiotic can lead to resistance. If it's a one-off emergency situation, that's fine."

Stakeholder, Lviv, government, programme, <5 years' experience

"Concerns about the development of antibiotic resistance related more to the idea of pre-exposure prophylaxis. In my view, that's already the wrong approach."

Stakeholder, national, international organisation, programme, 20+ years' experience

"Every doctor immediately thinks, 'Resistance, oh no, we're going to lose doxycycline.' But that's more of an emotional reaction than an evidence-based one. We can prove it only when we see the statistics, and we don't have them."

Stakeholder, Lviv, government, programme, 10–19 years' experience

Views on doxycycline itself as the basis of Doxy-PEP were mixed. For some doctors, its familiarity was an advantage: it had a well-understood safety profile and was readily used in clinical practice. For others, the same familiarity created caution because people could obtain the medication easily or keep tablets left over from previous treatment. Experts focused on AMR added that doxycycline should not be described as a "reserve" medication or treated as automatically prohibited – within rational antibiotic use, it is considered an Access group antibiotic. Its relative accessibility and familiarity nevertheless make clear criteria, frequency limits and links to medical assessment particularly important.

"Doxycycline is the first medication in dermatology that we prescribe for daily use, both for acne and for severe sexually transmitted conditions when someone is allergic to other medications."

Dermatovenereologist, Kyiv, public HCF, 20+ years' experience

"There's still no evidence that doxycycline has stopped working or that resistance is widespread. As long as the bacteria remain susceptible, we use it. That's why we perform bacterial cultures. So doxycycline itself isn't the problem."

Stakeholder, Lviv, government, programme, <5 years' experience

Gonorrhoea most often moved the discussion beyond the general acceptability of Doxy-PEP. The preventive rationale for doxycycline appeared more convincing for syphilis and chlamydia, while gonorrhoea immediately raised questions about lower effectiveness, AMR and the boundaries between prevention and treatment. Dermatovenereologists particularly emphasised the need for correct diagnosis and treatment because partial or inappropriate antibiotic use could complicate clinical management. Some national experts, however, did not regard gonococcal resistance as a static argument against Doxy-PEP, noting that the field of gonorrhoea treatment is changing and pharmaceutical development may provide new options over time.

"New medications are already being developed – zoliflodacin and gepotidacin. These will be more protected options for treating gonorrhoea."

Stakeholder, national, academic, research and analysis, 20+ years' experience (1)

"I know that studies are under way to increase the level of protection against STIs, particularly gonorrhoea. Other medications are also being developed and studied for further improvement, but for now doxycycline is the only available and recommended option."

CLO, national, advocacy and community expertise, 20+ years' experience (2)

Adverse effects and tolerability of doxycycline were generally not major arguments against the approach, but remained an important part of trust in the regimen. Most doctors described the medication as well tolerated, particularly as a single dose, although they mentioned nausea, diarrhoea, photosensitivity and differences in tolerability between manufacturers. For most, these risks appeared manageable with simple instructions. NGOs and CLOs considered it important that this information be translated from medical terminology into language understandable to an ordinary layperson. Adverse effects were therefore both a clinical and a communication issue.

"Many of my patients have been treated with doxycycline for Lyme disease. There aren't many adverse effects or allergic reactions. We rarely had to replace it, for example when a skin rash appeared. Sometimes there was nausea, but in general doxycycline is well tolerated."

Infectious disease specialist, Kyiv, public HCF, 20+ years' experience

"We always have the same risk – incorrect use. So the dosing regimen always needs to be printed in large letters on some kind of flyer."

CLO, Odesa, advocacy and community expertise, <5 years' experience

"When I tell my clients that doctors use doxycycline to treat acne and rosacea, and that they shouldn't label or fear this medication, people respond normally. But if it's simply made freely available somewhere without any explanation, that's a different situation."

NGO, Odesa, client support, 20+ years' experience

Compatibility with PrEP, ART, hormone therapy and other medications emerged as a separate condition of acceptability. PrEP users and people receiving ART needed to understand whether doxycycline conflicted with their main medications. For TGW, the issue was broader and included hormone therapy, antidepressants and medication for chronic conditions. Even where no clinically significant interactions existed, respondents noted that people needed to hear this from a trusted professional rather than feel that their overall medication burden had been overlooked. Medical consultation about Doxy-PEP was therefore regarded as essential because doctors could consider the full range of medications being taken, beyond PrEP and ART, when deciding whether to prescribe doxycycline. Healthcare providers themselves did not view interaction checking as a major obstacle because they used specialist online resources to assess whether active substances could be combined. If a patient was taking several medications, the necessary information could therefore be checked during the consultation.

"It's reassuring that this is an antibiotic prescribed by a doctor. During the consultation, the doctor can assess the medications the person is taking, possible interactions and, if necessary, suggest considering another prevention option."

Stakeholder, national, government, programme, 5–9 years' experience

"If someone takes several medications, including antidepressants, there needs to be clear information, an assessment and precise instructions about what doxycycline can and can't be taken with."

CLO, Odesa, community programme coordination, <5 years' experience

"Before prescribing it, you need to go to [online resource name], enter the name of the active substance and check the possible interactions. You go to the website, enter the international name for doxycycline and the international name of the medication the client takes, and you find the compatibility information."

Infectious disease specialist, Kyiv, private HCF, 10–19 years' experience

Behavioural compensation was raised as a concern, but not as a sufficient reason to reject Doxy-PEP. Some healthcare providers and stakeholders suggested that an additional prevention option might reduce condom use among people who already used PrEP and viewed HIV as a controlled risk. NGOs and CLOs approached this more cautiously, noting that some people already did not use condoms consistently and that the role of services was to reduce harm within actual practices rather than moralise. The risk of compensation should therefore be addressed through communication and counselling rather than through stigmatising denial of the service.

"Someone who already doesn't use condoms isn't going to start using them. So it's better to have a preventive option. The question is how to distribute it without encouraging those who were afraid of STIs to stop using condoms. That's an open question. I think the information needs to be very clear: doxycycline targets syphilis and chlamydia, but it doesn't guarantee protection against gonorrhoea. What else can we do? Lie and say that it protects against everything? If we start lying within the community, people's trust in us will be minimal."

CLO, national, advocacy and community expertise, 20+ years' experience (2)

"You can't make someone who has learned to look after themselves take off a condom… Even if you give them a thousand different types of pills and say, 'Let's do it without a condom, there's this magic pill' – no, that person already has their own system of behaviour."

NGO, Lviv, client support and programme coordination, 20+ years' experience

The reservations therefore did not negate Doxy-PEP, but defined the conditions under which it would be acceptable. Respondents generally recognised its potential benefits but consistently returned to specific boundaries: when the intervention constitutes prevention and when treatment is required; when occasional use becomes too frequent; how gonorrhoea and AMR risks should be addressed; how adverse effects and compatibility should be explained; how self-prescribing can be prevented; and how risk can be discussed without moralising. For most respondents, Doxy-PEP appeared acceptable as a controlled, clearly explained post-exposure practice linked to testing, in which medical decision-making, support from NGOs and CLOs, and clear programme management work together.

4.4. Programme and system feasibility of Doxy-PEP implementation

4.4.1. Strategic and regulatory readiness

Respondents described the Ukrainian system's readiness for Doxy-PEP as uneven: a practical foundation for a controlled pilot already exists, but a complete regulatory, diagnostic and surveillance framework has yet to be established. The most developed components were those connected to HIV prevention, PrEP, ART, testing, NGO navigation and support from CLOs. The least developed remained those related to bacterial STIs: regular diagnosis of gonorrhoea and chlamydia, routine recording of STIs among key populations, links between the private sector and surveillance, laboratory monitoring of antimicrobial susceptibility, and the practical integration of STIs into the broader AMR framework. Ukraine therefore appeared neither fully "ready" nor "unready" for Doxy-PEP, but as a system with sufficient service adaptability for a cautious pilot and insufficiently structured readiness for immediate large-scale implementation.

The HIV system was most frequently identified as the most realistic foundation for an initial phase. Even during the war, it had retained its key components: ART, PrEP, testing, collaboration with NGOs, client referral pathways, medication delivery and the possibility of receiving services outside one's place of registration. PrEP had already created a practical space for discussing sexual risk, regular visits and biomedical prevention. Doxy-PEP was therefore more often envisaged as an intervention that could build on existing HIV/PrEP/ART infrastructure than as a separate new vertical programme. This infrastructure, however, cannot automatically compensate for the weaker components of the STI system.

The most apparent system-level gap concerned both STI surveillance and the broader absence of STIs as a distinct public health priority. Respondents repeatedly contrasted relatively structured HIV surveillance with much weaker reporting of syphilis, gonorrhoea and chlamydia. STI surveillance appeared more passive, fragmented and dependent on who performed the testing, provided treatment and reported the case. Some data may remain in the private sector, some do not contain information on sexual practices or risk contexts, and some infections become visible only through active screening. Official STI indicators therefore do not always provide a sufficient basis for assessing the actual need for Doxy-PEP or planning its implementation.

"There's no national response to STIs as a separate programme. We have a clinical protocol and doctors who provide treatment directly. The range of professionals involved is quite broad: gynaecologists, urologists, sexologists and many others. I can't say that we have any kind of national STI response programme because we don't regard STIs as a public health threat."

Stakeholder, national, international organisation, programme, 20+ years' experience

"STIs are almost absent from the agenda. The HIV field developed very strongly in Ukraine because of international funding. There were Global Fund and PEPFAR grants, and this led to the development of a strong community of programme professionals, researchers, monitoring and evaluation specialists, and epidemiology. But almost all of it developed within the HIV field. STIs were addressed to some extent because they're connected to HIV, but there were no separate STI initiatives. So I don't see that specific STI expertise in Ukraine."

Stakeholder, national, academic, research and analysis, 20+ years' experience (2)

This limited programmatic visibility did not mean that individual initiatives or documents were entirely absent. Some respondents referred to pathways related to syphilis, multi-disease tests or donor-supported programmes, as well as work on a roadmap for eliminating HIV, viral hepatitis and syphilis. These examples were nevertheless more often described as partial and linked to HIV or donor-funded pathways than as a comprehensive national framework for STI prevention, diagnosis and surveillance.

"I haven't seen STIs mentioned in documents… When they are mentioned, it's usually only in relation to pregnant women. Testing pregnant women for syphilis, with more emphasis in that area. And that's all. There was one patient pathway specifically for syphilis, initiated by [donor name], because we had multi-disease tests. A pathway was therefore developed for HIV, hepatitis and syphilis. But again, it involved only the facilities receiving tests from [donor name], not the system as a whole."

Stakeholder, Lviv, government, programme, 10–19 years' experience

"A separate working group has been established to develop a roadmap for eliminating HIV, viral hepatitis and syphilis in Ukraine. The roadmap is currently being developed for approval by the Ministry of Health, after which health departments will approve their own regional roadmaps. If we look at the HIV standards, both pre-exposure and post-exposure prophylaxis are clearly set out. I think the same approach should be followed for STIs."

Stakeholder, national, government, programme, 20+ years' experience (2)

Regional professionals added a more specific picture of organisational inequality. In some regions, STI recording was described as only beginning to be rebuilt following the reform of dermatovenereology services. Some respondents referred to new or restored reporting forms, electronic reporting elements or expectations of better comparative data in the coming years. These developments, however, mainly concerned case registration rather than active risk analysis, engagement with key populations or the rapid use of information to plan a new prevention intervention. For Doxy-PEP, this means that even improved STI reporting would not automatically generate the data needed to select pilot pathways or manage risks. Doctors, NGO professionals and CLO representatives also emphasised the consequences of reorganising dermatovenereology services, including reduced access to diagnosis and treatment because of high costs.

"At present, we have almost no statistics for these conditions. Healthcare facilities no longer report STIs. They keep their own statistics, but the data don't reach us. I think this is a consequence of reforming the dermatovenereology dispensary system, which genuinely dealt with these issues. They produced reports, communicated with every healthcare facility and every relevant specialist, and collected information about each case. Reporting gonorrhoea and syphilis was mandatory. Now all of that has stopped. These infections are treated by different specialists, and they don't record them anywhere. The gap is that everyone is simply working independently."

Stakeholder, Odesa, government, research and analysis, 20+ years' experience

"We have a problem with STI clinics and dermatovenereology dispensaries, especially public ones, which probably no longer exist at all. Restructuring, optimisation – and what happened? They effectively disappeared. When separate services existed, we at least had trusted doctors. We referred people and were confident that they would receive care. After that disappeared, access to STI treatment became much more limited."

CLO, national, advocacy and community expertise, 20+ years' experience (2)

Diagnostic readiness was another weak component. Rapid tests for HIV, syphilis and hepatitis are already widely used, meaning that these infections are more often included in routine prevention discussions. Gonorrhoea and chlamydia require different diagnostic resources: laboratories, polymerase chain reaction (PCR), swabs or samples from different anatomical sites, and are therefore much less likely to be included in systematic screening. Even for syphilis, where rapid testing is already part of the PrEP pathway, the HIV standard describes it as an available option rather than a requirement, while medical professionals reported shortages of syphilis tests. Doxy-PEP therefore faces an important structural limitation: it may be relatively easy to integrate counselling into an HIV/PrEP pathway while maintaining a much weaker connection to diagnosis of bacterial STIs for which standard rapid tests are insufficient or unavailable.

"When it comes to testing for other infections, such as chlamydia or other STIs among PrEP clients, unfortunately, we can't provide these clients with free additional testing for gonorrhoea or chlamydia. Clients are asking for it, but at this stage we can't cover it financially. We can cover syphilis testing, but we can't cover other STIs."

Stakeholder, national, government, programme, 5–9 years' experience

"Testing for HIV, syphilis and hepatitis B and C is very good – these multi-disease tests are very useful. They're convenient and provide results for several infections immediately. Unfortunately, we don't have the same opportunities or rapid tests for other infections. The most common STI is chlamydia, with gonorrhoea in second place. Those remain outside the system. You need either PCR or bacterial diagnostics and microbiological approaches... We have PCR, microscopy of smears, bacterial cultures or urine tests."

Stakeholder, national, government, programme, 20+ years' experience (1)

"The national PrEP standard doesn't require mandatory STI testing. And if it isn't required, then in our country nobody is obliged to do it, so it isn't considered necessary. But previously, when we were piloting the programme, we tested for syphilis, and many people found out that they had it."

CLO, national, community programme coordination, 20+ years' experience

"We used to have expanded testing for people receiving PrEP, so we tested them every three months or one month after treatment. Now we only have hepatitis and HIV tests; there's no syphilis testing."

Infectious disease specialist, Kyiv, public HCF, 20+ years' experience

Gonorrhoea demonstrated the limits of strategic readiness particularly clearly. In discussions of Doxy-PEP, it appeared both as an infection against which doxycycline has lower and less consistent effectiveness and as an example of where the system requires stronger laboratory and AMR infrastructure. In professionals' accounts, Ukraine's developing AMR surveillance was more often associated with hospitals, firearm injuries, septic conditions and hospital-acquired resistance than with STIs or doxycycline. The existing AMR system is therefore relevant to Doxy-PEP, but requires adaptation to the context of a preventive sexual health intervention.

"I've never heard of pathogens causing specific infections such as gonorrhoea becoming insensitive to antibiotics and creating treatment problems. We're more concerned about opportunistic microorganisms with a very high potential for developing antimicrobial resistance. These are ESKAPE pathogens. I haven't encountered research on this and haven't heard from infectious disease colleagues that they've faced resistance."

Stakeholder, Odesa, government, research and analysis, 20+ years' experience

"It's a question of priorities and how serious the issue is at present. There are other issues that are currently more strategically important from an antimicrobial resistance perspective. These include resistant strains associated with the war. Injured people receive care at different stages, and I understand those providing that care because their task is to save lives. But as a consequence, we'll later have a large number of resistant strains. That's a priority area."

Stakeholder, national, international organisation, programme, 10–19 years' experience

The limitations of AMR infrastructure extended beyond its focus on hospital infections. Some professionals described AMR as a formally recognised issue that was not always integrated into routine clinical decision-making in practice. Testing susceptibility to antimicrobial agents before treatment was not routine everywhere, particularly outside large facilities. A potential Doxy-PEP pilot therefore cannot assume that laboratory confirmation of susceptibility will be a standard component of the pathway.

"To be completely honest, antimicrobial resistance is quite an abstract concept for practitioners. Very few facilities in Lviv – and probably ours isn't particularly active either – determine resistance or even susceptibility to antibacterial medication before starting antimicrobial treatment. So I'd say the situation is more discouraging than positive."

Stakeholder, Lviv, government, programme, 10–19 years' experience

"At the national level, perhaps in Kyiv, they might be able to conduct antibiotic susceptibility testing. At the regional, district or rural paramedic-post level, definitely not. They prescribe something, tell you to go to a pharmacy, buy the medication and take it. Perhaps it's done in some private clinics, or at the national level at most."

Stakeholder, national, government, programme, 20+ years' experience (1)

Regulatory readiness for Doxy-PEP appeared partial and was interpreted inconsistently. The 2025 HIV standard created a partial regulatory opening for the first time by mentioning counselling MSM with recurrent STIs about post-exposure doxycycline use within PrEP care. Some government stakeholders interpreted this reference as a sufficient basis for prescribing it. Other respondents emphasised that it did not define the dose, candidacy criteria, frequency, monitoring, pathways for people with symptoms or the responsibilities of different actors. Some doctors might therefore know that the approach was possible without feeling sufficiently confident to use it routinely. Others relied on international guidance, which further demonstrated the inconsistency of individual decisions rather than the existence of a unified framework. The national HIV framework creates an important regulatory opening for Doxy-PEP, but does not in itself establish how the approach should function as a managed and reproducible service.

"International recommendations are publicly available. Any doctor can access the CDC protocol recommending doxycycline as post-exposure prophylaxis. Based on this protocol, a doctor has every right to use it and prescribe doxycycline for post-exposure prophylaxis."

Stakeholder, national, international organisation, programme, 20+ years' experience

"The fact that we can use international guidelines when Ukrainian ones don't exist is an advantage, and I sometimes have to find a way around the situation like that. But for an official prescription, so that questions don't arise later, it would still be preferable to have our own guidance and recommendations to avoid legal conflicts."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (1)

"Even if the Public Health Centre now makes another amendment to the procedure for providing HIV prevention services and adds the same three-line point about doxycycline that appears in the medical standard, will that produce a result? For me, no. It's good that the HIV medical standard now includes this point within PrEP counselling. But let's conduct a small study: how many doctors currently read these standards and know that when prescribing PrEP they're also expected to counsel patients about doxycycline?"

CLO, national, advocacy and community expertise, 5–9 years' experience

International evidence was regarded as necessary but insufficient for implementation in Ukraine. Respondents recognised the importance of international studies and recommendations, but emphasised that these could not be transferred mechanically into a context characterised by widespread self-directed antibiotic use, unequal access to laboratories, weak STI diagnostics and limited visibility of the private sector. Local adaptation needs to determine how the clinical Doxy-PEP regimen could function within Ukrainian service, wartime and community conditions.

"Studying the experience of other countries doesn't mean simply taking the model from Thailand and transferring it to Ukraine, or transferring the United States model to Ukraine. We need to look for a context that more closely resembles the one in which we live."

Stakeholder, national, international organisation, programme, 10–19 years' experience

The wartime context made system readiness even more uneven. HIV services had adapted through medication delivery, remote support and flexible pathways, and this experience could be useful for Doxy-PEP. At the same time, the war intensified staff shortages, burnout, population displacement and fear related to mobilisation. Some MSM and TGW had become harder to reach because of fear of TRSSCs or reluctance to attend official institutions. Even with a protocol, Doxy-PEP would not be equally accessible in different cities or for different subgroups.

"Migration has disrupted contact with our clients. In previous years, they remained in the area, were under follow-up and were much more open to contact with us. Now many have left. It's easier to maintain contact with those who remain in Ukraine. We mostly lose contact with those who have moved abroad. Mobilisation also affects access to the target population. Men are reluctant to meet us, even when our mobile teams travel to remote areas."

Stakeholder, national, NGO, programme, 10–19 years' experience

"Most of our clients are documented as men in one way or another, which makes them of interest to the state as potential military recruits. The populations have therefore become quite closed. People are moving more online and having less face-to-face contact with organisations and social workers. It's become much more difficult for us. We don't have sufficient ways to motivate people, they can't move freely around cities, and that affects case identification and access to medical services."

CLO, national, community programme coordination, 10–19 years' experience

Regional differences confirmed that readiness cannot be assessed for Ukraine as a whole. Large cities already have HIV services, NGOs, private laboratories and experience of working with key populations, but respondents still described different weaknesses: some had stronger PrEP pathways but weaker STI diagnostics, while others

had active NGOs but lacked friendly dermatovenereologists. These problems were more acute outside major cities, particularly near areas of active hostilities. Readiness for Doxy-PEP depends on the specific configuration of services, laboratories, NGOs, CLOs and doctors in each location.

Respondents' accounts describe a system in which Doxy-PEP can be piloted, but cannot simply be "added" to existing services without preparation. HIV/PrEP infrastructure, NGOs, CLOs and friendly doctors provide a practical foundation for an initial phase. STI surveillance, gonorrhoea and chlamydia diagnostics, links with the private sector and regulatory detail remain unevenly developed. Strategic readiness is sufficient for a controlled pilot within selected pathways and locations, but additional decisions are required before Doxy-PEP can be considered for broader national implementation.

4.4.2. Integration into services and implementation pathways

Respondents rarely described Doxy-PEP as a service that should be introduced separately from existing HIV, STI and community-support pathways. Instead, they situated it within points of the system that already have contact with people experiencing sexual risks: PrEP services, ART care, friendly HIV clinics, trust rooms, dermatovenereology consultations, NGO navigation and community channels. Each entry point has its own advantages and limitations. HIV services offer trust and a prevention-oriented approach, but do not always have sufficient STI diagnostic capacity. Dermatovenereologists have STI expertise, but do not always provide a friendly pathway for MSM and TGW. NGOs and CLOs have trust, but cannot replace a medical decision concerning an antibiotic. The feasibility of Doxy-PEP depends on linking several pathways within a managed hybrid model.

PrEP services most often appeared to be the most natural starting point. Doctors providing PrEP were already accustomed to discussing sex, testing and medication with clients, while NGOs viewed PrEP as a pathway in which people had already accepted the concept of biomedical prevention. For some national experts, PrEP infrastructure was the most developed platform: it had standards, coordination, training and experience of engaging MSM. Respondents did not, however, reduce Doxy-PEP to an "addition to PrEP". People receiving ART, TGW outside PrEP pathways, NGO clients and people consulting private doctors could also face relevant risks. PrEP therefore appeared not as the sole access criterion, but as the channel most ready for an initial phase.

> *"First of all, I think facilities providing HIV pre-exposure prophylaxis services could be involved. These professionals are already trained, they work in prevention and know how to assess HIV acquisition risks. They'll also be able to assess risks related to sexually transmitted infections."*
>
> *Stakeholder, national, government, programme, 5–9 years' experience*

ART care was also viewed as a potential entry point, although it was less apparent to some respondents. People living with HIV may have an undetectable viral load but continue to have condomless contacts or recurrent STIs and may therefore need Doxy-PEP regardless of their HIV status. These responses reinforced the broader principle that Doxy-PEP should be linked to STI risk rather than HIV status itself.

> *"Once we've identified that someone receiving ART has an STI, why shouldn't we also offer them Doxy-PEP if they have ongoing risks?"*
>
> *NGO, Kyiv, programme coordination, 10–19 years' experience*

An NGO-supported pathway appeared particularly important in relation to the actual accessibility of the service. Social and outreach workers described situations in which a client contacted a familiar NGO worker rather than a doctor after a higher-risk exposure because they feared a public facility, did not have a friendly doctor or did not want to explain their sexual experiences. In these circumstances, an NGO could serve as the first safe entry point. NGO professionals and other respondent groups did not, however, view NGOs as settings in which antibiotics should be prescribed. The NGO's role was to understand the type of request,

distinguish post-exposure risk from symptoms, refer the person to a friendly doctor and support their continued engagement with services. The service model must therefore maintain a clear boundary between community support and medical decision-making.

"Organisations working with key populations definitely need to be involved because people trust them more than healthcare providers. A doctor isn't the first person they approach."

Stakeholder, Lviv, government, programme, 10–19 years' experience

"If our target populations are already in contact with NGOs that offer packages of services, adding Doxy-PEP there would be the most reasonable option. We already understand the client and have some understanding of their behaviour, so we can anticipate whether the person should be offered this service. We're already in contact with them, meaning that a certain level of trust exists."

Stakeholder, national, NGO, research and analysis, 20+ years' experience

"There definitely need to be trained social workers and peer-to-peer support linking people to trusted doctors who'll dispense Doxy-PEP. It's like what the state is doing with injectable PrEP now: the medication is simply available at an HCF. They say, 'Do they need it? Let them come.' But nobody comes, or very few people do. Mostly those who already received it during the pilot. Nobody wants to go because there's no social support, nobody wants to stand in queues, and there's stigma as well."

CLO, national, advocacy and community expertise, 20+ years' experience (2)

"What matters to me is having a friendly space where you can be yourself, where you can come and talk. You wouldn't go to your family doctor and disclose details like that. The idea here is humanity."

CLO, national, community programme coordination, 5–9 years' experience

"Social workers very often act as a bridge between the client and the doctor. When someone enters an NGO and understands that they've come to another human being, the relationship becomes more equal and the client trusts us."

NGO, Odesa, client support, 20+ years' experience

CLOs added community legitimacy to the pathway. Some people may trust neither doctors nor large NGOs but listen to peer counsellors or activists. This is particularly important for trans people, people concealing their identity and those who do not want to identify themselves immediately as MSM, trans or sex workers. CLOs can help recognise when a situation requires medical consultation, explain the basic rationale for Doxy-PEP and refer the person to a friendly service. CLOs themselves nevertheless recognised a risk: without a clear framework, community channels could circulate an oversimplified regimen without conditions, testing or medical assessment.

"When necessary, we take the person by the hand and bring them to a doctor. If they don't want to be taken by the hand, we make the appointment or connect them with the doctor."

CLO, Lviv, community navigation, 5–9 years' experience

The dermatovenereology pathway was necessary, but not always a convenient first point of entry. Dermatovenereologists have essential expertise in symptoms, diagnosis, treatment and distinguishing prevention from therapy. For some MSM and TGW, however, this pathway may be associated with stigma, queues or disclosure of identity. Dermatovenereology therefore appeared in the interviews more as the clinical foundation of the pathway than as a mandatory first step. A person could enter through a PrEP service or NGO, but needed rapid referral to an STI specialist when symptoms or a positive test were present.

"Specialists receive patients only once they're already ill. Nobody goes to a dermatovenereologist for prevention before anything has happened. If someone engages in higher-risk behaviour, a specialist definitely won't reach or engage them proactively."

Stakeholder, Lviv, government, programme, 10–19 years' experience

"Someone is more likely to come to us and say, 'I was at a rave yesterday and had unprotected sex,' than to go to a dermatovenereology dispensary and say the same thing."

CLO, Lviv, community navigation, 5–9 years' experience

"We're the starting point because only a dermatovenereologist treats syphilis, while gonorrhoea in men is treated by a urologist. I'm not authorised to treat STIs; I can only make recommendations. Prevention is one thing, but if treatment is required, that's their area."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (1)

A connection to STI diagnostics was one of the main conditions for a realistic pathway. Rapid testing for HIV, syphilis and hepatitis is already integrated into services, while diagnosis of gonorrhoea and chlamydia remains more complicated. This creates a practical challenge for Doxy-PEP: counselling may be easily incorporated into a PrEP pathway, but the pathway may lack sufficient diagnostic support for infections requiring PCR, swabs or separate rapid tests. Integration of Doxy-PEP into services therefore consistently meant more than dispensing or prescribing medication; it also required a clear testing pathway.

"If a client is tested for syphilis and receives a positive result, the medical professional should refer them for specialist care from a dermatovenereologist. Unfortunately, that doesn't always happen. A doctor can say, 'Please contact…', but can't reliably know whether the client actually sought care."

Stakeholder, national, government, programme, 5–9 years' experience

"I'd like these patients to have more reliable access to a dermatovenereologist. A patient who comes to us in a private clinic isn't eager to seek STI treatment in a public facility. A rash and other symptoms need to be examined properly."

Infectious disease specialist, Kyiv, private HCF, 5–9 years' experience

The post-exposure timing window made the Doxy-PEP pathway fundamentally different from a planned PrEP or ART visit. A person may need advice at night, during the weekend, after a party or in circumstances where transport, curfew or fear of TRSSCs restrict movement. NGOs and CLOs have an advantage in providing rapid, trusted communication channels, while healthcare facilities may not always be able to respond within the required window. Some respondents therefore referred to the need for online consultations, advance risk assessment, electronic prescriptions or limited advance access to medication for people who had already undergone medical assessment.

"If someone writes at night saying that something happened after a sexual contact, they aren't going to make a doctor's appointment the next morning and then wait a week. They need a response that same night or in the morning."

NGO, Odesa, client support, 20+ years' experience

Remote and flexible service formats appeared practically relevant because of wartime experience. HIV services and NGOs already used medication delivery, remote support and online communication, demonstrating that medical and social pathways could operate outside face-to-face visits. For Doxy-PEP, this created an opportunity for rapid consultation or navigation following exposure. Doctors in particular did not describe remote access as a complete replacement for a clinical pathway: symptoms, a positive test, recurrent

STIs or frequent requests should lead from remote consultation to in-person or laboratory assessment. Some respondents also questioned sending doxycycline by post. On the one hand, this could reach potential users who needed Doxy-PEP but did not attend facilities and could reduce inequalities between urban and remote populations. On the other hand, from a programme perspective, the cost of sending doxycycline might exceed the pharmacy price of the medication itself.

"Telemedicine is important. Men can't always leave their homes because of fear of TRSSCs. NGOs become involved, and there are transport services and medication delivery. Whenever we can reduce the burden on patients who are afraid to seek care unnecessarily, we do it."

Family physician, Lviv, public HCF, 20+ years' experience

"Online support is possible only in emergencies, when someone genuinely feels very unwell and there's a healthcare worker on the other side who can advise them. But… someone takes a photograph of something and asks, 'What's this?..' What can I say? It's simply impossible. I need to see the body and examine the person… How else can it be done?"

Dermatovenereologist, Odesa, public HCF, 5–9 years' experience

"I'd definitely consider digital platforms to overcome shortages of qualified staff and pressure on the system. In public health, the model where 'the doctor sits in the office and serves whoever arrives' doesn't work because the people who need the service either don't come or come too late. But there's a screening question: whether adequate screening can be conducted remotely. The medication can be sent by post, but the question is how we would monitor its use."

Stakeholder, national, NGO, research and analysis, 20+ years' experience

The potential role of primary care in providing Doxy-PEP was viewed ambivalently. In theory, family physicians could broaden its geographical availability, but most respondents did not regard ordinary primary care as a ready pathway. Family physicians may lack experience discussing anal sex, chemsex or trans-specific needs, and in small communities their services may not provide a confidential environment. Involving selected trained and friendly doctors working in coordination with HIV services, NGOs, CLOs and dermatovenereologists appeared more realistic.

"We know that many responsibilities are being transferred to primary care. But based on our experience with ART and tuberculosis treatment, we haven't seen such a substantial contribution from primary care. If this is a general family physician with no connection to the subject, it's very unlikely that they'll focus on it. Given how the system currently operates, dermatovenereologists and infectious disease specialists are more closely involved in STI treatment and therefore in prevention."

Stakeholder, national, international organisation, programme, 10–19 years' experience

"Almost no MSM approach a family physician for testing because they're afraid to disclose their sexual orientation during screening. Access formally exists, but in practice it doesn't because people don't use it."

NGO, Odesa, programme coordination, 5–9 years' experience

"If family physicians alone are required to issue doxycycline prescriptions, that'll be a problem. Someone may make an appointment and wait two or three weeks. Five separate 72-hour windows could pass before they get there. Family physicians often don't know anything about HIV… And that's without even mentioning homophobia and transphobia."

CLO, national, advocacy and community expertise, 20+ years' experience (2)

"Family physicians also need to be informed because they're key professionals. But we may encounter a problem here… It's an antibiotic, so a prescription is needed, and for a prescription you go to a family physician. But how will the doctor issue the prescription unless the patient explains why they need it? That may be a barrier."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (2)

The private sector appeared as a genuine but unequal pathway. Some MSM and TGW already used private laboratories or doctors because of speed, comfort or distrust of public facilities. The private sector could provide Doxy-PEP consultations or STI diagnostics, but costs, quality of communication and willingness to discuss key populations, trans experiences or chemsex varied substantially between facilities. The private sector therefore appeared not as an alternative to public, NGO or community pathways, but as part of the actual service ecosystem that needs to be considered when planning access.

"When it comes to marginalised populations, people have traditionally used private doctors for many years. They have to pay for treatment, and they do. Public services are much less popular, that's certain."

Stakeholder, national, NGO, research and analysis, 20+ years' experience

The feasibility of Doxy-PEP therefore depends on integrating it into existing pathways without treating any single pathway as a universal solution. PrEP and HIV services provide the most developed medical foundation, but do not reach all potential users. NGOs and CLOs provide trust and first contact, but require a medical partner. Dermatovenereology services provide diagnosis and treatment, but are not an acceptable first entry point for everyone. Remote formats can accelerate access, but cannot replace laboratory and clinical assessment. The data support a hybrid pathway: a medical decision regarding Doxy-PEP, supported by navigation from NGOs and CLOs, linked to STI diagnostics and sufficiently flexible to accommodate the post-exposure timing window.

4.4.3. Staff readiness and training

Respondents described staff readiness for Doxy-PEP as uneven and dependent on more than whether an individual doctor knew the doxycycline dosing regimen. Doxy-PEP requires readiness across the entire pathway: a doctor who can make the clinical decision; a social worker or case manager who may be the first to hear a post-exposure request; a CLO representative who can explain the approach in language used by the community; a dermatovenereologist or STI specialist who can manage symptoms and positive test results; a laboratory pathway; and coordinators who keep the service within the protocol. Training was therefore understood not as a standalone session on dosing, but as a way to align different professional roles and responsibilities.

Healthcare providers had different starting points depending on their specialty. Infectious disease specialists and doctors providing PrEP and ART were more familiar with biomedical prevention and counselling about sexual risk, but did not always have sufficiently extensive experience in diagnosing gonorrhoea and chlamydia or managing complex dermatovenereological cases. Dermatovenereologists, by contrast, had a clearer understanding of the clinical boundaries – when prevention was no longer appropriate, how to distinguish active syphilis from a previous infection and how not to miss gonorrhoea – but were not always integrated into friendly HIV pathways or experienced in working with MSM and TGW. Healthcare providers need information on the evidence base, differences in effectiveness by STI, candidacy criteria, contraindications, pathways for symptomatic patients, compatibility with other medications and the practical implications of AMR. Staff readiness therefore involved reducing the distance between specialties: PrEP and ART doctors need to understand the limits of STI diagnostics, while dermatovenereologists need to understand biomedical prevention and the importance of community trust.

"Dermatovenereology services have never reached out to key populations because that isn't their priority. They haven't engaged with them; they sit in their clinics and everyone who comes to them is simply a patient. But here we're talking about doxycycline for higher-risk populations. So I'd consider this specifically in relation to our dermatovenereologists."

Stakeholder, national, government, programme, 20+ years' experience (1)

"We had a meeting of doctors from across Ukraine, everyone working with HIV. A dermatovenereologist from Kyiv was there, and someone asked her, 'What do you think about Doxy-PEP?' She replied, 'What is that?' So dermatovenereologists don't know about it. It was actually rather surprising."

Infectious disease specialist, Lviv, public HCF, 10–19 years' experience (1)

NGO professionals and CLO representatives demonstrated a different aspect of staff readiness: they are often the ones who hear a request before a doctor does. A social worker or case manager may receive a message following condomless sex, chemsex or the onset of symptoms and, without preparation, may either provide too little information or exceed the boundaries of their role. Respondents described a need for navigation skills rather than prescribing competence: understanding what Doxy-PEP is, when timing is important, which symptoms rule out a preventive approach, when a doctor is required, and how to distinguish Doxy-PEP from PrEP, HIV PEP and STI treatment. NGOs and CLOs need the same core topics as doctors, but presented as brief first-response algorithms: what to tell someone after disclosure of an exposure, when to refer them to a doctor, when Doxy-PEP is inappropriate, and how to discuss the medication without moralising or oversimplifying it.

"When we're talking about our community, the transgender community, people tend to obtain this kind of information from peers. Of course, the information should be provided by professionals and doctors. But peer representatives from community organisations need to bring the community to those doctors so that people come and listen. That'll be more effective."

CLO, Odesa, community programme coordination, <5 years' experience

"People ask questions that are beyond my competence. But I still need to have at least some basic knowledge. The difficulty is that you can't simply tell someone, 'Go there.' You need to refer them sensitively."

NGO, Lviv, client support, <5 years' experience

"I guarantee that social workers in the field could immediately come up with another 30 questions, and they wouldn't be philosophical questions but practical ones. 'What if I take one pill and forget the second? What if I take it with alcohol, or take it while I'm drunk – what'll happen to me?' There'll be many possibilities, and social workers need to be ready to answer them."

CLO, national, community programme coordination, 20+ years' experience

Communication readiness emerged as a separate staffing issue. Doxy-PEP brings together several sensitive topics: sexual behaviour, antibiotics, STIs, MSM, TGW and chemsex. If communication is oversimplified, people may remember only "two pills after sex". If it is too medicalised or moralising, people with relevant risks may not seek the service. Training therefore needs to include the language used to explain the intervention: simple enough for someone to act after an exposure, but precise enough not to encourage self-prescribing or use when symptoms are present.

"There shouldn't be general demand for any medication. We need to explain all the arguments for and against taking or not prescribing a particular medication. If everything is explained clearly, the decision will be informed. If the person then develops an adverse reaction, they'll understand: 'Okay, my stomach hurts now, and I understand why. I know that once I stop taking this medication, things will return to normal.' So the person doesn't become frightened."

Stakeholder, national, international organisation, programme, 20+ years' experience

"When you explain the consequences, people still think about them. The patient needs to understand, and the doctor needs to explain the risks properly. If you simply provide the medication free of charge without explaining the regimen, the guys share the tablets with friends who haven't been assessed. That's my main problem with PrEP at the moment."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (1)

Trans competence was a condition of genuine staff readiness. If providers discuss Doxy-PEP only through the category of MSM, some TGW will remain invisible or enter a pathway in which their gender identity is not recognised. Training needs to cover more than general "work with key populations". It should include gender-appropriate communication and the clinical questions relevant to TGW, including compatibility with hormone therapy, the risk of misgendering and the safety of medical encounters.

"When we're talking about transgender people, we try to train doctors. But some simply aren't interested, and we can't force anyone. Stigma against trans people is constant."

NGO, Kyiv, client support, 5–9 years' experience (1)

"Doctors, like our society as a whole, can be divided into three categories. Some are strongly opposed, others are supportive, and the largest group simply doesn't know. They aren't educated or informed. They don't know who transgender people are, why they need these services, how to communicate with them or which topics are inappropriate in conversation. In reality, there aren't many rules. When we visit polyclinics, hospitals, AIDS centres, friendly organisations and HIV prevention providers and explain all of this, the service providers become informed and these local problems disappear."

CLO, Odesa, community programme coordination, <5 years' experience

"It's important for the doctor to understand endocrinology and hormone replacement therapy, to be familiar with the questions trans people may have, and to be ready to provide an appropriate answer and share international experience. Because of both their appearance and their needs, these patients can't always attend an ordinary polyclinic."

Family physician, Lviv, public HCF, 20+ years' experience

Respondents situated staff readiness within a broader resource context. Staff shortages, burnout, low pay and wartime pressures mean that a new service cannot assume that existing teams have unused capacity. Doxy-PEP requires counselling, documentation, testing and supervision, and simply "adding" it to existing workloads without dedicated resources could leave the service largely formal.

"There's a shortage of staff both among healthcare workers, who could be at the forefront of prevention among the population, and in the non-governmental sector. We lack service providers and social workers who could be involved in these interventions and activities."

Stakeholder, national, NGO, programme, 10–19 years' experience

"A separate person needs to do this; we don't have time for it. Explaining everything and monitoring it would be an additional workload. There needs to be a doctor and a nurse responsible for it. It isn't like taking a vitamin. We need to achieve a result and demonstrate effectiveness."

Dermatovenereologist, Kyiv, public HCF, 20+ years' experience

The responses demonstrated the importance of an interprofessional and multidisciplinary approach to training. If healthcare providers are trained separately, NGOs receive different messages and CLOs circulate simplified information, Doxy-PEP may acquire several different meanings across the pathway. Training therefore requires aligned materials, shared language and a clear division of roles between the medical and social components of the service.

"Active involvement is important. The role of the public sector and facilities at different levels in post-exposure prophylaxis needs to be clearly defined – from primary care to other specialist facilities – along with the role of the non-governmental sector and the links, communication and cooperation between them."

Stakeholder, national, government, programme, 20+ years' experience (1)

"Medication use, adverse effects, compatibility with the main groups of medications and correct administration should all be mandatory components of training for staff implementing Doxy-PEP. The doctor in the project shouldn't serve as the first-line counsellor. There should be an initial counsellor who provides the main information and answers frequently asked questions, and a healthcare professional who dispenses the medication and can provide specialist advice. For example, a trans woman seeking prevention may be taking certain medications as well as antidepressants."

NGO, Kyiv, client support and programme coordination, 5–9 years' experience (2)

"If we want the training to be productive, face-to-face sessions are better because people actually attend in person. There should be two trainers: one involved in social work and one healthcare professional, so that the two perspectives are combined immediately. The questions may differ: how to provide counselling properly and manage difficult cases, while the healthcare professional explains combinations, consequences, adverse effects, what can be done and so on."

CLO, national, community programme coordination, 20+ years' experience

Supervision and post-training support were also viewed as necessary, with respondents frequently referring to briefings or clinical case meetings. Many situations likely to arise with Doxy-PEP cannot be addressed through a simple information sheet: a person may already have taken an antibiotic independently, request medication in advance, have symptoms, refuse testing, have previously obtained the medication elsewhere or fear that their information will be recorded. These situations require an opportunity to discuss a complex case with a more experienced clinician or agree on a shared position among different service providers. Without this support, training may provide initial knowledge but not ensure consistent service quality.

"A doctor needs to serve as the advisory authority because everyone will have their own requests. And then it'll start… sending photographs and saying, 'Look at what I have'... It could create a wave of requests that won't be managed in line with clients' expectations."

CLO, national, community programme coordination, 10–19 years' experience

"I'm ready to provide Doxy-PEP consultations. I just need to speak more closely with dermatovenereologists about the dosing frequency – how much time should pass between Doxy-PEP doses."

Infectious disease specialist, Kyiv, private HCF, 10–19 years' experience

Staff readiness for Doxy-PEP is therefore readiness across the pathway rather than readiness of an individual professional. HIV doctors understand prevention but require stronger links to STI diagnostics. Dermatovenereologists have STI expertise but need a friendly, community-sensitive framework. NGOs have trust and provide first contact, but require clear boundaries around their navigation role. CLOs communicate interventions in community language, but need safe messages and referral pathways. Doxy-PEP therefore requires both training about the medication and joint development of a medical and social pathway capable of supporting post-exposure prophylaxis without self-prescribing, stigma or loss of clinical boundaries.

4.4.4. Regulatory requirements and programme management

Respondents described the regulatory issues surrounding Doxy-PEP through the tension between timely access and control over antibiotic use. Post-exposure prophylaxis is meaningful only when a person can rapidly obtain advice and take the medication within the timing window. Doxy-PEP nevertheless involves preventive antibiotic use without a confirmed diagnosis, which distinguishes it from conventional treatment pathways. Respondents therefore rarely supported completely unrestricted access, but did not consider a model realistic in which every episode required a lengthy in-person pathway, a new prescription and several organisational steps. A full laboratory assessment or bacterial culture with susceptibility testing also cannot be a prerequisite for each dose because waiting for results is incompatible with the post-exposure timing window. The same practical problem recurred throughout the interviews: Doxy-PEP needs to be sufficiently accessible for people to use it correctly, but sufficiently managed not to become self-prescribing or a household supply used frequently.

> *"This is a sensitive issue for me because if we introduce it for self-administration, the person won't be able to obtain a prescription from a specialist within 24 hours. They simply won't manage it: they won't have time to make an appointment, attend it, receive a prescription and buy the medication. So they'll be prescribed an entire pack, keep it at home and take the doxycycline whenever they want. If it's one-off prevention, once or twice, that's one situation. But if someone takes doxycycline after sex three times a week, from an antimicrobial resistance perspective that definitely won't be okay."*
>
> *Stakeholder, Odesa, government, research and analysis, 20+ years' experience*

> *"In the context of antimicrobial resistance, what matters and what do we need from the laboratory? We need the laboratory to provide high-quality results promptly so that the doctor can replace an empirical antimicrobial prescription with targeted treatment based on bacterial culture results. It's therefore very important for every laboratory to be capable of providing a result in under 72 hours. Unfortunately, bacteriology laboratories currently require substantial investment and development, both in staffing and equipment."*
>
> *Stakeholder, national, government, programme, <5 years' experience*

For healthcare providers, the main regulatory uncertainty was the boundary between preventive and therapeutic antibiotic prescribing. Under conventional clinical practice, antibiotics are prescribed for treatment or clearly defined preventive situations, such as possible Lyme disease following a tick bite. Doxy-PEP assumes that exposure has occurred but infection has not been confirmed. Without a national algorithm, some doctors lacked confidence about how to document preventive prescribing following sexual contact because antibiotics are normally prescribed after a diagnosis has been established. This was especially apparent when someone requested medication in advance or expected a period of increased risk. The doctor needed a basis for deciding when Doxy-PEP was appropriate, when testing was required and how the consultation should be documented.

> *"The most substantial problem is that legally we aren't allowed to use an antibiotic for prevention. The only condition for which I'm permitted to prescribe doxycycline prophylactically is Lyme disease after a tick bite. There are no other conditions for which prevention is allowed. So at the moment all of this happens informally."*
>
> *Infectious disease specialist, Lviv, public HCF, 10–19 years' experience (2)*

> *"Under the law, antibiotics are prescription-only. Although it doesn't work in practice, legally that's the situation. If a doctor is going to prescribe it, they need a basis: a regulatory document, guideline, recommendation or Ministry of Health order. Without that basis, the doctor may say, 'You can go and buy it yourself, but I can't issue a prescription.'"*
>
> *Stakeholder, Odesa, government, research and analysis, 20+ years' experience*

"If doxycycline prophylaxis is approved and regulated nationally, information about preventive use should in principle also be added to the doxycycline product information. It isn't there now. At present, the instructions describe doxycycline simply as an antibiotic prescribed for treatment. What we're discussing is outside the approved indication and isn't included in the official instructions. That needs to be addressed."

Stakeholder, national, government, programme, 20+ years' experience (1)

The prescription-only status of antibiotics was not regarded as sufficient protection against incorrect or chaotic use. Respondents from all groups described situations in which antibiotics were effectively available through pharmacies or familiar doctors despite the formal prohibition on non-prescription sales. During martial law, the electronic prescription requirement for antibiotics also remains optional, and even with a prescription it may be possible to purchase an antibiotic after the prescription has expired. National and regional AMR specialists generally acknowledged that current regulations were insufficient to control rational antibiotic prescribing and sales. For dermatovenereologists, this created a risk of patients arriving after self-treatment with an obscured clinical presentation. For NGOs, it meant that after a higher-risk contact, clients might go to a pharmacy or acquaintances before receiving advice. For CLOs, it created a risk that information about Doxy-PEP would circulate faster than a safe pathway could be established. A future model therefore cannot rely on prescription status alone and needs a service mechanism that genuinely directs people towards a medically justified decision.

"Antibiotic sales in pharmacies remain uncontrolled; nobody monitors them and nobody asks for your prescription. Even if you say you have one, you may not need to show it because they may simply take your word for it. When we conduct monitoring visits in healthcare facilities, we at least review the patient record and can ask a doctor why they prescribed one antibiotic rather than another. But in terms of actual control mechanisms… I haven't encountered any."

Stakeholder, Lviv, government, programme, <5 years' experience

The standard pharmacy pack of ten tablets, equivalent to five Doxy-PEP doses, made the issue of leftover medication highly practical. A person might keep the remaining tablets "for next time", give them to a partner, take them later without consultation or use them after symptoms appeared instead of seeing a doctor. This presented a difficult situation for NGOs and CLOs. A limited advance supply could be practical for people with recurrent risk or those unable to see a doctor quickly, but any supply required explanation, recording and follow-up contact. The data highlighted this as a central implementation dilemma: the medication needs to be close to the user when exposure occurs, but not so uncontrolled that it becomes a household antibiotic reserve.

"The smallest quantity sold in a pharmacy is ten tablets. They take two and realise that they still have eight left. Then they know they can 'sin' again because they still have doxycycline. It's all very good in principle, but it needs to be strictly controlled. We don't live with these people, so we can't hide the medication from them. It would be great if it were sold in packs of two tablets."

Infectious disease specialist, Lviv, public HCF, <5 years' experience

The role of NGOs and CLOs in providing physical access to the medication remained the most sensitive regulatory issue, including among representatives of the organisations themselves. All groups recognised that without NGOs and CLOs, Doxy-PEP might not reach some of the people most in need of rapid and confidential navigation. None of the groups, however, regarded a model as safe in which an organisation effectively replaced a doctor in deciding whether an antibiotic should be used. Even where an NGO team included a medical professional, a legal boundary remained between medical services provided within a licensed facility and the navigation and counselling role of an organisation without the relevant medical licence. NGOs and CLOs themselves were unwilling to assume responsibility for storing or dispensing antibiotics outside a clearly defined regulatory framework. This position reflected the nature of the product: unlike a condom, lubricant or self-test, an antibiotic requires assessment of indications, contraindications, symptoms, concomitant medications and frequency of use.

"NGOs have clearly defined limits on what they can do. If something is detected, we refer the person to a specialist. We aren't doctors. Although people ask questions that go beyond our competence, we can't replace doctors."

NGO, Lviv, client support, <5 years' experience

"A community organisation can't purchase medication because we don't have a medical licence. We aren't a pharmacy or a healthcare facility. So if organisations are to dispense it, these barriers need to be analysed together with donors, government representatives and relevant professionals with legal expertise."

CLO, national, community programme coordination, 20+ years' experience

"Legally, we aren't a medical institution and aren't permitted to store medication. PrEP, for example, isn't stored with us. A doctor collects the PrEP from the clinic under strict recording procedures and brings it to our office. Even though it isn't a test tube, ampoule or vaccine but simply tablets, it still isn't stored in our office because we aren't legally permitted to keep it."

NGO, Kyiv, client support and programme coordination, 5–9 years' experience (2)

The private sector created a separate area of regulatory and monitoring uncertainty. Some potential users already consulted private laboratories or doctors, and the private sector could become a genuine channel for Doxy-PEP counselling or testing. If Doxy-PEP begins to be prescribed through private consultations or pharmacy pathways without shared rules, a substantial proportion of use may remain outside programme monitoring. The system would not know who was taking the medication, how frequently, for which indications, or whether symptoms or dosing errors were present. Private laboratory results and prescriptions also do not always feed back into surveillance. The regulatory framework therefore needs to account for the private sector as a setting in which, without minimum standards for counselling, STI diagnostics, prescribing and referral, a substantial proportion of Doxy-PEP use may remain invisible.

"The Medical Statistics Centre was separated from the Ministry of Health and incorporated into the Public Health Centre. The Public Health Centre then became responsible for statistics, including from the private sector. This began to produce positive changes because regulations require private facilities to report statistics under their licensing conditions. Very, very slowly, more private-sector data have begun to enter the statistics."

Stakeholder, national, international organisation, programme, 10–19 years' experience

"I tried to find information about STIs and found only limited data from the Ministry of Health of Ukraine, which probably don't reflect the full picture or its complexity. From our work with MSM, we know that some definitely don't rush to attend public or municipal facilities and enter the statistics with STI information recorded openly in their medical records, unlike HIV. HIV information remains confidential, whereas STI information is open. Some therefore prefer alternative consultations in private clinics or self-treatment."

CLO, national, advocacy, 5–9 years' experience

Electronic systems and medical documentation generated ambivalent views. Some experts saw potential in using existing medical information systems for monitoring, but respondents understood the sensitivity of data about STIs, sexual practices and membership of MSM or TGW populations. If the information is too visible in medical records, people may avoid formal pathways. If it is not recorded at all, services will be unable to monitor repeated use or adverse reactions. Respondents referred to the experience of HIV programmes, where unique codes allow services to retain a history of work with a client without personal information, as a possible model. This approach is more difficult within public HCFs, where patient identification is mandatory and itself represents a barrier for people avoiding contact with government institutions. Electronic recording therefore emerged as an issue of confidentiality and acceptability rather than a purely technical solution.

"If someone knows that they can go to a private clinic and buy doxycycline, they'll go and buy it there, even if it's provided free of charge at a public clinic. They know that in a private clinic they may not even be asked to show an ID, while in a public clinic they need to register, give their full name and provide their telephone number."

CLO, Lviv, community navigation, 5–9 years' experience

"Safety and anonymity are important. At present, basic Public Health Centre prevention services, including condoms and lubricants, are provided using a telephone number. We receive many refusals: 'I don't need your cheap condoms if my number is going into a national database that'll later be used to track me down.' There are even aggressive reactions."

CLO, national, community programme coordination, 10–19 years' experience

"We need to implement our national electronic medical database. An electronic database is a very important component, and its absence limits both analysis and monitoring of the patient service cascade. How do we track that someone was identified, engaged in medical care, treated and achieved a treatment outcome? At the level of an individual with an STI, it's important to monitor recurrent cases, the risk practices that contributed to them and the relevant social factors."

Stakeholder, national, government, programme, 20+ years' experience (1)

The regulatory model also needs to account for the wartime context. For some men and TGW with a male gender marker in their documents, formal public pathways may be associated with fear of mobilisation as well as stigma. In regions affected by security restrictions, access to a doctor or pharmacy depends on transport, curfew and shelling. Under these conditions, an overly restrictive regulatory pathway may push people towards informal access, while an overly permissive one may increase the risk of self-prescribing. Flexibility and control are therefore two necessary components of the same model, at least while martial law remains in force.

Programme management emerged in the interviews as a set of practical boundaries: who is a candidate and why, how frequently a person may use the medication, what to do if symptoms or a positive test appear, how to provide testing for gonorrhoea and chlamydia, how to prevent tablets from being shared, and how to respond to frequent repeat requests. These questions arose from different perspectives, but converged on the need to embed programme management within the access pathway itself. Gonorrhoea represented the clearest test of the entire model. For healthcare providers, it meant a need for correct diagnosis and treatment. For AMR and surveillance professionals, it meant a need for susceptibility and resistance data that are currently lacking in routine systems. The ability to link Doxy-PEP with diagnostics and AMR surveillance, rather than merely dispensing medication, is therefore one of the main criteria for the feasibility of the model.

Taken together, the regulatory and programme-management issues surrounding Doxy-PEP cannot be resolved through a single document or prescription. Doctors need a clear basis for preventive antibiotic prescribing and defined limits of responsibility. NGOs and CLOs need rules allowing them to refer people rapidly without replacing medical decision-making. Stakeholders need minimum data on use, repeat requests and possible AMR signals. Doxy-PEP requires more than simply "adding doxycycline" to services; it requires a managed pathway in which the medication, medical decision-making, confidentiality, recording, STI diagnostics and programme management remain connected.

4.4.5. Financing, monitoring and sustainability

Respondents rarely reduced Doxy-PEP financing to the cost of doxycycline itself. Even when the medication was regarded as affordable, nearly all groups were effectively describing a broader and more expensive pathway around it: counselling, risk assessment, STI testing, follow-up visits, NGO or CLO navigation, management of adverse effects, responses to symptoms and monitoring of frequency of use. For healthcare providers, this meant additional clinical time; for NGOs, new counselling and support tasks; for CLOs, the need for safe communication; and for stakeholders, the question of who would finance the entire infrastructure required for managed access and on what basis.

All groups, particularly stakeholders, most often viewed a pilot as a realistic first step, but not as an automatic route to a sustainable service. International or donor funding appeared the most likely source of initial support. It could cover protocol development, team training, procurement of a limited quantity of medication for people unable to purchase it themselves, navigation, testing and data collection. A donor-funded pilot would not, however, resolve the question of long-term integration, while donor resources are constrained by the war, reductions in international assistance and competition between priorities. Public financing also presents challenges: budget resources are limited, and a decision to procure a preventive antibiotic for key populations could generate public or political controversy while needs for treatment of severe chronic conditions remain unmet.

> *"There's less money now, especially in the non-governmental sector. Government priorities are in completely different areas from healthcare, and the amount allocated to healthcare has also decreased. International assistance is limited too… The available funds are mostly spent on treatment, medication and perhaps laboratory components, leaving less for prevention-related work and services provided by NGOs. So everyone is now urgently looking for additional funding."*
>
> *Stakeholder, national, NGO, research and analysis, 20+ years' experience*

> *"From the perspective of equity and financing preventive services for Ukrainian citizens, the state is clearly an interested party: it could allocate some funding to prevention rather than later spending much more on treatment. How realistic is that at the moment? We'd need to ask the state."*
>
> *CLO, national, advocacy and community expertise, 5–9 years' experience*

> *"There may also be public resistance because not all medications used for lifelong chronic conditions are included in the list covered by the state budget. I think there could be resistance if the state purchased this specifically for these populations while people with cancer and other severe conditions, including genetic conditions, require expensive lifelong treatment."*
>
> *Stakeholder, national, government, programme, 20+ years' experience (2)*

For stakeholders working at government level, transition to sustainable financing depended on evidence. A new prevention intervention is difficult to incorporate into public or mixed financing mechanisms without local data on demand, correct use, coverage of target populations, the cost of the full service cycle, staff workload and potential risks. A pilot needs to answer both feasibility and system-level questions: who actually seeks the service, through which channels, how often the medication is used, whether people return for testing, whether self-prescribing or AMR increases, and how much the complete support pathway costs.

> *"For public financing, we need a body of information confirming that this is genuinely needed in Ukraine and is currently relevant. Equally importantly, we need to understand the impact. Did prevention interrupt chains of STI transmission? Did a patient receiving STI prophylaxis avoid infection? We need to understand whether the programme is effective and has an impact at the national level."*
>
> *Stakeholder, national, government, programme, 5–9 years' experience*

"We need to weigh the benefits, conduct economic calculations and then make a decision. If funding is available and there's a need, what is the annual requirement? Cost-effectiveness also needs to be considered."

Stakeholder, national, government, programme, 20+ years' experience (2)

Healthcare providers and the community sector viewed financial sustainability through the lens of their existing workloads. Many already support testing, PrEP and ART care, medication delivery, assistance to internally displaced people, humanitarian needs, re-engagement in treatment and psychosocial support. Adding Doxy-PEP without dedicated resources may appear to be a minor policy change, but in practice it would create new pathways, repeat contacts, management of anxiety and complex cases of incorrect use. For respondents, financing concerned the paid time of those responsible for maintaining this pathway, while CLO representatives separately emphasised the importance of supporting the communication component of Doxy-PEP.

"Spending 5–10 minutes explaining Doxy-PEP isn't difficult. But what happens afterwards if we provide ongoing support? Our organisation has funds that we can use for a taxi to take a client somewhere because people can't move freely around the city... If this becomes additional work for social workers and isn't paid in any way, they'll be working and giving their time for free."

NGO, Odesa, client support, 5–9 years' experience (3)

"There need to be several levels of materials. First, very simple materials written in clear, accessible language and delivered by opinion leaders and peer counsellors. There should also be consultations and perhaps videos from friendly doctors. Our peer counsellors and opinion leaders can then direct community members to those consultations and videos."

CLO, Odesa, community programme coordination, <5 years' experience

Financial accessibility for users was an important condition of equitable access. Doxycycline was regarded as inexpensive, and some respondents suggested that paying for it could encourage more deliberate use. If the Doxy-PEP programme requires payment for consultations, laboratory tests or private diagnostics, however, some people at high risk may remain outside the pathway. Free or low-cost provision during a pilot should therefore cover at least the basic components: counselling, referral and testing. At the same time, unconditional free distribution of the medication was not supported. Without medical assessment and monitoring, it could increase frequent use, sharing tablets with others or viewing Doxy-PEP as "insurance" after any sexual contact. Financial accessibility therefore needs to be managed: people should not be excluded because of cost, but access should remain connected to counselling, testing and reassessment.

"Tests aren't free, and even at [public hospital name], testing is performed by private laboratories. Antimicrobial resistance testing won't be provided free of charge, and there won't be many patients willing to pay for it themselves."

Infectious disease specialist, Odesa, private HCF, 20+ years' experience

"Doxy-PEP shouldn't be free. PrEP is provided free of charge, which is obviously very good, but many people resell it: they receive it for free and then sell it to people who don't want to provide their personal information. Unfortunately, that's the reality and it happens quite often. Could the same happen with doxycycline? Could someone receive it and then sell it on online forums?"

CLO, Lviv, community navigation, 5–9 years' experience

"There should be a co-payment. In practice, when patients pay at least something, it works much better than when they receive it completely free of charge. Doxycycline itself is inexpensive."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (1)

"A website could provide general information and include tick-box options. For example: 'I can purchase it myself but need a prescription,' meaning that the person needs a prescription but can pay for the medication, or 'I can't afford it and need it free of charge.' Those options should be available. People who can buy it themselves should be able to do so, and they may be more responsible if they purchase it with their own money."

CLO, national, community programme coordination, 20+ years' experience

Respondents regarded monitoring as essential but potentially damaging to trust. Without data, it would be impossible to assess whether a pilot was working and should be expanded: how many people seek the service, who meets the criteria, which pathways are actually used, whether people take the medication within the timing window, how frequently it is used, whether they return for testing, and whether there are adverse effects, symptoms or incorrect use. Excessive or poorly explained documentation could, however, push people towards informal access. Monitoring should be sufficiently detailed to support learning and safety during the pilot, but not so extensive during routine implementation that people choose an informal pathway instead.

"During a pilot, more indicators can be collected because it's better to collect and assess more: it's essentially a research evaluation rather than an attempt to maximise coverage, and the aim is to identify all the problems. More indicators can be collected during a pilot, including behavioural indicators and possibly resistance testing for some rather than all participants, depending on the available resources. If it later becomes mainstream like PrEP, then monitoring can be reduced to a minimum."

Stakeholder, national, academic, research and analysis, 20+ years' experience (2)

Frequency of use was one of the most important indicators, but also one of the most sensitive. People with recurrent risk may benefit most from Doxy-PEP, but may also take it most frequently. Respondents did not propose a single threshold beyond which use became "excessive", but almost all groups regarded repeat requests as a signal for further assessment: understanding the reasons for frequent higher-risk behaviour, reviewing candidacy and arranging testing. Healthcare providers and NGO representatives also emphasised that monitoring frequency would be difficult if users accessed several service points, making consistency across providers essential. Doctors wanted to know how often an individual patient used doxycycline, particularly if the patient moved, changed hospitals or consulted different doctors. NGOs highlighted the possibility of obtaining the medication from several social workers or organisations, which could lead to stockpiling, sharing with friends or use outside the indications.

"It's clear that this isn't a one-off service and the patient may continue using it, but the emphasis should still be on taking it less often. A good indicator for me would be people using it less. That would show us that the doxycycline was accompanied by good counselling and effective information work. The person no longer needs doxycycline because they're already practising the behaviours they should."

Stakeholder, national, government, programme, 20+ years' experience (1)

"If we see that a client is coming in very frequently, we need to look into it and perhaps involve a psychologist because there can't be one emergency after another. Of course, some patients are genuinely so anxious that they meet someone online, have sex, then run to the clinic the next morning already convinced that they've acquired every infection."

Infectious disease specialist, Kyiv, public HCF, 10–19 years' experience (1)

"A client could come to me today and receive the medication, then go to another social worker a week later and receive it again. How do we track and control that?"

NGO, Odesa, client support, 5–9 years' experience (3)

AMR monitoring was recognised as important, but rarely viewed as fully feasible within a pilot. Professionals more often described existing infrastructure in relation to hospital and healthcare-associated pathogens than to STIs and doxycycline. The post-exposure timing window does not allow AMR control to be organised as a laboratory check before each dose. Within a pilot, AMR monitoring therefore needs to operate as a learning component: generating information on frequency of use, recurrent STIs, symptomatic cases, gonorrhoea and laboratory susceptibility to the extent allowed by actual laboratory capacity, while identifying the minimum AMR signals that could inform subsequent implementation decisions.

"Only antimicrobial resistance can be monitored through bacterial cultures. But we simply won't have the data or grounds for that monitoring. A single dose of an antibiotic isn't sufficient grounds. If we implement this, enormous resources would be spent on bacterial cultures. It's expensive. We might find nothing at all because a higher-risk contact doesn't necessarily mean infection or even colonisation."

Stakeholder, Odesa, government, research and analysis, 20+ years' experience

Coverage indicators require cautious interpretation, and the conventional approach to setting planned coverage targets should be critically reconsidered. A high number of doses dispensed does not necessarily indicate high-quality implementation if medication is received by people at low risk, people outside PrEP pathways remain invisible or users do not return for testing. Low coverage may reflect fear of stigma, ineffective communication, an inconvenient pathway or distrust of record-keeping. Some CLO respondents emphasised the risk of quantitative coverage targets by analogy with PrEP, where pressure to meet programme indicators may encourage medication distribution without assessing actual risk or monitoring correct use. Doxy-PEP monitoring should distinguish demand, actual access, eligibility and pathway quality rather than simply counting people who received the medication.

"If indicators are imposed, it'll turn into what's happening with PrEP now, and nobody wants to talk about it in case the donor finds out. Indicators ruin everything, and then people start producing attractive pictures. And we'll end up with many STIs… 'We want to see 200 clients.' Then you attend a meeting and hear: 'You're working badly. Where are the 200 people you motivated to use the service?' If someone doesn't want it, what am I supposed to do? Drag them there by the hand? These programmes should think about the community rather than indicators and figures. I understand that indicators are necessary, but they need to design reasonable indicators that aren't nonsense."

CLO, national, community programme coordination, 5–9 years' experience

The sustainability of a pilot also depends on whether data are returned to teams as feedback rather than appearing only in reports. NGOs and healthcare providers working with limited resources are often already burdened by indicators, forms and donor requirements. If Doxy-PEP monitoring is cumbersome, it may reduce the acceptability of the service for providers or turn counselling into data collection rather than support. If the data show who is seeking the service, where people are lost from the pathway, which questions recur and where errors are most common, however, monitoring becomes a tool for optimisation. Dashboards were one requested form of feedback that would allow each professional to examine the data of greatest relevance to their work in more detail. Sustainability is therefore linked to whether the system can learn during implementation and adjust its algorithms accordingly.

"It would be very useful for epidemiology to monitor the profile of service users. But who'll do it? Will the person want to return when you've caught them and given them 15 consent forms and five questionnaires? It's a fine line, and all the risks need to be weighed. What is realistic to collect? A patient could complete a short questionnaire, for example. It's like the pilot project for HIV seroepidemiological monitoring. Experience shows that it greatly complicates communication with the patient because the visit becomes very long and they sit there for an hour. If it adds ten minutes, that won't be a disaster, but not a half-hour questionnaire."

Stakeholder, Lviv, government, programme, 10–19 years' experience

"I'd really like these data to be available to us… It would also be very useful to have baseline data on how many of these infections are recorded specifically in this population. If we introduced the intervention, did the level decrease? At present, we don't know the level, particularly for this population. Not among the population in general, but specifically among these people. We don't have those data."

Stakeholder, Odesa, government, research and analysis, 20+ years' experience

Respondents also indicated that scaling up Doxy-PEP would need to be conditional. If a pilot demonstrated demand but also showed frequent incorrect use, poor return for testing, excessive burden on NGOs or healthcare providers, and an inability to monitor symptoms and repeat requests, this would not support expansion. If the pilot showed that Doxy-PEP was acceptable, used by people with relevant risk, did not replace treatment when symptoms were present and remained linked to testing, broader integration could then be considered. Pilot data therefore need to be designed to inform a decision rather than merely confirm that the intervention was delivered.

"It would be useful to understand clearly whether this will work in Ukraine. Perhaps a regional pilot is needed, followed by an assessment of the risks and prospects for national implementation. I won't say that it's irrelevant to Ukraine or extremely relevant. It would be appropriate to assess how it works under real conditions now. I support a practical approach: to see whether something works, you need to test it."

Stakeholder, national, government, programme, <5 years' experience

Financing, monitoring and sustainability were therefore closely connected in respondents' accounts. An inexpensive medication does not make the intervention inexpensive: a high-quality pathway requires clinical time, navigation, testing, follow-up contact, record-keeping and at least a minimum AMR component. A donor-funded pilot may be the most realistic starting point, but its value will depend on its ability to generate local evidence for subsequent programme and government decisions. Monitoring needs to be manageable for providers and useful for programme management, and the system's capacity to learn during implementation is itself a condition of genuine sustainability.

4.5. Key implementation dilemmas

The findings presented in the preceding sections show that respondents did not regard Doxy-PEP as a simple intervention that could be added mechanically to existing services. For potential users, it represented a way to act after a higher-risk contact, reduce anxiety, gain greater control over their sexual health and potentially avoid some bacterial STIs. Healthcare providers, NGOs, CLOs and stakeholders also recognised its practical value, but almost always described it through conditions: who should be offered it, who should make the medical decision, how rapidly the pathway needs to operate, how confidentiality should be preserved, which data should be collected, how self-prescribing of antibiotics can be prevented, and how the new prevention approach should be linked to testing, STI treatment and AMR surveillance.

The dilemmas below are based on a synthesis of findings across respondent groups. The same issues – access, control, speed, confidentiality, AMR, candidacy criteria, financing, service readiness, staff capacity and pathway safety – recurred in different forms in the accounts of all participant groups. The central implementation question is therefore not whether Doxy-PEP is acceptable or unacceptable, but which model can manage several tensions simultaneously. An overly medicalised or slow pathway may leave people with relevant risk outside the service and push them towards informal doxycycline use. An overly simple or weakly controlled model may increase self-prescribing, frequent antibiotic use and loss of visibility over AMR risks.

The relative importance of each dilemma may differ by implementation stage. During a pilot, the critical issues are candidacy criteria, medical responsibility, links to testing, recording of use, team training and a safe access pathway. For potential scale-up, financing, sustainability, integration into STI services, staff capacity, private-

sector involvement and realistic AMR monitoring would become increasingly important. Doxy-PEP should therefore be understood not as a decision to dispense doxycycline, but as a managed process of developing a pathway in which the medication, medical decision-making, community trust, testing, confidentiality and learning remain connected.

4.5.1. Access within the timing window ↔ medical responsibility

The first cross-cutting dilemma concerns the balance between the practical accessibility of Doxy-PEP and medical responsibility for antibiotic use. For potential users, the medication is meaningful only if it can be obtained or taken within the post-exposure timing window. A higher-risk contact may occur spontaneously, at night, after a party, in the context of chemsex, group sex, paid sex, stealthing or an encounter in which an agreement about protection was violated. In such situations, a lengthy in-person pathway, medical appointment, new prescription and several organisational steps may make post-exposure use almost inaccessible.

Doxy-PEP is not, however, a neutral prevention material such as a condom or lubricant. It involves preventive antibiotic use without a confirmed infection, which is why almost none of the respondents supported completely unrestricted provision or uncontrolled access. Medical responsibility and oversight are needed to assess candidacy, contraindications, symptoms, compatibility with other medications, frequency of use and the need for testing. Dermatovenereologists placed particular importance on the boundary between prevention and treatment: a person with symptoms or a positive test requires diagnosis and a treatment pathway rather than another preventive dose.

This dilemma cannot be resolved through a choice between "free access" and "strict control". The data instead support a managed-access model: an initial medical assessment and explanation should occur before or at the start of use, after which a person may have limited, clearly instructed access to the medication for defined risk situations. NGOs and CLOs can provide the first point of entry and navigation within this model, but should not replace the medical decision concerning an antibiotic. Medical responsibility needs to be organised in a way that does not block timely access, but makes independent use within the agreed regimen safer and more understandable.

4.5.2. In-person pathway ↔ wartime mobility and hybrid access

The second dilemma concerns the format of contact between potential users and the system. From a clinical perspective, in-person assessment has clear advantages: a doctor can identify symptoms, obtain a history, assess contraindications, explain the regimen, refer the person for testing and distinguish situations in which Doxy-PEP is appropriate from those requiring treatment. For some healthcare providers, in-person contact remained a defining feature of responsible antibiotic prescribing.

The data nevertheless show that an in-person pathway is not always realistic or safe under wartime conditions in Ukraine. Respondents described air-raid alerts, curfew restrictions, transport barriers, fear of TRSSCs, the mobilisation context and reluctance to engage with formal public institutions. For TGW with a male gender marker in their documents or negative experiences of healthcare, an in-person visit could represent more than inconvenience: it could entail risks of stigma, misgendering or unwanted disclosure. If an in-person visit is required for every episode of access, Doxy-PEP may lose its practical value for the very people for whom post-exposure speed matters most.

Clinical assessment should therefore be retained, but access formats need to remain flexible. A hybrid model in which the initial assessment and explanation can occur in person or remotely, depending on the circumstances, and subsequent clarification after an exposure is available by telephone, messenger, telemedicine consultation or NGO navigation would preserve the clinical rationale without imposing a requirement that may become a wartime barrier. When symptoms, a positive test, frequent repeat requests or complex medical circumstances are present, remote contact should move the person into an in-person or laboratory pathway rather than fully replacing it.

4.5.3. Simplicity of the regimen ↔ risk of oversimplification into self-prescribing

The third dilemma concerns a communication advantage of Doxy-PEP: its basic concept is easy to remember and can circulate rapidly within communities – taking an antibiotic after higher-risk sex to reduce the risk of bacterial STIs. Potential users found this logic intuitive, particularly if they were already familiar with HIV PrEP or PEP. A simple message can quickly reach people with relevant risks, make the approach less abstract and lower the barrier to an initial discussion about STIs.

The same simplicity creates a risk of incorrect use. If Doxy-PEP circulates as "two pills after sex" without explanations of its limits, frequency, symptoms, testing, AMR and lower effectiveness against gonorrhoea, users may treat it as universal insurance after any contact. CLO and NGO accounts showed that information may spread through online chats, social media, friends and informal advice faster than a formal pathway can establish safe rules. The main risk therefore lies not in community awareness itself, but in an evidence-based regimen being reduced to self-managed advice to "take an antibiotic after sex".

A related shift could occur in broader prevention behaviour. Some respondents drew parallels with PrEP, which in certain circumstances changed attitudes towards condoms. The findings do not, however, indicate that such compensation is inevitable: most potential users regarded Doxy-PEP as an additional or backup tool for situations in which prior protection had failed, rather than a replacement for condoms, testing or treatment.

Communication about Doxy-PEP needs to remain simple without becoming misleadingly simplified. The basic message should immediately include its limits: Doxy-PEP is not treatment for symptoms, does not replace testing, does not provide equal protection against all bacterial STIs, is not intended for daily or frequent use, and should be taken within a defined window after a specific risk. Community communication requires brief, accessible language, while service delivery requires an algorithm that helps distinguish appropriate post-exposure use from situations requiring testing or treatment.

4.5.4. Benefit to the user ↔ AMR and limited visibility of gonorrhoea

The fourth dilemma concerns the balance between immediate benefits for users and long-term public health risks. For MSM and TGW, the potential benefits of Doxy-PEP were concrete and immediate: reducing the risk of syphilis or chlamydia, being able to act after a contact, psychological relief, greater autonomy in situations involving unequal negotiating power, and a lower likelihood of needing a complex, expensive or stigmatising treatment pathway. Doxy-PEP therefore addresses a genuine gap between relatively structured HIV prevention and weaker prevention of bacterial STIs.

Healthcare providers and stakeholders needed to weigh this individual benefit against AMR risks and principles of rational antibiotic use. Gonorrhoea was central to this dilemma: Doxy-PEP effectiveness against it is lower and less consistent, while local data on tetracycline susceptibility in N. gonorrhoeae remain limited in Ukraine. Users' sense of "additional protection" therefore needs to be combined with an honest explanation that Doxy-PEP is not universal protection against all STIs.

The AMR dilemma also depends on whether the system can observe the consequences of implementation. Existing AMR surveillance in Ukraine is more commonly conceptualised in relation to hospital infections, healthcare-associated pathogens, firearm injuries and septic conditions. Doxy-PEP raises a different question: whether the system can monitor susceptibility and resistance in the context of sexual health, particularly for gonorrhoea, among populations that do not always reach laboratory diagnostics.

Safeguards therefore need to match the system's actual capacity. During a pilot, important components include candidacy criteria, frequency limits, regular testing, a clear pathway for symptoms, recording of repeat requests, and gradual inclusion of laboratory or surveillance components where feasible. Doxy-PEP may have genuine value for people with recurrent risk, but for this reason it needs to be implemented as a managed preventive practice capable of accumulating data on use, testing and, where possible, antimicrobial susceptibility in N. Gonorrhoeae.

4.5.5. Confidentiality ↔ minimum sufficient record-keeping

The fifth dilemma concerns confidentiality, accountability and the pilot's ability to learn during implementation. For potential users, confidentiality was part of accessibility because Doxy-PEP could be interpreted by others as a marker of an STI, condomless sex or "risky" sexuality. For TGW, identity documents, misgendering and previous discrimination were additional concerns. Under wartime conditions, the risk of unwanted disclosure also intersected with fear of TRSSCs and the mobilisation context.

Doxy-PEP cannot, however, function as a safe programme intervention without some accountability. The programme needs to understand who receives the medication, whether they meet the criteria, how often they use it, whether they return for testing, whether they have symptoms, adverse reactions or recurrent STIs, and whether signs of incorrect use emerge. If no information is collected, the programme loses its capacity to manage risks. If too much information is collected or becomes highly visible across the broader medical system, people may avoid the formal pathway.

Monitoring within this model should be a pilot-learning tool rather than merely a reporting requirement. Data on frequency of use, return for testing, repeat requests, symptoms, refusals, pathway attrition and team workload are needed to refine the algorithm rather than only confirm that implementation occurred. Excessively complex reporting could burden the same teams expected to provide a trusted first point of contact, while excessive detail about private lives could push users towards informal access.

The model should therefore be based on minimum sufficient and useful data – enough to support safety, monitoring of frequency and testing, and decisions about scale-up, but not so detailed as to risk disclosure of sexual orientation, gender identity or sexual practices. Users need a clear explanation of which data are collected and why: not for control or judgement, but to support safe antibiotic use, links to testing and programme improvement. Confidentiality and accountability are not opposites when record-keeping is limited, protected and clearly explained.

4.5.6. Equitable access ↔ limits of the evidence base

The sixth dilemma concerns how to define eligibility for Doxy-PEP without turning targeting into a barrier while remaining within the available evidence base. Overly narrow criteria may exclude people with genuine risk: those without a recently confirmed STI, those not receiving PrEP or ART, people who do not disclose their identity, and those who avoid testing because of stigma, cost, the mobilisation context or negative experiences of healthcare. Targeting should not be reduced to formal markers that are easy to document but do not always reflect actual risk.

An excessively broad interpretation is also problematic. The current international evidence on Doxy-PEP effectiveness primarily concerns MSM and TGW, and there is insufficient basis for transferring the approach to other populations without specific justification. Stakeholders recognised a broader potential need but also acknowledged Ukraine's limited capacity to conduct its own clinical studies under current conditions. A lack of local evidence is not an argument for uncontrolled expansion of access; instead, it reinforces the need for cautious, phased and well-documented implementation among populations with the strongest evidence and programmatic rationale.

The findings indicate that the Doxy-PEP model should be risk-oriented within evidence-supported target populations. Candidacy may consider a recent or recurrent STI, repeated condomless contacts, group sex, chemsex, sex parties, paid sex, a large number of partners, engagement with PrEP or ART pathways, and circumstances in which risk is genuine but not always formally documented. Criteria should avoid stigmatising labels and should not require excessive disclosure of private details. For populations outside the current evidence base, a separate research or analytical component would be more appropriate than automatic inclusion in the service algorithm.

4.5.7. STI expertise ↔ a stigma-free point of entry

The seventh dilemma concerns how to combine STI expertise with a pathway acceptable to MSM and TGW. Unlike HIV services, where relatively structured pathways already exist for PrEP, ART, testing and NGO navigation, the system for prevention, diagnosis, treatment and monitoring of bacterial STIs remains less coherent. Regular HIV or syphilis testing does not necessarily mean systematic screening for gonorrhoea or chlamydia. Laboratory diagnostics are often paid for or linked to private laboratories, while pathways for people with symptoms depend on the individual doctor or facility.

From a clinical perspective, Doxy-PEP cannot be introduced solely as an addition to HIV prevention because it concerns bacterial STIs, symptoms, diagnosis, treatment, recurrent infections and AMR surveillance. Dermatovenereologists and other STI professionals have expertise needed to distinguish prevention correctly from treatment. These pathways are not, however, always the first trusted point of entry for MSM and TGW: they may be associated with stigma, inappropriate communication, risks of disclosure or the need to explain sexual practices without assurance of respectful treatment.

STI expertise and diagnostic capacity therefore need to be mandatory parts of the pathway, but not necessarily its first point of entry. NGOs, CLOs, PrEP and HIV services may remain the entry points where a person receives initial information and support, while dermatovenereologists and laboratory services are incorporated through training, clinical algorithms, referrals and treatment pathways. This model keeps Doxy-PEP connected to STI expertise without constructing access around a service that some potential users regard as inaccessible.

4.5.8. Division of roles ↔ resource capacity of the pathway

The eighth dilemma concerns who performs the different functions within the Doxy-PEP pathway and whether the system has sufficient capacity to sustain that division. No participant group regarded implementation as the responsibility of a single actor. NGOs provide trust and first contact; CLOs provide community legitimacy and can translate medical messages into community language; HIV doctors and PrEP services have biomedical prevention experience; dermatovenereologists provide STI expertise; and laboratories provide diagnostic and, to some extent, AMR capacity. Without clear role boundaries, NGOs may effectively assume clinical decision-making, doctors may receive additional workload without an algorithm, and CLOs may circulate information without adequate support from the medical system.

An overly complex division of roles could also make the pathway unworkable. If obtaining Doxy-PEP requires passing through several institutions, repeatedly explaining sexual behaviour or waiting for consultations without clear navigation, the post-exposure rationale will be lost. Situations in which a person has already taken an antibiotic independently, has symptoms, refuses testing, previously obtained the medication elsewhere or fears that their data will be shared require rapid access to a more experienced clinician, discussion of a complex case or modification of the pathway.

This tension is particularly acute amid staff shortages, burnout, wartime pressures and competition between programme tasks. NGOs and healthcare providers already combine testing, PrEP navigation, ART support, humanitarian assistance and work with internally displaced people. Doxy-PEP therefore cannot be treated as a minor addition to existing duties. A pilot needs to assess both teams' knowledge of Doxy-PEP and the pathway's ability to operate as a coordinated system with a realistic workload, clear responsibility boundaries and a mechanism for updating algorithms.

4.5.9. Financial accessibility ↔ sustainability of the full service cycle

The ninth dilemma concerns the financial logic of Doxy-PEP. The cost of doxycycline itself was not considered prohibitive by most respondents, and some suggested that payment could encourage more deliberate use. Charging for Doxy-PEP may, however, conflict with the approach to prevention for key populations in Ukraine, which has largely developed as free of charge or donor-supported. If Doxy-PEP is available only through out-of-pocket payment, this may create inequalities for people with unstable incomes, displacement or recurrent higher-risk situations.

The actual cost of the pathway extends beyond the tablets. High-quality implementation requires counselling, risk assessment, STI testing, follow-up contact, NGO or CLO navigation, management of adverse effects, responses to symptoms, monitoring of use frequency and team training. An inexpensive medication therefore does not make the intervention inexpensive. A fully free model also requires caution: it needs to be financially sustainable, should not encourage stockpiling medication "just in case", and should not separate Doxy-PEP from criteria, counselling and testing, particularly if teams are given quantitative coverage targets.

The findings support a mixed approach: the medication itself may be partly self-financed by those able to purchase it, while counselling, referral and testing should be supported for people for whom even a moderate medication or laboratory cost is a barrier. During a pilot, the full cost of the pathway needs to be assessed, including doctors' time, social workers' time, communication materials, diagnostics, repeat contacts, monitoring and coordination. This full cost will determine whether Doxy-PEP can become a sustainable service after donor-supported initiation.

4.5.10. Advance supply ↔ control of frequency and leftover medication

The tenth dilemma concerns what happens after the medication is dispensed. For potential users, a small advance supply of Doxy-PEP appeared practically logical: the post-exposure window is not always compatible with actual access to a doctor or pharmacy at night, during weekends, during an air-raid alert, under curfew restrictions or because of fear of travelling through the city. Under these circumstances, already having the medication at home may determine whether the regimen is genuinely usable.

An advance supply creates its own risks. Leftover tablets may accumulate, be given to friends or partners, be taken after symptoms appear instead of seeking medical care, or be used more frequently than agreed. This risk is particularly relevant in Ukraine, where antibiotics are formally prescription-only but are often accessible through pharmacies or acquaintances in practice. Standard pharmacy packs containing more tablets than a single dose also make leftover medication a practical rather than theoretical concern.

Completely rejecting an advance supply of medication may make the post-exposure regimen less realistic, while an uncontrolled supply increases the likelihood of antibiotic use outside the pathway. A more balanced model would allow a limited quantity to be provided after an initial consultation, with clear instructions on the maximum frequency of use, actions to take if symptoms appear, the need for testing and the requirement to report use at the next contact. Service design should also consider the dispensing format: the number of tablets, the possibility of providing a limited number of doses, labelling instructions, and the mechanism for returning to consultation. In such a model, an advance supply supports the post-exposure rationale of Doxy-PEP without becoming an uncontrolled community reserve of antibiotics.

Taken together, these dilemmas show that Doxy-PEP implementation in Ukraine should not be a one-off decision about access to doxycycline, but a managed process of pathway development. Based on the findings, the most justified approach is a hybrid model in which Doxy-PEP is accessible to MSM and TGW with relevant risk, but remains medically explained, linked to testing, protected in terms of confidentiality, safeguarded against excessive use, financially realistic and sufficiently flexible for wartime and community conditions. Such a model requires gradual strengthening of STI diagnostics, dermatovenereology referral, laboratory capacity, clear division of roles between NGOs, CLOs and healthcare professionals, and minimum feasible AMR monitoring, particularly for gonorrhoea. For populations outside the current evidence base, Doxy-PEP should be considered through separate evidence generation rather than automatic expansion of the service model. These tensions need to remain visible in the design of a Doxy-PEP pilot so that the future model preserves user accessibility, clinical responsibility, programme manageability, financial realism and the principles of rational antibiotic use.

5 CONCLUSIONS

The study found that Doxy-PEP appears acceptable and potentially feasible for MSM and TGW, although this acceptability is conditional. Potential users viewed it as an additional tool after a higher-risk contact, a way to reduce anxiety, act in situations where control over sexual risk was incomplete, and potentially avoid some bacterial STIs. Their willingness to consider Doxy-PEP, however, almost always depended on a clear medical rationale: who it is appropriate for, how often it can be used, how it can be combined with PrEP, ART, hormone therapy and other medications, which adverse effects may occur, and why it does not replace testing or treatment.

Professional groups also generally did not reject Doxy-PEP as an approach, but assessed it through the conditions required for safe implementation. For healthcare providers, the central issues were clinical boundaries, contraindications, pathways for symptomatic patients, responsibility for antibiotic prescribing and AMR risks. For NGOs and CLOs, the main considerations were trust, confidentiality, clear communication, community legitimacy and the practical accessibility of the service within the post-exposure timing window. For stakeholders, the principal concerns remained the regulatory framework, financing, monitoring, links to STI diagnostics and the ability to generate local evidence for subsequent decisions.

The service, clinical and system conditions required for a controlled Doxy-PEP pilot in Ukraine exist, but remain uneven. The most developed foundation is the HIV/PrEP/ART infrastructure, together with friendly doctors, NGO navigation and CLOs that are already in contact with some people facing relevant risks. Components related to bacterial STIs are weaker: diagnosis of gonorrhoea and chlamydia is less accessible and less systematic, dermatovenereology pathways are not always free from stigma, the private sector is not fully visible to surveillance, and AMR monitoring is poorly integrated into sexual health services.

The central conclusion of the study is that the acceptability and feasibility of Doxy-PEP in Ukraine depend not on the availability of doxycycline itself, but on the model through which access is organised. The findings most strongly support a hybrid model combining clinical decision-making with NGO and CLO navigation, confidential communication, links to STI testing, flexible access formats and minimum feasible monitoring of use and AMR risks.

Doxy-PEP should not be regarded as ready for broad implementation without prior piloting. The findings support a controlled, phased pilot within selected pathways and locations, where demand, eligibility, correct use, return for testing, workload for teams, confidentiality, frequency of use and minimum AMR signals can be assessed. The pilot should be designed not merely to demonstrate that the service can be delivered, but to generate local evidence for decisions about the appropriateness, conditions and limits of further integration.

Doxy-PEP may therefore address an important gap between the more developed HIV prevention system and the less structured prevention of bacterial STIs in Ukraine. Its potential can be realised only if the medication remains connected to medical assessment, testing, community trust, confidentiality, team training, management of frequency of use and rational antibiotic use.

6 RECOMMENDATIONS

The recommendations below outline the minimum conditions for a controlled Doxy-PEP pilot in Ukraine. They are intended to support the development of a model that can function safely under real service conditions and generate evidence for subsequent programme and regulatory decisions. Detailed operational documents – including a clinical protocol, allocation of responsibilities between partners, a monitoring system and communication materials – should be developed as a separate stage involving clinical, programme and laboratory professionals and community representatives.

1. **Develop and implement a controlled Doxy-PEP pilot within selected pathways and locations.** The pilot should be limited in scale but sufficiently diverse to test several realistic entry points: PrEP and ART services, friendly HIV clinics, NGO navigation, CLOs and referral to STI specialists. Any decision on subsequent scale-up should be based on pilot evidence rather than solely on the existence of international recommendations or demand within communities.

2. **Develop a single clinical and service-delivery algorithm for Doxy-PEP.** The algorithm should define candidacy criteria, dosage, the timing window, the maximum acceptable frequency of use, contraindications, compatibility with PrEP, ART, hormone therapy and other medications, actions required when symptoms are present, the pathway following a positive test, rules for repeat access and the boundaries of responsibility between different actors. It should state explicitly that Doxy-PEP is not STI treatment and should not be used as pre-exposure or daily antibiotic prophylaxis.

3. **Apply risk-based access criteria within evidence-supported populations.** The pilot should focus on MSM and TGW with relevant risk of bacterial STIs. Criteria should consider behavioural and clinical factors rather than identity or PrEP/ART status alone, including a recent or recurrent STI, repeated condomless contacts, group sex, chemsex, sex parties, paid sex, a large number of partners or other circumstances involving recurrent or high risk. The criteria should be formulated without stigma and without requiring excessive disclosure of private details.

4. **Establish a hybrid access pathway with a clear division of roles.** The clinical decision regarding Doxy-PEP should remain with a doctor or another clinically authorised professional, while NGOs and CLOs provide initial information, navigation, support, testing reminders and assistance with returning to services. The pathway should permit a rapid response after an exposure through telephone, messenger, online consultation or a previously agreed-upon regimen, while directing people to in-person and laboratory assessment when symptoms, a positive test or frequent repeat requests are present.

5. **Provide a minimum package of STI diagnostics and referral.** The pilot should not be limited to prescribing doxycycline. It should include accessible syphilis testing and a realistic pathway for diagnosing gonorrhoea and chlamydia, taking account of the anatomical sites involved in sexual contact. Friendly referral points to dermatovenereologists or other STI specialists should be identified in advance, particularly for symptomatic cases and positive results.

6. **Strengthen AMR surveillance, with particular attention to gonorrhoea, and incorporate a feasible AMR component into the pilot.** The pilot should include AMR monitoring proportionate to available laboratory capacity, with particular attention to gonorrhoea. Priority data should include the frequency of Doxy-PEP use, recurrent STIs, symptomatic cases, gonorrhoea diagnoses, test results and antimicrobial susceptibility data where feasible. The pilot should also be used to identify practical mechanisms for linking Doxy-PEP monitoring with broader STI and AMR surveillance and for improving the availability of local data on gonococcal resistance. AMR surveillance should not operate as a prerequisite or barrier before every dose, but as part of programme learning and the evidence used to guide subsequent implementation and strengthen STI prevention more broadly.

7. **Develop shared training materials for healthcare providers, NGOs and CLOs.** Training should cover more than the dosing regimen. It should include candidacy criteria, adverse effects, AMR, compatibility with other medications, pathways for symptomatic patients, frequency of use, trans competence, confidentiality and non-moralising communication. NGOs and CLOs need brief first-response algorithms covering what to tell someone seeking support after an exposure, when to refer them to a doctor, when Doxy-PEP is inappropriate and how to avoid reducing the message to "two pills after sex".

8. **Establish proportionate and confidential pilot monitoring.** Monitoring should collect the information required for programme management and decisions about scale-up: who seeks the service, whether they meet the criteria, which pathway they use to receive counselling, whether they take the medication within the timing window, how often they use it, whether they return for testing, and whether they report symptoms or adverse reactions. Record-keeping should be limited to the minimum necessary, protected and clearly explained to users so that it does not push them towards informal access.

9. **Finance the full service cycle rather than the medication alone.** The pilot budget should cover clinical time, NGO and CLO navigation, STI testing, team training, communication materials, monitoring, coordination, supervision and management of repeat or complex cases. For people with unstable incomes, access to counselling and basic testing should be free or low-cost. Self-purchase of the medication may be considered for those able to afford it, but should not replace financial support for the essential components of the pathway.

10. **Predefine the pilot objectives, success criteria and conditions for scale-up.** Before the pilot begins, partners should agree what the pilot is intended to demonstrate, what success would look like, which indicators will be used, and what findings would support continuation, modification or scale-up. Assessment should extend beyond demand and the number of doses dispensed to include whether users meet the eligibility criteria, correct use, links to testing, frequency of use, workload for teams, confidentiality, the pathway's ability to respond to symptoms and minimum AMR signals. Scale-up should remain conditional on the pilot demonstrating a manageable, safe and practically feasible model.

APPENDIX 1. International recommendations for prescribing and monitoring Doxy-PEP

Organization	Year	Target Population	Eligibility Criteria	Medication Supply	Monitoring Requirements
German STI Society [40]	20 December 2023	MSM and TGW who have sex with men	Current use/clinical indication for HIV PrEP or diagnosed HIV infection **and** ≥1 additional factor: recurrent syphilis; recurrent *(symptomatic)* bacterial STIs in the past 6 months; ≥10 male partners in the past 6 months; stimulant use during sex *("chemsex")*; group sex	Not specified	Not specified
Australian Society for HIV, Viral Hepatitis, and Sexual Health Medicine [62]	13 March 2024	Gay, bisexual, and other MSM at elevated risk of syphilis	Diagnosed syphilis in the past 6-12 months **or** ≥2 bacterial STIs *(excluding syphilis)* in the past 6-12 months **or** anticipated high-risk sexual activity *(sex parties, multiple casual partners)*	Supply for 3-6 months, followed by reassessment	Every 3 months: testing for syphilis, gonorrhoea, and chlamydia; additional testing if symptomatic
Centers for Disease Control and Prevention [63]	6 June 2024	Gay, bisexual, and other MSM; TGW	≥1 bacterial STI *(syphilis, chlamydia, or gonorrhea)* in the past 12 months	Number of doses based on anticipated sexual activity until next visit; reassessment every 3-6 months	At baseline and every 3-6 months: anatomical-site testing for bacterial STIs; HIV screening for HIV-negative individuals
Oregon Board of Pharmacy [64]	June 2024	Gay, bisexual, and other MSM; TGW	≥1 bacterial STI *(syphilis, chlamydia, gonorrhoea)* in past 12 months and condomless anal/oral/vaginal sex with ≥1 cisgender male or transgender female partner in past 12 months. Consider Doxy-PEP if: ≥1 bacterial STI *(syphilis, chlamydia, gonorrhoea)* in past 12 months but no condomless sex with ≥1 cisgender male/trans female partners, if such exposure is anticipated **OR** No bacterial STI *(syphilis, chlamydia, gonorrhoea)* with ≥1 cisgender male/trans female partners in past 12 months, with or without condomless sex in past 12 months, and anticipated high-risk behavior *(multiple partners, group sex, chemsex, sex parties)*	Recommended initial maximum supply: 14×200 mg, adjusted to expected frequency of sexual activity. Continued supply every 3 months *(up to 6 months)* following negative STI tests	Every 3 months: NAAT testing for gonorrhoea and chlamydia at exposure sites; syphilis serology; HIV screening *(if previously undiagnosed)*

Organization	Year	Target Population	Eligibility Criteria	Medication Supply	Monitoring Requirements
San Francisco Department of Health [65]	12 September 2024	Cisgender men, TGW, and other people assigned male at birth	≥1 bacterial STI in the past 12 months **and** condomless anal/oral sex with ≥1 partner assigned male at birth. Consider Doxy-PEP for cisgender men, transgender women, and individuals of any sex assigned at birth with ≥2 male partners in past 12 months who engaged in condomless anal/oral sex, regardless of STI history	Not specified	Every 3 months: gonorrhoea and chlamydia testing at exposure sites, syphilis testing, and HIV screening *(if undiagnosed)*
New York State Department of Health AIDS Institute [33]	15 October 2024	Cisgender men and TGW who have sex with men	Condomless sex with partners assigned male at birth **and** a bacterial STI in the past 12 months, or ongoing risk of acquiring STIs	30-90 day supply: up to 90 doses *(200 mg delayed-release)* or up to 180 doses *(100 mg immediate-release)* for a 3-month period	Every 3 months: testing for HIV *(if undiagnosed)*, syphilis, gonorrhoea, and chlamydia *(at exposure sites)*, and refill of Doxy-PEP. Baseline and annual hepatitis B screening; monitoring of liver/kidney function and CBC for long-term users
Public Health – Seattle & King County [43]	January 2025	Cisgender men, TGW, and non-binary people assigned male at birth who have sex with men	≥1 bacterial STI *(syphilis, chlamydia, gonorrhoea)* in past 12 months and condomless sex with multiple partners. Priority for ≥1 bacterial STI in past 12 months and/or history of early syphilis. Consider Doxy-PEP for anticipated high-risk behavior *(sex parties, travel, new/unknown partners, transactional sex)*	Number of doses determined individually based on anticipated use	Every 3-6 months: bacterial STI testing. HIV screening at baseline and follow-up *(if undiagnosed)*. Routine laboratory monitoring not required
British Association for Sexual Health and HIV [53]	12 June 2025	Cisgender gay, bisexual, and other MSM; TGW at high risk of syphilis	≥1 bacterial STI *(syphilis, chlamydia, gonorrhoea)* in past 12 months **and** multiple new, casual, or one-time partners *(including group sex or chemsex)* in past 3 months	Number of doses determined individually based on anticipated use	Routine STI screening per guidelines; additional liver/kidney monitoring not recommended

APPENDIX 2. Conceptual framework for acceptability

Component	Subcomponent	Element	Theoretical Alignment
1. Doxy-PEP related factors	1.1. Product characteristics	1.1.1. Formulation *(doxycycline tablet)*	Intervention coherence, Perceived effectiveness, Ethicality (TFA) Product characteristics, Efficacy, Dosing regimen (PAF)
		1.1.2. Route and frequency *(oral, single-dose use)*	
		1.1.3. Dose *(200 mg)*	
		1.1.4. Timing *(24-72 hours post-exposure)*	
		1.1.5. Side effects *(GI symptoms, photosensitivity)*	
		1.1.6. Perceived antimicrobial resistance risks	
	1.2. Delivery characteristics	1.2.1. Place of provision *(PrEP clinics or ART sites)*	Burden, Opportunity cost (TFA) Delivery mechanism, Product-associated norms (PAF)
		1.2.2. Confidentiality and privacy	
		1.2.3. Compatibility with other medications *(PrEP, ART, hormone therapy)*	
		1.2.4. Prescription requirements	
2. Internal *(individual)* factors	2.1. Perceived benefits	2.1.1. Knowledge and understanding of the product	Perceived effectiveness, Intervention coherence, Ethicality (TFA) Effect of product use on sexual encounter, Use attributes (PAF)
		2.1.2. Perceived safety and effectiveness	
		2.1.3. Awareness of preventive benefits *(reduced STI risk)*	
		2.1.4. Sense of control over personal risk	
		2.1.5. Benefit-risk balance	
		2.1.6. Comparative advantage vs other methods *(condoms, testing)*	

Component	Subcomponent	Element		Theoretical Alignment
	2.2. Perceived burden / difficulties	2.2.1. Cognitive burden	2.2.1.1. Complexity of dosing	Burden, Opportunity cost, Affective attitude (TFA) Use attributes, Economic burden (PAF)
			2.2.1.2. Remembering to take the dose	
		2.2.2. Emotional burden	2.2.2.1. Fear of side effects	
			2.2.2.2. Anxiety about antibiotics	
			2.2.2.3. Discreetness of use	
		2.2.3. Physical burden	2.2.3.1. Unpleasant symptoms	
			2.2.3.2. Impact on sexual activity	
		2.2.4. Financial burden	2.2.4.1. Cost of medication	
			2.2.4.2. Transportation costs	
			2.2.4.3. Time/opportunity costs	
	2.3. Self-efficacy	2.3.1. Sense of competence and control over use		Self-efficacy, Intervention coherence (TFA)
		2.3.2. Confidence in knowledge and skills		
		2.3.3. Confidence in adherence		
3. External factors	3.1. Interpersonal influences	3.1.1. Attitudes of sexual partners *(support / disapproval)*		Ethicality, Opportunity cost (TFA) Partner's attitude, Product-associated norms (PAF)
		3.1.2. Community norms *(peer experiences, recommendations)*		
		3.1.3. Attitudes of healthcare providers		
	3.2. Social influences	3.2.1. Stigma around HIV/STIs and antibiotic-based prevention		Ethicality, Opportunity cost (TFA) Social and structural context, Organizational influences (PAF)
		3.2.2. Cultural norms around "morality" of sexual behaviour		
		3.2.3. Availability of LGBT-friendly services		
		3.2.4. Impact of war, displacement, and instability		

APPENDIX 3. Conceptual framework for feasibility

Component	Key Subcomponents	Description
1. Contextual alignment *(Leadership/ Governance)*	1.1. Perceived need for Doxy-PEP among key populations and providers	Indicates environmental readiness, political will, and societal support
	1.2. Social and cultural acceptability	
	1.3. Understanding of antimicrobial resistance risks and "risk compensation"	
	1.4. Potential coverage and access channels	
	1.5. Political support from government and donors	
2. Programme integration *(Service Delivery & partly Financing)*	2.1. Feasible delivery models *(locations – clinics, NGOs, online platforms – and timing)*	Determines operational feasibility and integration into existing HIV/STI prevention services
	2.2. Alignment with existing services *(PrEP, ART, STI testing)*	
	2.3. Additional costs and funding needs	
	2.4. Compliance with policies and regulations	
3. Health workforce *(Health Workforce)*	3.1. Availability of trained staff and workload distribution	Reflects system's ability to deliver the intervention through competent, motivated providers
	3.2. Training needs *(STIs, antimicrobial prophylaxis, LGBT-sensitive counselling)*	
	3.3. Support, provider supervision, and motivation mechanisms	
4. Supply chain management *(Medical Products and Technologies)*	4.1. Procurement, registration, and stock management of doxycycline	Ensures sustained, safe access and responsible antibiotic use
	4.2. Storage and distribution conditions	
	4.3. Monitoring antibiotic use and dispensing control	
5. Monitoring and evaluation *(Information and Research)*	5.1. Integration of Doxy-PEP indicators into national AMR, STI, and HIV/PrEP reporting systems	Ensures accountability, evidence generation, and adaptive implementation
	5.2. Tracking side effects, coverage, and AMR events, including monitoring of N. gonorrhoeae AMR trends	
	5.3. Use of data to adjust policies and update clinical guidelines	

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Doxy-PEP Acceptability and Feasibility Study in Ukraine: Strengthening STI Prevention and Its Integration into HIV Care

Exploring the Potential of Doxycycline for STI Prevention in Ukraine

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