

THE ROLE OF VOLUNTARY COUNSELLING AND TESTING POINTS (VCTs) IN HIV DIAGNOSTICS – ANALYSIS OF VCTs ACTIVITY IN POLAND IN THE CONTEXT OF LOCAL AND EUROPEAN EPIDEMIOLOGY

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Abstract. Screening tests are now readily accessible, quick and highly sensitive. Diagnostics of HIV infections involves serological testing followed by confirmation tests by molecular biology methods (NAAT). Fast, accurate, anonymous and free HIV testing has been provided by Voluntary Counselling and Testing Points (VCTs) for over 20 years to any adult in Poland, regardless of nationality. Additionally, the educational activities are conducted aimed at informing people from various social backgrounds about HIV prevention and diagnostic possibilities, as well as other sexually transmitted infections (STIs). The aim of the article was to present the procedures for the operation of VCTs in Poland, their location, testing scheme and a summary of the activities that promote such points in the medical community. Between 2019 and 2023, 157,833 people registered for HIV testing in VCTs in Poland, of which 10,177 (6.45%) were foreigners. In the analyzed period, the number of tests among foreigners visiting VCTs in Poland almost doubled, from 1,552 in 2019 to 2,827 in 2023. In addition, a higher percentage of positive results was recorded among foreigners – 5.08% compared to Poles – 1.24%. The frequency analysis of positive results detection reported in VCTs vs. National Institute of Public Health NIH – National Research Institute showed that, on average 26% (2,342/8,891) of positive results in Poland from 2019–2023 were detected in the framework of tests carried out in VCTs. The operation of VCT points in Poland enables the reaching of a larger group of people, especially key adult populations. It is a valuable complement to routine diagnostics outside the health care system.

1. Introduction. 2. Organization of Voluntary Counselling and Testing Points in Poland. 3. Diagnosing HIV infection in Voluntary Counselling and Testing Points in Poland. 4. Summary of Voluntary Counselling and Testing Points activities in Poland 2019–2023. 5. Summary.

Keywords: Check Point, diagnostic, HIV, testing, voluntary counselling and testing points (VCTs)

1. Introduction

Despite advancements in medicine, HIV (Human Immunodeficiency Virus) infections continue to be a global issue. It is estimated that globally in 2022, the number of people living with HIV was 39 million (33.1–45.7 million), with two-thirds (25.6 million) in African countries and approximately 2.3 million in European countries. Globally, in 2022, 630,000 (480,000–880,000) people died from HIV-related causes, and 1.3 million (1.0–1.7 million) became newly infected (WHO 2023).

According to a European Centre for Disease Prevention and Control (ECDC) report, 110,486 people were diagnosed with HIV across 49 European countries in 2022. The average for Europe was 12.4 per 100,000 population; the highest HIV incidence rate per 100,000 inhabitants in 2022 was noted in the Russian Federation – 38.4 (55,573 diagnosed HIV infections), and the lowest rate was in Bosnia and Herzegovina – 1.7 (54 HIV infections) [Table I]. To compare some examples, in Western European countries the rates were as follows in alphabetical order: Austria

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Table I
Diagnosis rate per 100,000 population and diagnosed HIV infections in countries with the highest and lowest rates vs Poland in 2022 (ECDC 2023).

Country	Diagnosis rate per 100,000 population	Diagnosed HIV infections
The highest HIV incidence rates (over 15)		
Russian Federation	38.4	55,573
Ukraine	29.8	12,212
Moldova	28.4	929
Cyprus	24.1	218
Kazakhstan	20.7	4,006
Armenia	19.2	535
Estonia	18.8	250
Ireland	17.5	887
Belarus	17.2	1,644
Georgia	16.5	617
Kyrgyzstan	16.5	1,094
The lowest rates (2.0 and below)		
Slovenia	2.0	42
North Macedonia	2.0	41
Bosnia and Herzegovina	1.7	54
Poland	5.4	2,050

2.1 (189 HIV infections), Belgium 9.1 (1,060), Denmark 4.4 (258), Finland 4.9 (273), France 6.1 (4,158), Germany 3.9 (3,239), Greece 5.4 (565), Italy 3.2 (1,888), Portugal 7.8 (804), Spain 6.2 (2,937), Sweden 4.3 (446), United Kingdom 6.0 (4,040) (ECDC 2023).

For Poland, this rate in 2022 was 5.4 per 100,000 inhabitants, resulting in 2,050 new HIV cases in 2022 (ECDC 2023). According to national data from the National Institute of Public Health NIH – National Research Institute (NIPH NIH – NRI) – an institution collecting and reporting infections in Poland, summarising reports from 2022, 2,384 HIV infections were registered. However, among these cases, three were diagnosed in 2018, 3 in 2019, 22 in 2020, 285 in 2021, and the remaining 2,071 in 2022 (NIZP – PZH 2023).

From 1985 to the end of 2022, a total of 30,092 HIV infections were identified in Poland among Polish citizens and foreigners residing in Poland. According to NIPH NIH – NRI statistics, at least 6,462 infections were related to drug use, 2,288 through heterosexual contact and 4,872 through homosexual contact (NIZP – PZH 2023).

It is essential to note that late detection of infection is associated with high healthcare costs, an increase in AIDS (*Acquired Immunodeficiency Syndrome*) cases, a shorter average lifespan, higher mortality rates and a higher incidence of HIV-related comorbidities (Martin-Iguacel *et al.* 2022).

The number of new AIDS cases and related deaths is decreasing globally. According to an ECDC report, the number of reported AIDS cases in 2022 remained at the same level as in 2021 (0.6 per 100,000 inhabitants), but compared to 2019, there was a 14% decrease. Regarding AIDS-related deaths, there was a 2.0%

decrease compared to 2021 and a 44.5% decrease compared to 2019. These changes are likely significantly influenced by better access to treatment and patient care policies (ECDC 2023).

According to the ECDC report, in 2022, 7,642 people in 44 European countries were diagnosed with AIDS (diagnosis rate 1.1 per 100,000 inhabitants). Overall, 64.7% of AIDS cases were diagnosed in Eastern Europe (diagnosis rate 4.4 per 100,000 inhabitants), 24.5% in Western Europe (0.5 per 100,000 inhabitants), and 10.8% in the Central Region (0.4 per 100,000 inhabitants). For Poland, this rate, according to the ECDC, was 0.3, resulting in 114 cases in 2022 (ECDC 2023).

According to NIPH NIH – NRI data for 2022, of the 135 registered AIDS cases, 1 case was diagnosed in 2020, 19 cases in 2021, and 115 cases in 2022 (NIZP-PZH 2023). The discrepancies between the ECDC and NIPH NIH – NRI reports in 2022 (21 HIV cases and 1 AIDS case) likely result from the one-time release and publication of the ECDC report based on NIPH NIH – NRI data, which were subsequently continuously updated with incoming reports.

Global examples, mainly from African countries, show that with good detection, diagnosis, prevention, education, support from non-governmental organizations, and state involvement, pandemics like HIV can be overcome. The Joint United Nations Programme on HIV/AIDS (UNAIDS 2023) presents data indicating that eliminating AIDS by 2030 is possible. The President’s Emergency Plan for AIDS Relief (PEPFAR), implemented worldwide, has had a significant impact on reducing the number of new HIV infections. From 2010 to 2022, the number of new HIV infections decreased by

57% and the number of AIDS-related deaths decreased by 59% in the supported countries (UNAIDS 2023).

In Brazil, over the past few decades, there has been a significant decline in AIDS incidence due to the introduction of widespread and free access to antiretroviral therapy (ART), harm reduction policies aimed at reducing or eliminating the health effects of psychoactive substance use, prevention efforts and extensive diagnostic testing (Ribeiro *et al.* 2020).

The Polish Scientific Society of PTN AIDS recommends testing every person at risk of HIV infection using HIV 1/2 antigen/antibody combination immunoassays (Szetela *et al.* 2022; 2023; 2024). Such testing is possible in medical and non-medical settings, including Voluntary Counselling and Testing Points (VCTs).

2. Organization of Voluntary Counselling and Testing Points in Poland

Voluntary Counselling and Testing (VCT) points are coordinated by the National AIDS Centre (NAC), which has operated under the Ministry of Health since 1993, implementing the National Programme for HIV Prevention and AIDS Control following the Council of Ministers’ regulation dated February 15, 2011 (PKD

AIDS Misja 2022). The first VCT point was established in Szczecin in 1997, initiated by Anna Nowak, and has been operating continuously for over 20 years. Until 2011, this Point was funded by the Polish Society for Health Education O/T Szczecin through projects, and since 2012, by the “DA DU” Volunteer Association (Kłys-Rachwalska 2018).

The objective of VCT points is the early detection of HIV infections, limiting the spread of the virus, promoting HIV infection prevention and assisting people living with HIV and their close ones (Kłys-Rachwalska 2018). Over the years, a network of VCT points has been created nationwide. Currently, there are 29 points in 26 cities, located in all 16 voivodeships [Fig. 1]. In the Masovian Voivodeship, where the highest number of HIV tests are conducted, there are as many as five points, four located in Warsaw and one in Płock. In the Lower Silesian (Wrocław, Wałbrzych, Zgorzelec), Silesian (Chorzów, Częstochowa, Katowice), and Pomeranian (Gdańsk, Gdynia, Sopot) voivodeships, there are currently three active points each. Two VCT points operate in the Lesser Poland (Kraków, Nowy Sącz), Kuyavian-Pomeranian (Bydgoszcz, Toruń), and West Pomeranian (Koszalin, Szczecin) voivodeships. In other voivodeships, there is one VCT point located in the capital cities of these voivodeships: in Greater

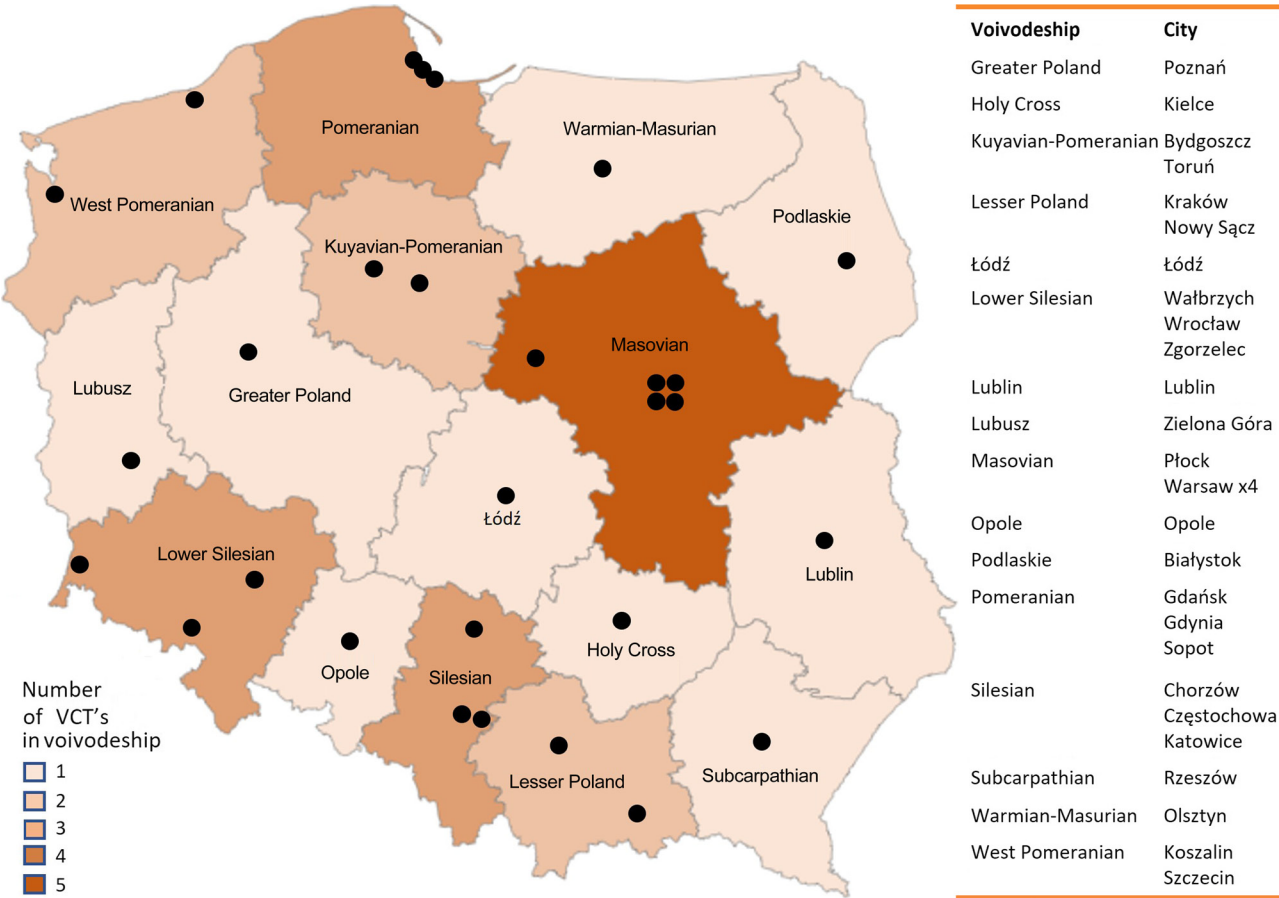


Fig 1. Map of the distribution of 29 Voluntary Counselling and Testing Points in Poland as of May 2024. Own elaboration.

Poland in Poznań, in Świętokrzyskie in Kielce, in Łódź Voivodeship in Łódź, in Lublin Voivodeship in Lublin, in Lubusz Voivodeship in Zielona Góra, in Opole Voivodeship in Opole, in Podlaskie Voivodeship in Białystok, in Subcarpathian Voivodeship in Rzeszów, and Warmian-Masurian Voivodeship in Olsztyn. All VCT points in Poland are funded or co-funded by the National AIDS Centre from municipal budgets and private funds. Annually, reports from each Point's activities are sent to the National AIDS Centre, which also oversees the activities of these units. Some points may be closed for financial reasons or difficulties in finding adequately trained personnel, as was the case with the VCT in Jelenia Góra at the end of 2023. New VCT points are also being opened, such as in Katowice (May 2024) (KC AIDS PKD 2024).

VCTs provide the possibility for every adult individual visiting the facility to perform a quick, anonymous, and free HIV test. According to the applicable law in Poland, the Act of December 5, 1996, on the professions of physician and dentist (Journal of Laws 2019.537 consolidated text, article 32, paragraph 1, and the Code of Medical Ethics, article 15, paragraph 1), and the Patient Rights and the Commissioner for Patients' Rights Act (Journal of Laws 2017.1318 consolidated text with later amendments), article 17, paragraphs 1 and 2, informed consent from the patient is necessary to conduct an HIV test. For minor patients under 16, permission must be given by a parent/legal guardian or a court. For patients aged 16–18, dual consent is required from both the patient and the parent/legal guardian (HIV/AIDS 2024; Dz. U. z 2023 r. poz. 1516; Dz. U. z 2024 poz. 581).

Among the tasks performed by VCTs are educational and advisory activities. Educational activities are conducted directly for persons reporting to VCTs and in the form of promotional campaigns, such as World AIDS Day, celebrated on December 2 each year, or the World Testing Week, organized twice a year – in spring and autumn. These campaigns aim to increase public awareness about HIV, improve access to rapid testing, and support people living with HIV (Treston 2023, European Testing week 2024). Educational activities for individuals reporting to VCTs are conducted as pre-test and post-test counselling by qualified counsellors.

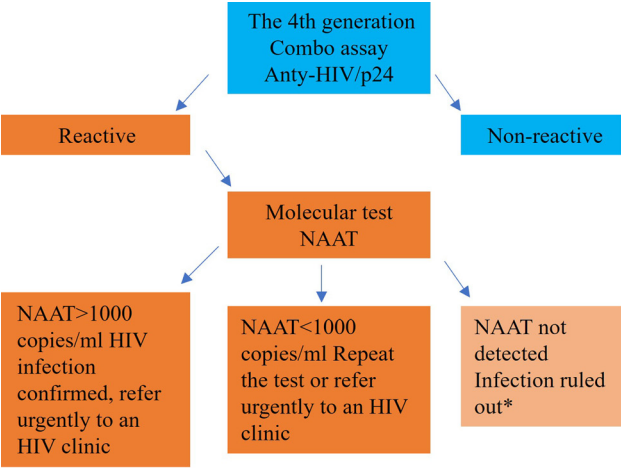
A person can become a counsellor if they have higher medical, psychological, pedagogical, or related education and hold a valid counsellor certificate authorizing them to provide counselling issued by the National AIDS Centre. The role of a VCTs counsellor is to educate clients about the modes of HIV transmission and methods of prevention. Additionally, the counsellor informs about the risk of contracting other sexually transmitted diseases (STDs) (Standardy PKD 2024).

From the individual reporting to the VCTs, after assigning an identifier number and a password invented

by them, a detailed interview is collected to assess the risk of infection, enabling their characterization in terms of age group, gender, area of residence, and sexual preferences. Data are collected through electronic questionnaires conducted during the consultation visit. The questionnaire includes a series of questions to decide on the need for testing, including the number of HIV tests performed in the past and their results, the reason for reporting for testing, the number of sexual partners during life, the presence of a steady partner and whether they have been tested, whether there were unprotected sexual contacts (oral active/passive, vaginal, anal active/passive) and the time elapsed since such risky contact, the individual's sexual orientation, whether they used pre-exposure prophylaxis (PrEP), psychoactive substances (which/when), occupational/non-occupational blood contact, information on sexually transmitted diseases (STDs) contracted in the last year (VCTs electronic questionnaire 2024). Each patient undergoing the test gives informed consent for the test and voluntarily participates in the questionnaire. If the person finds the questions too intimate and personal, they can refuse to answer. After qualifying the patient for the test, they are directed to the screening test.

3. Diagnosing HIV infection in Voluntary Counselling and Testing Points in Poland

VCT points operate according to the national guidelines for functioning and testing defined by the National AIDS Centre. In most VCTs, it is possible to perform both third and fourth-generation HIV tests. The choice of the test is made by the VCTs counsellor based on the data collected in the interview. The third-generation cassette test allows for quick, up to several minutes, detection of anti-HIV-1/2 antibodies. The limitation of this test is a diagnostic window of 12 weeks from contact (Szetela *et al.* 2024). According to the recommendations for 2023 and 2024 of the Polish Scientific Society for AIDS (PSS AIDS) (Szetela 2023; 2024), the use of fourth-generation serological tests detecting p24 antigen (possible detection as early as two weeks after infection) and specific antibodies for HIV-1 (group M and O) and HIV-2 envelope antigens is recommended (the diagnostic window is six weeks) (Fig. 2). Obtaining a negative result with a fourth-generation test performed six weeks after exposure concludes the diagnosis of HIV infection. Confirmation of HIV infection is based on obtaining a reactive result with the fourth-generation test, verified with a confirmation test using molecular methods (NAAT, Nucleic Acid Amplification Test) to eliminate potentially possible cross-reactive results. The recommended diagnostic scheme aims to identify individuals infected with HIV



* the need to perform a serological test to verify infection (e.g. WB or LIA) if the patient is treated with antiretroviral therapy the patient is treated with antiretroviral therapy and has undetectable viral load or may be a person who naturally controls HIV infection (so-called Elite-controller, possibly HIV-RNA < 50 copies/ml)

Fig. 2. Schematic of screening laboratory diagnostics, developed based on the recommendations of PSS AIDS 2024 (Szetela *et al.* 2024).

while simultaneously removing the risk of obtaining false-positive results. Factors that may cause a falsely reactive screening test result include pregnancy, vaccinations in the past 4–6 weeks, autoimmune diseases, immunosuppressive, oncological, and antiviral treatment. A particular group includes patients receiving antiretroviral therapy (ART) as well as those covered by pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) for HIV infection (Szetela *et al.* 2022; 2023; 2024; Standardy PKD 2024).

It is worth mentioning that in June 2023, changes were made in the recommendations for confirming HIV infection in Poland. Molecular tests replaced the Western Blot (WB) test as the method of choice for infection verification. In VCTs, adjusting to the new guidelines lasted until the end of 2023 (Szetela *et al.* 2022; 2023; 2024).

The National AIDS Centre’s recommendations mandate that all tests be conducted from a single blood sample because the individual’s identity is anonymous, making it impossible to verify their identity and recall them for a confirmation test sample collection (Standardy PKD 2024).

A person who has received a reactive result in an HIV screening test and a positive result in a confirmation test has the option to voluntarily decode such a test result and obtain a personal certificate confirming HIV infection. This procedure facilitates more straightforward and quicker access to Acquired Immunodeficiency Syndrome Clinics and allows for the possibility of receiving ARV treatment in the shortest possible time (Standardy PKD 2024). Moreover, each patient

who gets a positive result is informed about the criminal liability according to Article 161 of the Penal Code: “Whoever, knowing that they are infected with HIV or suffering from a venereal, infectious, severe incurable, or life-threatening illness, exposes another person to direct risk of infection with that virus or disease, shall be subject to imprisonment from 3 months to 5 years” (Dz.U. 2020.1444 t.j. ze zm.; KC AIDS 2021).

In most VCT points in Poland, a rapid immunochromatographic test for the presence of anti-HCV antibodies, confirming hepatitis C, and anti-syphilis antibodies, assessed in the diagnosis of syphilis, can also be performed. In the case of a reactive result, the patient is directed to a specialized facility to verify the tests.

4. Summary of Voluntary Counselling and Testing Points activities in Poland 2019–2023

VCT points allow testing for Polish citizens and foreigners, with counselling provided in English or other languages upon prior arrangement. In 2019–2023, 157,833 individuals visited VCTs in Poland, of which 10,177 (6.45%) were foreigners. During the 2019–2023 period, there was almost a twofold increase in the number of tests conducted among foreigners visiting VCTs in Poland, from 1,552 in 2019 to 2,827 in 2023 [Table II]. This might be attributed to the political situation in Eastern Europe, including the armed conflict in Ukraine and the influx of migrants through the Belarusian border. Among non-Polish nationals, a higher percentage of positive results was also noted. In total, in the years 2019–2023, the percentage of positive results in the Polish population was 1.24% (1,825/147,656), whereas among individuals of other nationalities, it was 5.08% (517/10,177) [Fig. 3]. The higher percentage of positive results among foreigners indicates the need to test this population, especially during periods of significant migration and unrestricted movement.

The frequency analysis of positive results detection reported in VCTs vs. NIPH NIH – NRI showed that on average 26% (2,342/8,891) of positive results in Poland from 2019–2023 were detected in the framework of tests carried out in VCTs: from 33% (537/1,615) in 2019, 37% (309/840) in 2020, 38% (448/1,173) in 2021, 22% (520/2,384) in 2022 to 18% (528/2879) in 2023 (NIZP – PZH 2023; Niedźwiecka *et al.* 2022; 2024).

4. Summary

In summary, the operation of Voluntary Counselling and Testing Points in Poland, offering free and anonymous testing for HIV infection, is a valuable complement to the diagnostics conducted within the healthcare

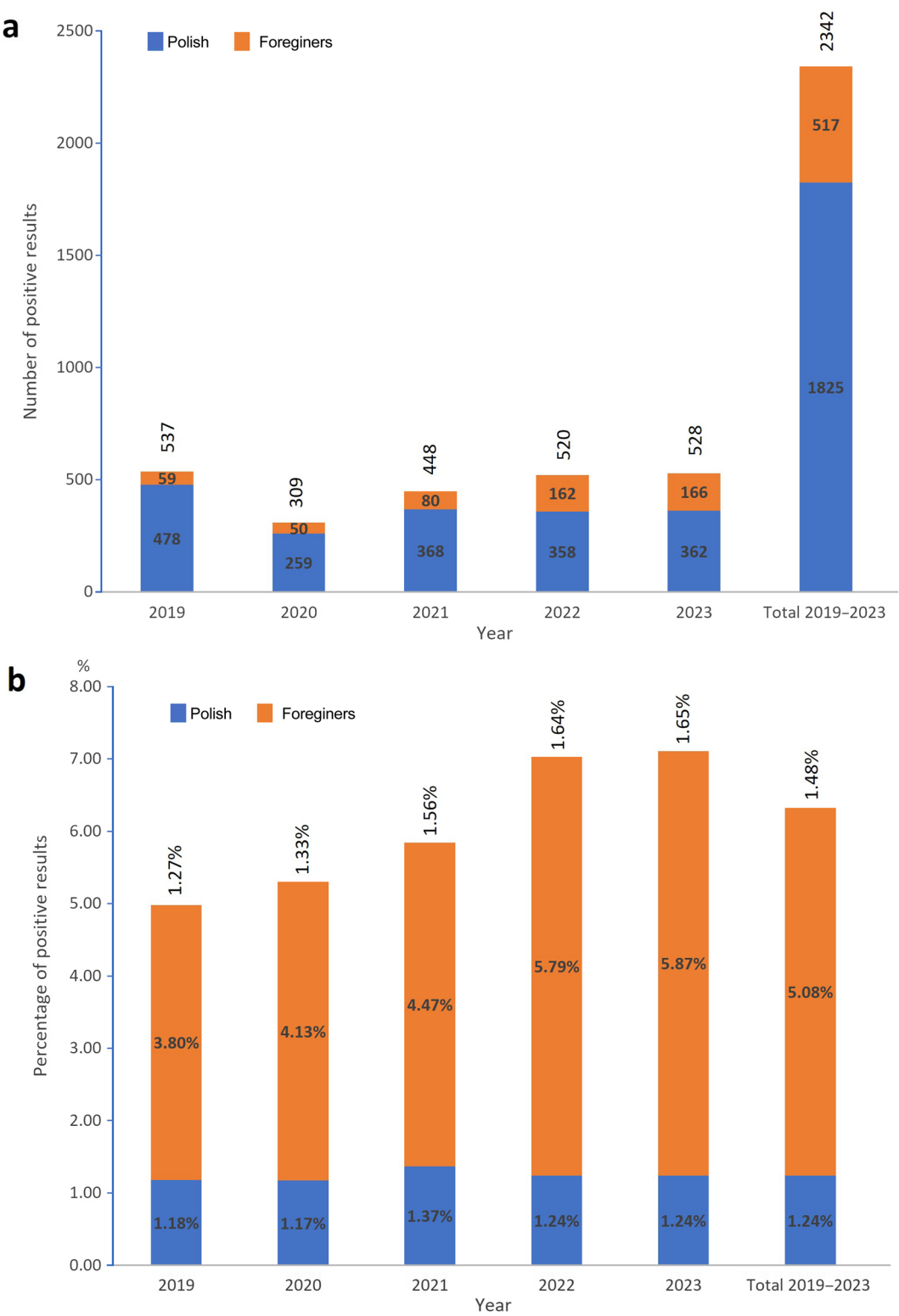


Fig. 3. Number and percentage of positive results obtained among Poles and foreigners tested for HIV infection in Voluntary Counselling and Testing Points in Poland in 2019–2023.
Source: own elaboration based on data from NAC electronic surveys (2019–2023).

system in Poland. It enables outreach to a group of people who, for various reasons, cannot or do not want to use the services offered by the state healthcare system. The operation of VCTs raises awareness of the issue. It increases accessibility to HIV diagnosis in key adult

populations, such as men who have sex with men, sex workers, and people using psychoactive substances. Despite the popularisation of knowledge, the development of medicine, and diagnostic possibilities, the topic of HIV still evokes fear, concerns, and controversy.

Table II
Number of tests conducted and positive results obtained among individuals tested for HIV infection
in Voluntary Counselling and Testing Points in Poland from 2019–2023, considering nationality.

Year	Nationality	Number of tests performed	Number of positive results	% of positive results
2019	Polish	40,602	478	1.18%
	Foreigners	1,552	59	3.80%
	Total	42,154	537	1.27%
2020	Polish	22,064	259	1.17%
	Foreigners	1,212	50	4.13%
	Total	23,276	309	1.33%
2021	Polish	26,856	368	1.37%
	Foreigners	1,790	80	4.47%
	Total	28,646	448	1.56%
2022	Polish	28,905	358	1.24%
	Foreigners	2,796	162	5.79%
	Total	31,701	520	1.64%
2023	Polish	29,229	362	1.24%
	Foreigners	2,827	166	5.87%
	Total	32,056	528	1.65%
2019-2023	Polish	147,656	1,825	1.24%
	Foreigners	10,177	517	5.08%
	Total	157,833	2,342	1.48%

Source: own elaboration based on data from electronic surveys by NAC (2019–2023).

However, it is essential to expand promotional activities and rapid HIV testing continuously. Therefore, there is consideration of the development and creation of additional VCT points in Poland to ensure the possibility of free and anonymous HIV testing for the largest possible group of recipients, considering groups of people engaging in risky sexual behaviour or intravenous drug users. In Poland, the low level of knowledge about HIV and STDs remains an issue, making the counselling provided within VCT points an important education component that allows for delivering basic knowledge about HIV and the latest forms of prevention.

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Ethic approval

Our report is a retrospective analysis using anonymous survey data collected during routine practice at each VCT. Ethic approval was obtained from the Jagiellonian University Collegium Medicum Ethic Commission (118.0043.1.158.2024).

Conflict of interest

The authors do not report any financial or personal connections with other persons or organizations, which might negatively affect the contents of this publication and/or claim authorship rights to this publication.

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