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Integrated HIV, viral hepatitis and tuberculosis infection testing across multiple healthcare settings in Lithuania

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Abstract AS1/03

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Background

- In the first year (May 2022 – April 2023) of the National HCV screening program in Lithuania for people born in 1945–1994 and risk groups, anti-HCV seroprevalence was 1.5% (11,943/790,070)
  - 1.3% (9,856/783,375) in the birth cohort vs. 31.1% (2,087/6,695) among PWID and PWH[1]
- TB notification rate in Lithuania declined from 54.6 to 23.1 per 100,000 population between 2014 and 2024 but remains well above the EU/EEA average (8.4 per 100,000)[2]
- TB is the most common AIDS-defining illness: 9.1% (311/3,431) of PWH in Lithuania developed active TB in 2008–2020, half of whom were PWID[3]
- Shared risk factors and overlapped key populations support the need for integrated HIV, viral hepatitis and TB testing

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2. European Centre for Disease Prevention and Control, WHO Regional Office for Europe. Tuberculosis surveillance and monitoring in Europe 2026 – 2024 data. Stockholm: ECDC; 2026.

3. Matulyte E, Davidaviciene E, Kancauskiene Z, Diktanas S, Kausas A, Velyvyte D, Urboniene J, Lipnickiene V, Laurencikaite M, Danila E, Costagliola D, Matulionyte R. The socio-demographic, clinical characteristics and outcomes of tuberculosis among HIV infected adults in Lithuania: A thirteen-year analysis.*PLoS One. 2023;18(3):e0282046.*

Study aim

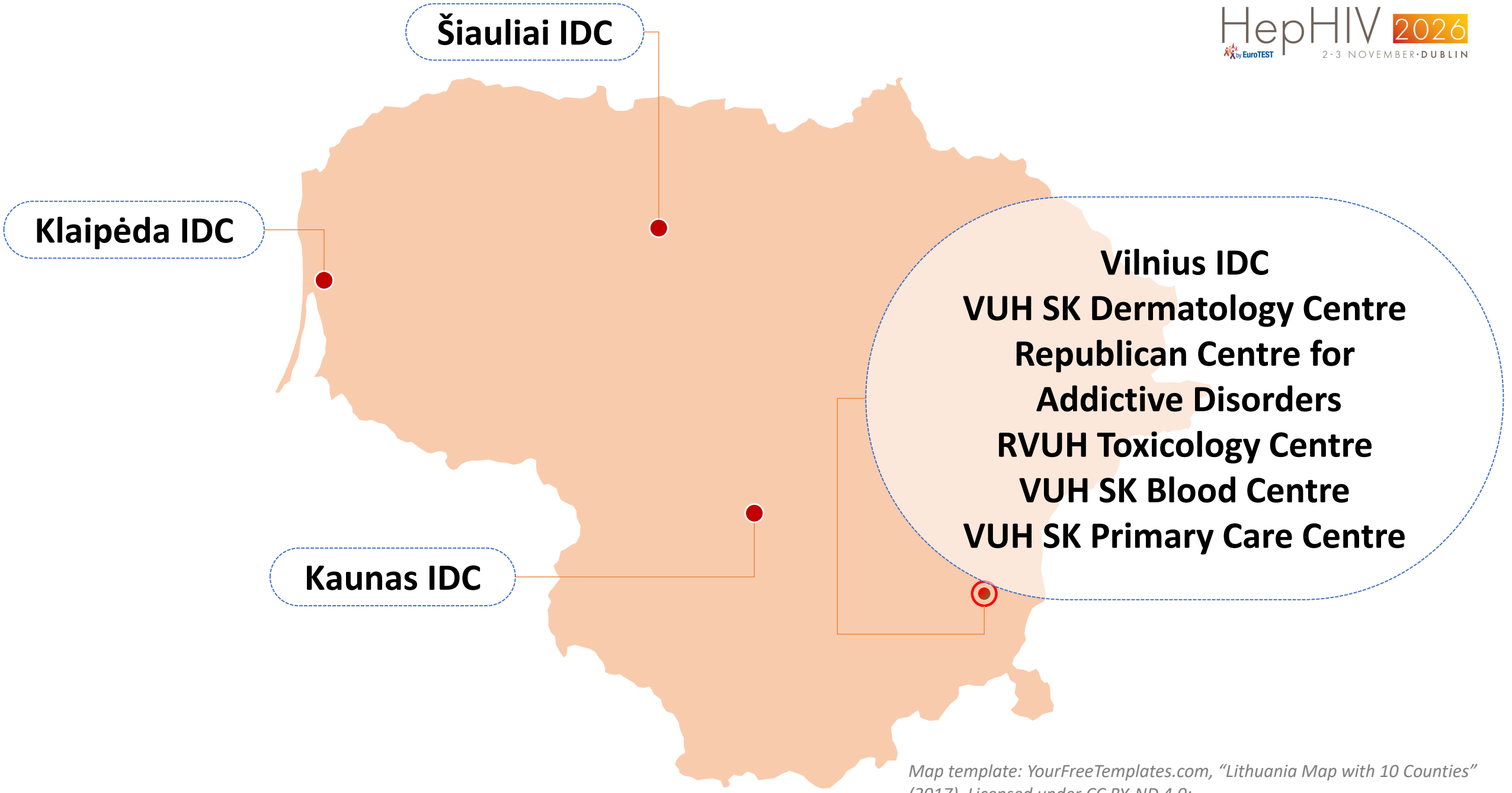
1. To intensify integrated screening for HIV, hepatitis B virus (HBV), hepatitis C virus (HCV) and TB infection (TBI) in specific population groups
2. To identify the groups at increased risk for these infections

Study design

Cross-sectional study

- WEEPI 1.1 (August 2018 – May 2022)[1]: people with HIV (PWH) and control group of HIV-uninfected individuals in three infectious diseases centres (IDCs) of Vilnius University Hospital Santaros Klinikos (VUH SK), Šiauliai and Klaipėda
- WEEPI 1.2 (March 2023 – February 2026): expanded to a fourth IDC for PWH in Kaunas, VUH SK Centre of Dermatovenereology, Republican Centre for Addictive Disorders (RCAD), Respublican Vilnius University Hospital (RVUH) Toxicology Centre, VUH SK Blood Centre and Primary Care Centre
- Integrated testing: HIV, HBsAg, anti-HCV, TBI (IGRA and/or TST)
- Univariate and multivariable analyses to explore associations between variables and the outcome

1. Matulyte E, Kancauskiene Z, Kausas A, Urboniene J, Lipnickiene V, Kopeykiniene J, Gudaitis T, Raudonis S, Danila E, Costagliola D, Matulionyte R. Latent Tuberculosis Infection and Associated Risk Factors among People Living with HIV and HIV-Uninfected Individuals in Lithuania. *Pathogens 2023;12(8):990*



Map template: YourFreeTemplates.com, "Lithuania Map with 10 Counties" (2017). Licensed under CC BY-ND 4.0: https://creativecommons.org/licenses/by-nd/4.0/.

Study results

3,779 patients enrolled (745 PWH, 3,034 HIV-uninfected individuals)

Study group	n
PWH (Vilnius, Šiauliai, Klaipėda, Kaunas IDCs)	745
IDCs (Vilnius, Šiauliai, Klaipėda)	1,460
VUH SK Dermatovenereology centre: STI testing (risk factors or referral)	232
VUH SK Dermatovenereology centre: other skin diseases	274
RCAD: PWID	220
RCAD: hazardous alcohol users	321
RVUH Toxicology Centre	179
VUH SK Blood donors	248
VUH SK Primary care patients	100

IDCs – infectious diseases centres; VUH SK – Vilnius University Hospital Santaros Klinikos; PWID – people who inject drugs; RCAD – Republican Centre for Addictive Disorders; RVUH – Republican Vilnius University Hospital

Social and behavioral risk factors, %

	Injecting drugs	Hazardous alcohol use	Imprisonment	Unemployment	Non-higher education	TB contact
PWH	**31.4**	3.8	**30.3**	**31.3**	**63.2**	**12.8**
IDCs (controls)	7.6	1.4	10.2	14.1	54.5	6.0
Dermatovenereology centre: STI testing (risk factors or referral)	2.2	0.5	3.2	2.7	37.8	6.3
Dermatovenereology centre: other skin diseases	0.7	0	0.4	1.9	31.5	4.5
RCAD: PWID	**100**	**23.7**	**56.2**	**50.0**	**82.6**	8.3
RCAD: hazardous alcohol users	2.2	**100**	11.3	16.8	58.1	**18.1**
RVUH Toxicology Centre patients	**13.6**	**80.7**	11.3	22.3	**65.0**	11.9
VUH SK Blood donors	0	0	0.4	1.2	13.3	10.1
VUH SK Primary care patients	0	1.0	0	3.0	18.0	12.0

Highest vulnerabilities among PWH, individuals with IDU and hazardous alcohol users; all $p<0.001$

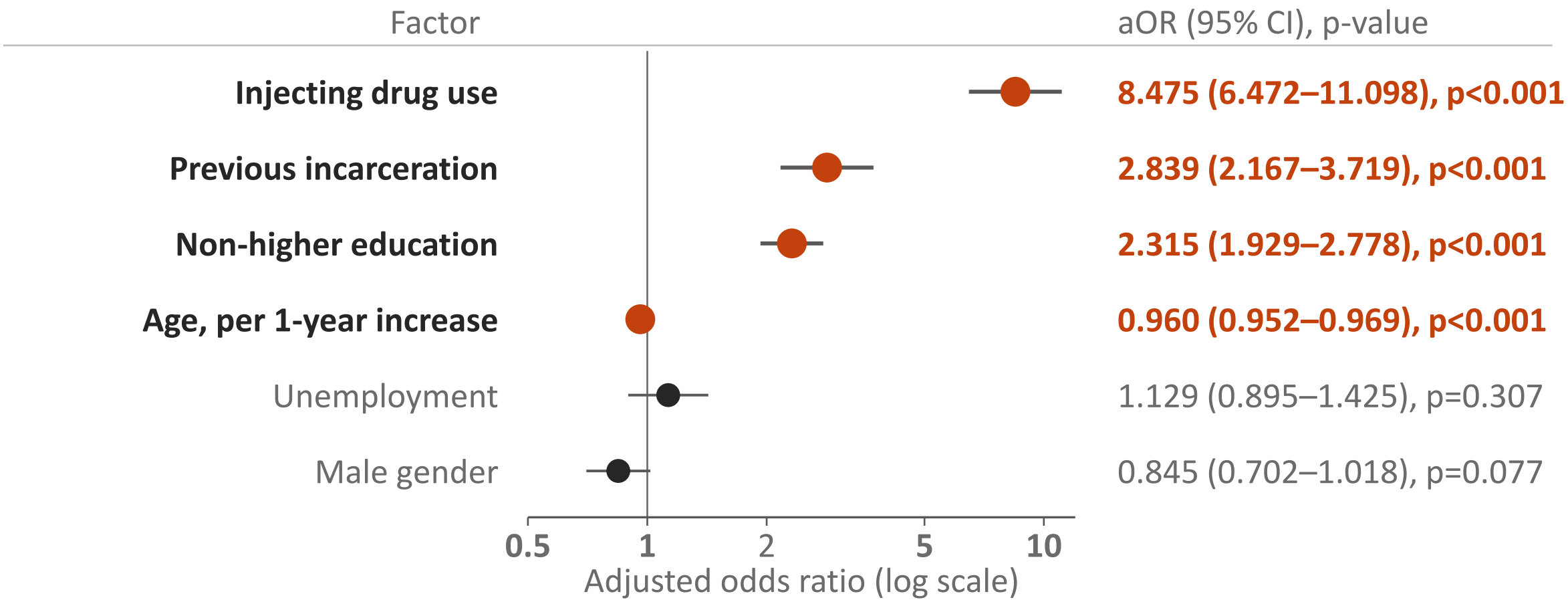
Integrated infectious disease testing results, %

	Anti-HCV positivity	TBI positivity	HBsAg positivity	Any positive result*
PWH	**38.4**	**15.7**	6.7	42.8**
IDCs (controls)	**53.7**	**14.9**	**12.1**	**58.2**
Dermatovenereology centre: STI testing (risk factors or referral)	1.4	6.0	1.1	7.3
Dermatovenereology centre: other skin diseases	0.8	3.3	1.6	5.1
RCAD: PWID	**75.1**	**33.5**	**7.1**	**80.9**
RCAD: hazardous alcohol users	3.8	15.6	0.4	18.7
RVUH Toxicology Centre patients	8.0	10.1	*10.0†*	16.2
VUH SK Blood donors	0	2.0	0	2.0
VUH SK Primary care patients	2.5	2.0	0	4.0

HIV infection in 4 (0.13%) in non PWH group

*HIV, HBsAg, anti-HCV and/or TBI; **HIV excluded; †only 10 tested. All p<0.001

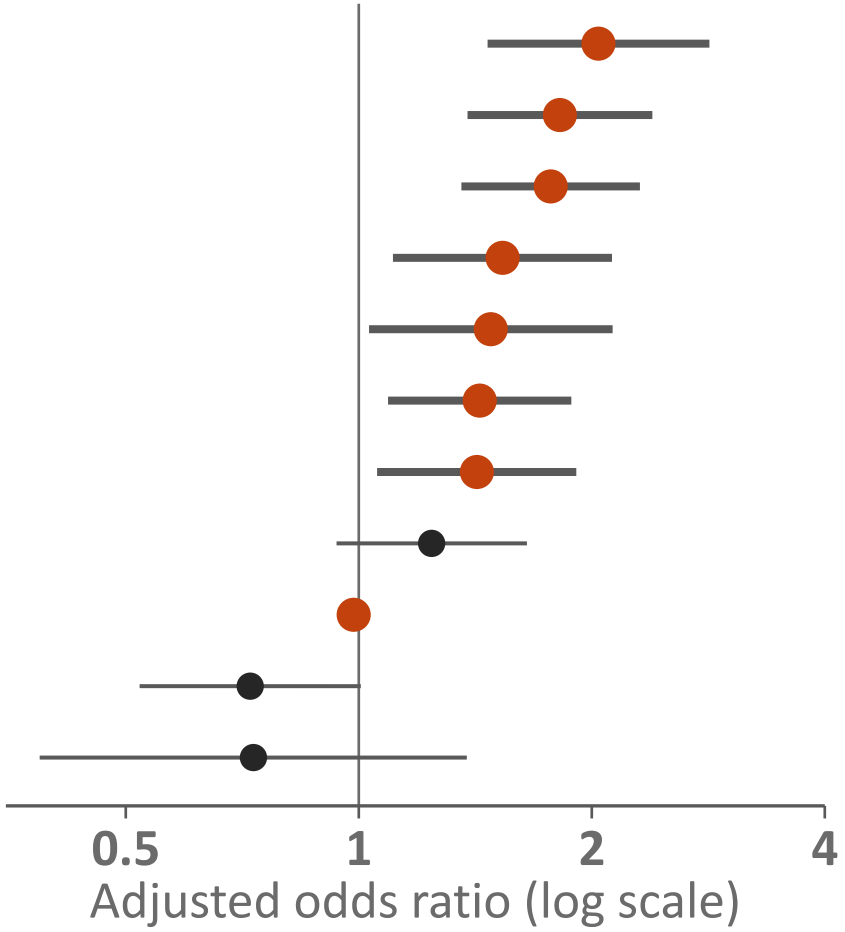
Factors associated with anti-HCV positivity



Highlighted = p<0.05. Multivariable logistic regression; PWH were excluded from the analysis.

Factors associated with TB infection

Factor	aOR (95% CI), p-value
Injecting drug use	**2.040 (1.467–2.838), p<0.001**
Anti-HCV positivity	**1.819 (1.382–2.395), p<0.001**
Non-higher education	**1.770 (1.357–2.308), p<0.001**
Previous incarceration	**1.534 (1.107–2.124), p=0.010**
TB contact	**1.481 (1.031–2.128), p=0.034**
Male gender	**1.433 (1.091–1.882), p=0.010**
Hazardous alcohol use	**1.421 (1.056–1.910), p=0.020**
Unemployment	1.242 (0.936–1.649), p=0.133
Age, per 1-year increase	**0.985 (0.973–0.997), p=0.014**
HIV	0.724 (0.521–1.006), p=0.054
Homelessness	0.731 (0.387–1.379), p=0.333



Highlighted = p<0.05. Multivariable logistic regression.

Key messages

1. Integrated testing of 3,779 people in nine population groups identified a substantial burden of HIV, HBV, HCV and TBI
2. People who inject drugs had the highest seropositivity prevalence: anti-HCV 75.1%, TBI 33.5%, any positivity 80.9%
3. In PWH, anti-HCV positivity was 38.4% while TBI positivity (15.7%) was similar to IDC controls (14.9%)
4. Blood donors and primary care patients had the lowest positivity rate (any positive test result 2.0% and 4.0%)
5. Injecting drug use, incarceration and non-higher education were independently associated with both anti-HCV (aOR 8.5, 2.8, 2.3) and TBI (aOR 2.0, 1.5, 1.8)

Conclusions

Integrated testing identified a significant infectious disease burden across vulnerable populations.

Injecting drug use, previous incarceration and non-higher education were independently associated with both anti-HCV and TBI positivity.

Our study supports the need for implementing integrated programs to reduce structural barriers and improve access for marginalized and underserved groups.

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