Piloting an integrated HIV, HCV and syphilis testing approach in community-based voluntary counselling and testing services in Slovakia

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ABSTRACT

Aim: Aim of the pilot was to increase HIV/HCV/syphilis testing and linkage to care of newly diagnosed persons, improve data collection and transfer using standard data collection tools in CBVCT services.

Methods: Integrated anonymous voluntary testing from blood for HIV, HCV and syphilis was realised using rapid tests in the period of 6 months (03/2019–08/2019). Participants with reactive results were advised to see a specialist for confirmatory testing and/or treatment.

Results: A total of 675 clients were tested for HIV, 410 for HCV, and 457 for syphilis. Participants' median age ranged from 24 to 35.6 (IQR: 24), 75.3% of them were men, 23.7% were women, and 0.6% identified as transgender. In terms of groups at risk 48.9 % of 675 clients were men who have sex with men (MSM), 0.3 % sex workers (SW), 9.0 % people who inject drugs (PWID), 2.4 % migrants (Mi) and the rest of clients (8.3 %) belonged to groups at combined risk. Pilot revealed HIV, HCV and T. pallidum infections in 0.4 %, 2.4 % and 1.8 % of clients, respectively. Just 2 clients, confirmed HIV-positive, were linked to care. The highest prevalence of HIV (4.2 %), HCV (30.8 %) and syphilis (7.1 %) was found among MSM/Mi, PWID and SW/PWID, respectively. Condomless intercourse with SW, PWID, MSM and HIV-positive person in the last 12 months was reported by 5/92, 41/82, 3/78 and 0/88 of responding clients, respectively. Core indicators were included in the yearly national epidemiological report.

Conclusions: Pilot revealed the need to support integrated CBVCT to overcome barriers in confirmatory testing and linkage to care and to integrate core data of monitoring and evaluation (M&E) testing framework at CBVCT services into a national surveillance and M&E systems in Slovakia.

KEYWORDS
integrated testing – HIV – HCV – syphilis – Slovakia

SÚHRN

Valkovičová Staneková D., Wimmerová S., Fernàndez-López L., Hábeková M., Kovářová A., Takáčová M., Casabona J.: Riadenie integrovaného prístupu testovania HIV, HCV a syfilisu v komunitných dobrovoľných poradenských a testovacích službách na Slovensku

Ciele: Cieľom pilotného projektu bolo zvýšiť testovanie ako aj prepojenie so zdravotnou starostlivosťou o novodiagnostikované osoby s infekciou HIV/HCV/syfilisu a tiež zlepšiť zber a prenos údajov pomocou štandardných nástrojov zberu údajov z komunitných centier poskytujúcich dobrovoľné poradenstvo a testovanie (CBVCT) do národného epidemiologického a monitorovacieho systému.

Metódy: Integrované dobrovoľné anonymné testovanie z krvi na HIV, HCV a syfilis bolo realizované pomocou rýchlych testov v období 6 mesiacov (03/2019 až 8/2019). Účastníkom s reaktívnymi výsledkami sa odporučilo, aby navštívili špecialistu za účelom potvrdenia diagnózy a nasadenia terapie.

Výsledky: Otestovaných bolo 675 klientov na HIV, 410 na HCV a 457 na syfilis. Medián veku účastníkov sa pohyboval od 24 do 35,6 (IQR:24), 75,3 % z nich bolo mužov, 23,7 % žien a 0,6 % transrodových ľudí. Z hľadiska rizika akvírovania testovaných infekcii 48,9 % zo 675 klientov boli muži majúci styk s mužmi (MSM), 0,3 % osoby pracujúce v sex-biznise (SW), 9,0 % injekční užívatelia drog (PWID), 2,4 % migranti (Mi) a 8,3 % klientov uvádzalo kombináciu týchto rizík. Pilotný projekt odhalil infekciu HIV u 0,4 %, HCV u 2,4 % a T. pallidum u 1,8 % klientov. Len 2 klienti, s potvrdenou HIV infekciou boli prepojení s následnou zdravotnou starostlivosťou. Najvyššia prevalencia HIV bola zistená u MSM/Mi (4,2 %), HCV u PWID (30,8 %) a syfilisu u SW/PWID (7,1 %). Bezkondómový styk so SW, PWID, MSM a HIV pozitívnymi za posledných 12 mesiacov uviedlo 5/92, 41/82, 3/78 a 0/88 odpovedajúcich klientov. Výsledky štúdie boli zahrnuté do ročnej národnej epidemiologickej správy.

Záver: Pilotný projekt odhalil potrebu podpory integrovaného testovania v CBVCT, prekonania prekážok pri potvrdzujúcom testovaní a prepojení so zdravotnou starostlivosťou ako aj potrebu integrácie základných údajov v rámci monitorovania a hodnotenia (M&E) testovania v CBVCT do národných systémov surveillance na Slovensku.

KĽÚČOVÉ SLOVÁ
integrované testovanie – HIV – HCV – syfilis – Slovensko

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INTRODUCTION

Slovakia is one of the countries with the lowest HIV prevalence in Europe. Since the beginning of the HIV epidemic in 1985 to 2020, HIV infection was confirmed in 1284 persons (1061 Slovak citizens and 223 foreigners). Of 1061 Slovaks (953 men, 108 women), 129 (116 men, 13 women) had AIDS, and 58 died due to AIDS. One hundred ten cases of HIV infection were newly diagnosed in 2020 [1]. However, in the last years HIV incidence in Slovakia has slowly increased, from 86 newly diagnosed persons in 2015 (79 Slovaks, 7 foreigners) to 110 in 2020 (83 Slovaks, 27 foreigners) [2].

From 1985 until 2020, the spread of HIV infection was mainly characterized by two phenomena: most cases were men (85–90%) and most of HIV cases were Slovak citizens infected by sexual intercourse (almost 90%). Heterosexual condomless intercourse has been the second most reported mode of transmission (20%). Sex between men was the predominant mode of HIV transmission in Slovakia (70 % in 2020), while HIV transmission due to injection drug use accounted for 1% (18 cases) of HIV diagnoses [1]. Epidemiological surveys indicated 0.2% prevalence of HCV [3] and 0.48 incidence of syphilis in Slovakia in 2019 [4].

Although men who have sex with men (MSM) are in the highest risk of contracting HIV in Slovakia, LGBT rights organizations are not heavily involved in HIV prevention. There are four community-based voluntary counselling and testing (CBVCT) services working in Slovakia, but only one of them, Checkpoint Lighthouse Slovakia, primarily targets MSM. Odyseus, Prima, and Storm, non-governmental organisations (NGOs) working in harm reduction, are targeting people who inject drugs (PWID) and sex workers (SW) on the streets of Bratislava and Nitra. All these NGOs' occasionally offer HIV, HCV, HBV and syphilis testing and through harm reduction programmes contribute to a relatively stable trend in the incidence of HIV among PWID.

Community-based testing contributes to early diagnosis, particularly in vulnerable populations; thus, community-based testing of HIV, STIs, hepatitis B and hepatitis C virus should be included into the framework of national surveillance and measurement and evaluation (M & E) systems. This inclusion should facilitate the gathering and analysis of standardised data while maintaining a balance between the need to be efficient and obtaining the minimum required information. ECDC is providing this evidence-based guidance on integrated testing of hepatitis C (HCV), HIV, and hepatitis B (HBV) to assist Member States in their efforts to improve case detection and testing programme uptake as part of the global effort to eliminate viral hepatitis and HIV as public health threats by 2030 [5].

EU project INTEGRATE "Joint Action on integrating prevention, testing and linkage to care strategies across HIV, viral hepatitis, TB and STIs in Europe" allowed to conduct pilot studies in 6 EU countries, including Estonia, Poland, Serbia, Slovenia, Slovakia and Spain [7]. The overall objective of Integrate was to increase early diagnosis and linkage to prevention and care not only for HIV and viral hepatitis, but also for tuberculosis and sexually transmitted infections (STI) in EU Member States by 2020. One of the objectives was to support the integration of testing and linkage to care data obtained at CBVCT sites into national surveillance and M&E systems for HIV, STIs, hepatitis B and hepatitis C virus [8, 9]. In Slovakia, the INTEGRATE project's goals focused on increasing HIV/HCV/syphilis testing, linking to care for newly diagnosed individuals, supporting the integration of data obtained at CBVCT sites into the national epidemiological information system (EPIS), and enhancing prevention strategies.

This article presents extended INTEGRATE's results concerning the national pilot in Slovakia, which focused on extended HIV/HCV/syphilis testing, improved data collection, and transfer using of standard data collection tools in CBVCT services.

METHODS

Integrated voluntary anonymous HIV/HCV/syphilis CBVCT was realised in Slovakia during the period of 6 months (03/2019 to 08/2019) by 3 NGOs: "Odyseus" and "Prima" – engaged in street work and/or needle exchange provision and "Checkpoint Lighthouse". All clients involved in the project requested a testing voluntarily. COBATEST Network online data collection tools [10] implemented into practice during EU project Integrate were used to collect laboratory vs. socio-demographic data. It included an anonymous questionnaire derived from the COBATES Network that clients completed prior to testing either online or with the assistance of an NGO. The data analysed in the pilot project spans a six-month period (March 2019 to Au-

gust 2019). The indicators were estimated within that particular period. All infections were voluntarily and anonymously tested using EC-approved rapid tests: SD BIOLINE HIV-1/2 3.0, Abbott; Determine HIV-1/2 AG/AB Combo, Alere; Determine TP Syphilis, Alere; Multiples HIV ½ Syphilis Ab Test, bioLytical; INSTI HCV Antibody Test, bioLytical. In the case of an HIV-reactive result, CB-VCT services advised their clients to undergo confirmatory testing at the National Reference Centre for HIV/AIDS Prevention (NRC). Following EC-approved test kits were used for confirmation: Genscreen™ ULTRA HIV Ag – Ab (Bio-Rad), and HIV BLOT 2.2 (MP Diagnostics). In addition, participants with HCV/syphilis-reactive results were advised to see a specialist for confirmation testing and, if necessary, treatment. Using the IBM SPSS 28 programme, all test results were analysed concerning the socio-demographic information provided in the questionnaire.

RESULTS

During the study 675 people were tested for HIV, 410 for HCV and 457 for syphilis, with reactivity rates of 0.4% (n = 3), 2.4% (n = 10) and 1.8% (n = 8), respectively. In terms of gender 508 (75.3%) of 657 clients tested for HIV were males, 158 (23.4%) females, and 4 (0.6%) transgenders, 4 unknown (0.6%). The median age of participants was 29, IQR: 24–35.6 (men: 30, IQR: 25–37, women: 27, IQR: 23.55–32 and transgender: 29, IQR: 17.2–41.5). No significant difference was found between the incidence of any of the tested infections based on gender (Table 1). In terms of groups at risk out of 675 clients 330 (48.9%) were MSM, 2 (0.3%) SW, 61 (9.0%) PWID, 16 (2.4%) migrants (Mi). The rest of clients (8.3%) belonged to groups at combined risk: 9 (1.3%) MSM/SW, 3 (0.3%) MSM/PWID 24 (3.6%) MSM/Mi 19 (2.8%) SW/PWID, 1 (0.1%) MSM/SW/PWID (Figure 1).

Table 1. Results of rapid testing of HIV, HCV, and syphilis according to gender

Infection	HIV			HCV			Syphilis		
Gender	No. tested	No. reactive	% reactive	No. tested	No. reactive	% reactive	No. tested	No reactive	% reactive
Men	508	2	0.4	328	8	2.4	343	7	2.0
Women	160	1	0.6	81	2	2.5	128	1	0.8
Transgender	4	0	0.0	1	0	0.0	4	0	0.0
Not answered	3	0	0.0	0	0	n. a.	0	0	n. a.
Total	675	3	0.4	410	10	2.4	457	8	1.8

Explanatory notes: n. a. = not applicable

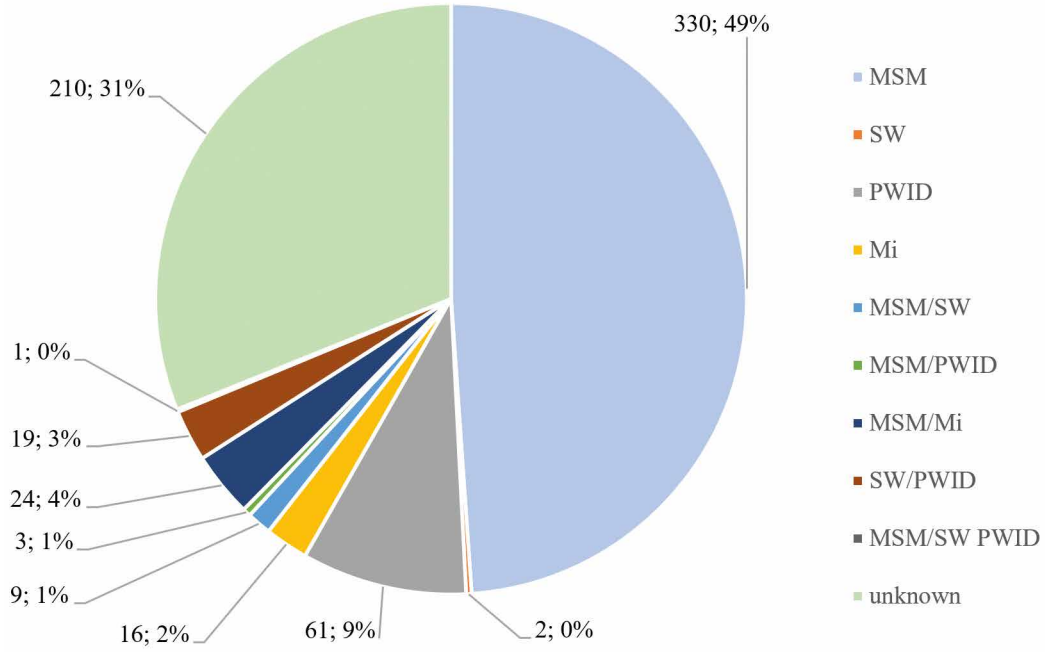

Figure 1. Distribution of clients according to groups at risk of HIV
Explanatory notes: MSM = men who have sex with men, SW = sex workers, PWID = people who inject drugs, Mi = migrants

The highest reactivity rate of HIV (1/40, 4.2%), syphilis (1/14, 7.1%), and HCV (38/26), 30.8 %) was found among MSM/Mi, SW/PWID and PWIDs, respectively. Two of 3 clients with HIV-reactive results were MSM, with one also being a migrant; the third client was female. HCV reactivity was detected entirely among 8 of 26 PWID (2 of them reported previous HCV infection) and by 2 of 10 PWID/SW. Regarding syphilis 5 of 8 men with reactive results were MSM, 1 MSM/migrant, 1 female SW/PWID and 1 man with unknown risk. Previous positivity for syphilis in clients with a reactive syphilis test was not reported. No coinfections were found during the pilot (Table 2).

Two of 3 clients with HIV-reactive results (which both MSM identified in Checkpoint were confirmed and linked to care, while 1 (a female) did not pass confirmatory testing. Both, MSM were HIV tested 12 months before to the visit, but not at the same facility. No one of these three HIV-positive persons were tested HIV-reactive before the pilot. Due to legal barriers (anonymous testing, lack of health insurance, clinicians' acceptance of CBVCT results), there was no evidence regarding subsequent confirmatory testing and possible treatment of individuals with HCV or syphilis reactive results. Two core indicators obtained during this study, number of HIV/HCV/syphilis tested persons and percentage of reactive results were included into the national epidemiological report, as the system only collects information on positive cases and not on all tests performed.

HIV testing of 675 clients was mostly conducted by Checkpoint (409, 60.6%), followed by the street work (206, 30.5%) and needle exchange programmes (60, 8.9%). HCV and syphilis testing was mostly offered in Checkpoint (240/410, 58.5% and 216/457, 47.3%, respectively). The most suitable testing site for reaching people with reactive results were needle exchange programmes for HCV (3/25, 12%) and Checkpoint and street work for syphilis (5/216, 2.3% and 1/47, 2.1%, respectively) (Table 3). In addition, 9/10 clients with HCV reactive results were PWID a PWID/SW reached by street work and /or by needle exchange programme.

Table 2. Results of rapid testing of HIV, HCV, and syphilis according to the groups at risk

Infection	HIV			HCV			syphilis		
People at risk	No. tested	No. reactive	% reactive	No. tested	No. reactive	% reactive	No. tested	No. reactive	% reactive
MSM	290.0	1.0	0.0	230.0	0.0	0.0	219.0	5.0	2.3
SW	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
PWID	46.0	0.0	0.0	26.0	8.0	**30.8**	47.0	0.0	0.0
Mi	16.0	0.0	0.0	9.0	0.0	0.0	13.0	0.0	0.0
MSM/SW	9.0	0.0	0.0	9.0	0.0	0.0	8.0	0.0	0.0
MSM/PWID	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
MSM/Mi	24.0	1.0	**4.2**	24.0	0.0	0.0	20.0	1.0	5.0
SW/PWID	17.0	0.0	0.0	10.0	2.0	20.0	14.0	1.0	**7.1**
MSM/SW/PWID	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0
Unknown	269.0	1.	0.4	97.0	0.0	0.0	132.0	1.0	0.8
Together	675.0	3.0	0.4	410.0	10.0	2.	457.0	8.0	1.8

Explanatory notes: MSM = men who have sex with men, SW = sex workers, PWID = people who inject drugs, Mi = migrants

Table 3. Results of rapid testing of HIV, HCV, and syphilis according to the testing site

Infection	HIV			HCV			Syphilis		
People at risk in CBVCT services	No. tested	No. reactive	% reactive	No. tested	No. reactive	% reactive	No. tested	No reactive	% reactive
Checkpoint	409	2	0.5	240	1	0.4	216	5	**2.3**
Street work	206	1	0.5	145	6	4.1	194	2	1.0
Needle exchange	60	0	0.0	25	3	**12.0**	47	1	2.1
Total	675	3	0.4	410	10	2.4	457	8	1.8

Explanatory notes: CBVCT = community-based voluntary counselling and testing

In terms of HIV testing within the past 12 months, 644 people responded, and of them 234 (36.3%) positively. Additionally, 78/651 (12%) of clients were HIV tested at the same location in the preceding 12 months. Condomless intercourse with SW, PWID, MSM and HIV-positive person in the last 12 months was reported by 5/92, 41/82, 3/78 and 0/88 of responding clients, respectively. Furthermore, 13 of 49 men and 13 of 39 women did not know HIV status of their partner.

DISCUSSION

The pilot was conducted in groups at high risk of HIV infection thanks to the close cooperation of outreach workers with health care services. It revealed a relatively low reactivity rate for HIV (0.4%) but higher for HCV (2.4%) and syphilis (1.8%). Even though two of the three individuals with HIV reactive results were MSM the rate of HIV reactivity in this group was relatively low comparing to previous studies provided in this high-risk group in Slovakia [11]. EU projects SIALON I (2008–2009) and SIALON II (2014–2015) aimed to implement HIV 2nd generation surveillance in MSM in European countries including Slovakia using time location sampling (TLS) and respondent-driven sampling (RDS) respectively. In Slovakia SIALON I and SIALON II reported higher prevalence in MSM 6.1% and 4.3% respectively using TLS and RDS method [12, 13]. In 2017, the subsequent study provided in the general population revealed that a group with the highest risk for HIV infection in Slovakia was not MSM but men who have sex with both men and women (MSMW) [14]. Unfortunately, in this pilot, the Cobatest questionnaire did not allow to focus deeply on this group with high- risk behaviour.

HCV infection was detected in 2.4% of clients, of which only in PWID (30.8%) and PWID/SW (20%). Similarly, in Western countries as well as in the Czech Republic, intravenous drug use represents the major factor in HCV transmission responsible for 50–80 % of newly diagnosed cases [15, 16]. Syphilis was diagnosed in only 1.8% of participants, with the highest rate in SW/PWID (7.1%) but not in PWID at any other risk. MSM without additional risk behaviour were shown to be 7.6 times more likely to contract syphilis than HIV. However, MSM/migrants were shown to have a greater but comparable risk of HIV than syphilis (4.2% vs. 5%, respectively). Therefore, comprehensive intervention strategies that address condom promotion, syphilis detection and treatment, and health education need to be tailored to this vulnerable population to prevent HIV and syphilis infections [17].

The risk of acquiring HIV and HCV infection did not differ by gender, but men were shown to be more at twofold higher risk of syphilis than women. These results could also be influenced by the inequality of the ratio of men and women involved in the study, with only about a quarter of the participants being women and more than half being MSM. However, almost one-quarter of the participants did not answer that they belonged to any of the defined high-risk groups or were infected with any of the tested infections.

Aim of our pilot was to describe participants awareness and risk behaviour as well. Condomless intercourse in the last 12 months was reported mostly with PWID. This data confirm that drug use is inextricably linked to the risk of STI transmission [18]. Only 26.5% of men and 33.3% of women did not know the HIV status of their partners, whereas in previous study conducted among clients asking for HIV testing for preventive reasons in Slovakia in 2017, this figure was over 60% for both sexes [14]. Persons at increased risk of HIV and STIs appear to be either reluctant to communicate the problem or not concerned about it. On the other hand, more participants in our pilot (36.3%) were tested for HIV in the previous 12 months than those in a study of the general population in 2017 (23.3%) [14]. On contrary, it points to the fact that people at higher risk of STIs are more aware of their risk and are therefore more frequently tested for HIV than the general population. In our pilot study, the proportion of MSM tested for HIV in the previous year was higher compared to that in the SIALON II study (48.1% vs. 37.2% respectively) [13] which points to enhanced prevention in this group in Slovakia.

Our pilot also allowed more actively incorporate CBVCT services, street work, and needle exchange programmes (NEP) services into HIV HCV and syphilis testing and counselling activities. Due to financial reasons, most of all infections were tested in CBVCT service, but the most successful sites for reaching PWID and detecting HCV reactive results have proven to be NEPs. Although providing HCV testing through NEP services seemed feasible and acceptable to PWIDs, previous research has shown that the impact of NEP services on HCV prevention in PWIDs remains unclear, and well-designed research studies employing standardized criteria and measurements are needed to clarify this issue [19].

Approximately one-third of respondents had been tested for HIV in CBVCT services also within previous 12 months, confirming that in Slovakia, similar to other countries, CBVCTs are popular testing locations, that play an important role in reaching individuals at high risk for HIV particularly for MSM [20, 24]. In addition, our pilot confirmed that needle exchange sites and streets are more suitable locations for testing PWID for HCV [22] and SW for syphilis [23] respectively.

During the pilot, 2 of 3 HIV-reactive cases were confirmed to be linked to care and the national epidemiological information system. However, only two core indicators obtained during this study, number of HIV/HCV/syphilis tested persons and the percentage of

reactive results, were included into the national epidemiological report, as EPIS only collects information on positive cases and not on all tests performed [7]. Although everyone with HCV/syphilis reactive results was advised to see specialists during the post-test counselling, the linkage to care for these clients remained unknown due to legal barriers (lack of health insurance practitioners' acceptance of CBVCT results). Therefore, it is necessary to overcome these obstacles, especially for uninsured and homeless people, and to improve and establish new circuits with the corresponding specialised care. Interventions that consider individual provider and health system level factors are required if secondary access NEP services are to become a suitable setting to initiate conversations with clients around HCV treatment and provide linkages to care [27].

Using a standardised data collection tool for CBVCT services ensured that CBVCT M & E indicators could be easily estimated. Therefore, one of the pilot's objectives was to implement standardised data collection tools in CBVCT services. This issue was resolved using COBATEST Network's free standardised data collection tool [10]. Its implementation enabled the assessment of the core indicators [25] i. e. the number of clients tested, the reactivity rate of client results, and for HIV, the percentage of clients linked to care, and included them into annual national epidemiological reports. In addition, COBATEST questionnaire allowed the description of client profiles.

Our pilot project was implemented at the time of the slowly growing HIV epidemic in the Slovak Republic. Despite this, we found a relatively low rate of new HIV cases. Even though this anonymous testing still remains a current and efficient prevention approach, as it eliminates barriers and the fear of testing. Using a standardised data collection tool for CBVCT services ensured that CBVCT indicators could be easily estimated among individuals with higher risk behaviour. Community-based testing contributes to early diagnosis, particularly in key populations; therefore, the national response to HIV STIs and HCV should include community-based testing in the national surveillance and measurement and evaluation (M&E) systems framework [5].

CONCLUSIONS

Integrated HIV/HCV/syphilis testing proved to be an effective tool for STI prevention in groups with high-risk behaviour in Slovakia. PWID and SW remain key groups at risk for HCV and the most successful sites for reaching them are streets and needle exchange sites. Syphilis and HIV are mostly spread among SW and MSM, respectively. Intensive intervention programmes emphasise STI screening and treatment, risk sexual behaviour reduction, and the support of integrated STI counselling and testing. Our findings indicate the need to focus these activities, particularly on risk groups, in the collaboration of CBVCT services with other health services. The topic of integrating community-based testing data into national surveillance and M&E systems has risen to the top of the agenda.

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