

**Late presenters and missed opportunities.
Quali strategie per migliorare
le strategie di screening per HIV?**

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Definitions

- **late presentation**: people presenting for care with a CD4⁺ count below 350 cells/ μ L or with an AIDS-defining event, regardless of CD4⁺ count
- **advanced HIV disease**: persons presenting for care with a CD4⁺ count below 200 cells/ μ L or with an AIDS-defining event, regardless of CD4⁺ count

Some changes in the epidemiological scenario...

- In recent years, an increase in the frequency of HIV testing has been observed, coinciding with the wider use of PrEP among people without HIV.
- As a result, an increasing proportion of PWH have been diagnosed at the time of seroconversion, when their CD4+ count may be temporarily low.
- Considering these PWH as late presenters leads to an overestimation of the late presentation phenomenon.

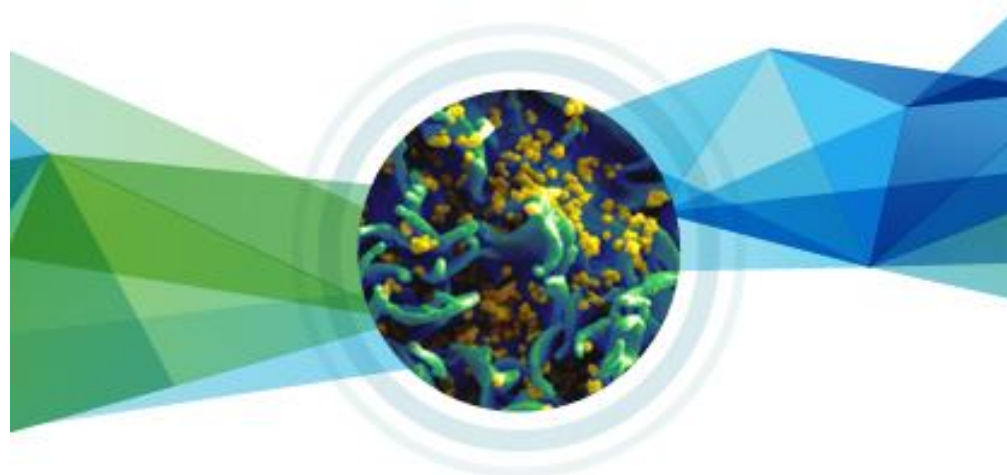
Clin Infect Dis. [2011](#);53(8):817- 825.

HIV Med. [2016](#);17(3):231-234.

HIV Med. [2022](#);23(11):1127–1142.

Updated definition

Therefore, a revised definition of late HIV diagnosis has been proposed in 2022, suggesting the reclassification of all PWH with laboratory evidence of recent infection or a last negative HIV test within 12 months of diagnosis or clinical evidence of acute infection as non-late presenters.



HIV/AIDS surveillance in Europe

2024

2023 data

Table A. Characteristics of new HIV and AIDS diagnoses reported in the WHO European Region, the west, centre and east of the WHO European Region, and the EU/EEA, 2023

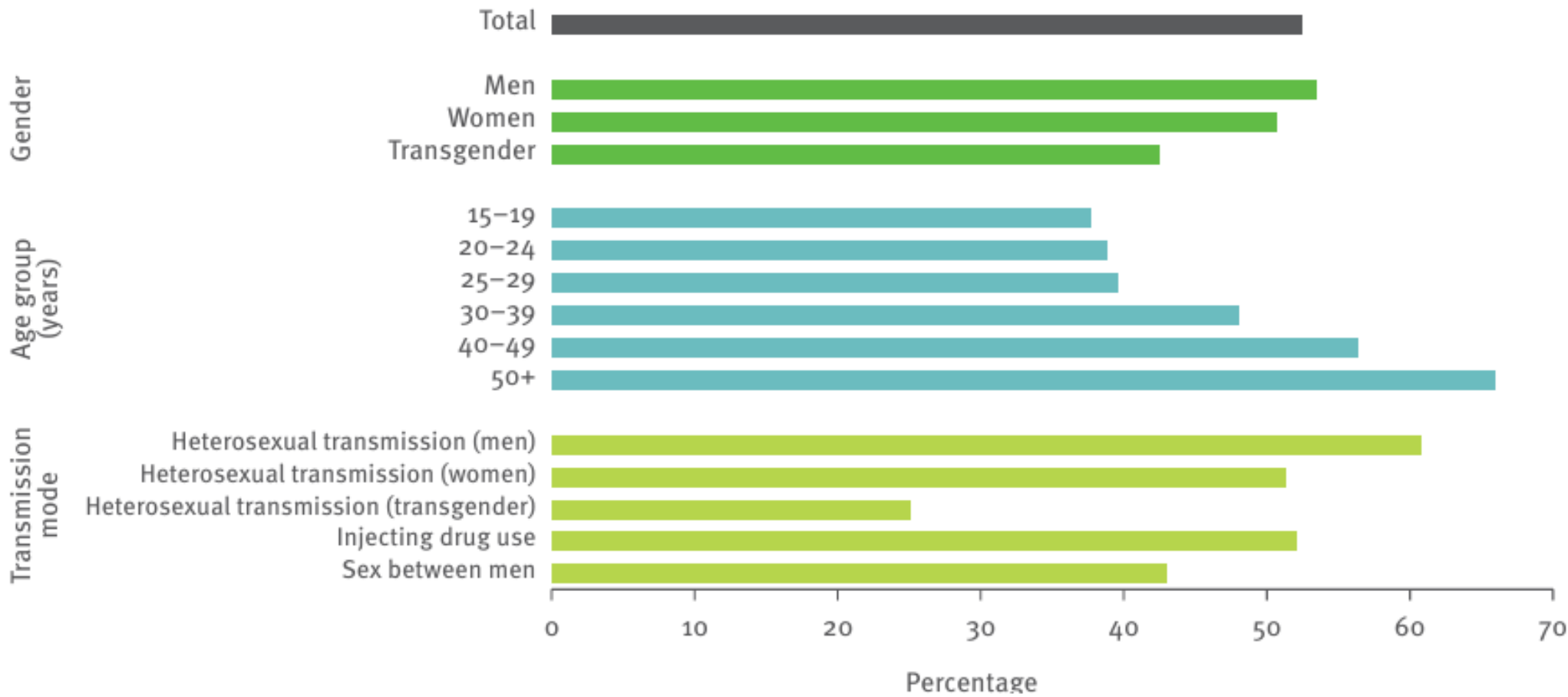
	WHO European Region	West	Centre	East	EU/EEA
Reporting countries/number of countries ^a	47/53	20/23	14/15	13/15	30/30
Number of new HIV diagnoses	112 883	27 043	8 239	77 601	24 731
Rate of HIV diagnoses per 100 000 population	12.7	6.2	4.2	30.6	5.3
Percentage aged 15–24 years	5.8%	9.0%	12.2%	4.0%	10.1%
Percentage aged 50+ years	18.7%	21.1%	15.6%	18.2%	20.5%
Male-to-female ratio	1.8	2.1	3.9	1.6	2.7
Percentage of migrants ^b	38.1%	69.9%	30.5%	3.2%	47.9%
Transmission mode					
Sex between men	11.7%	33.3%	18.1%	3.4%	46.7%
Heterosexual transmission (men)	33.1%	16.9%	16.2%	40.5%	21.2%
Heterosexual transmission (women)	30.7%	23.7%	8.3%	35.6%	24.8%
Injecting drug use	13.6%	3.3%	2.3%	18.4%	4.1%
Mother-to-child transmission	0.5%	1.3%	0.4%	0.3%	0.9%
Unknown	10.3%	21.1%	54.7%	1.8%	27.6%
AIDS and late HIV diagnosis					
Percentage new HIV diagnoses CD4 < 350 cells/mm ³	52.4	45.9	57.0	59.5	52.7
Number of new AIDS diagnoses ^c	7 878	2 168	874	4 836	2 690
Rate of AIDS diagnoses per 100 000 population	1.2	0.6	0.4	4.9	0.7

^a No data received from Andorra, Bosnia and Herzegovina, Monaco, San Marino, Turkmenistan or Uzbekistan.

^b Migrants defined as originating from outside of the country in which they were diagnosed.

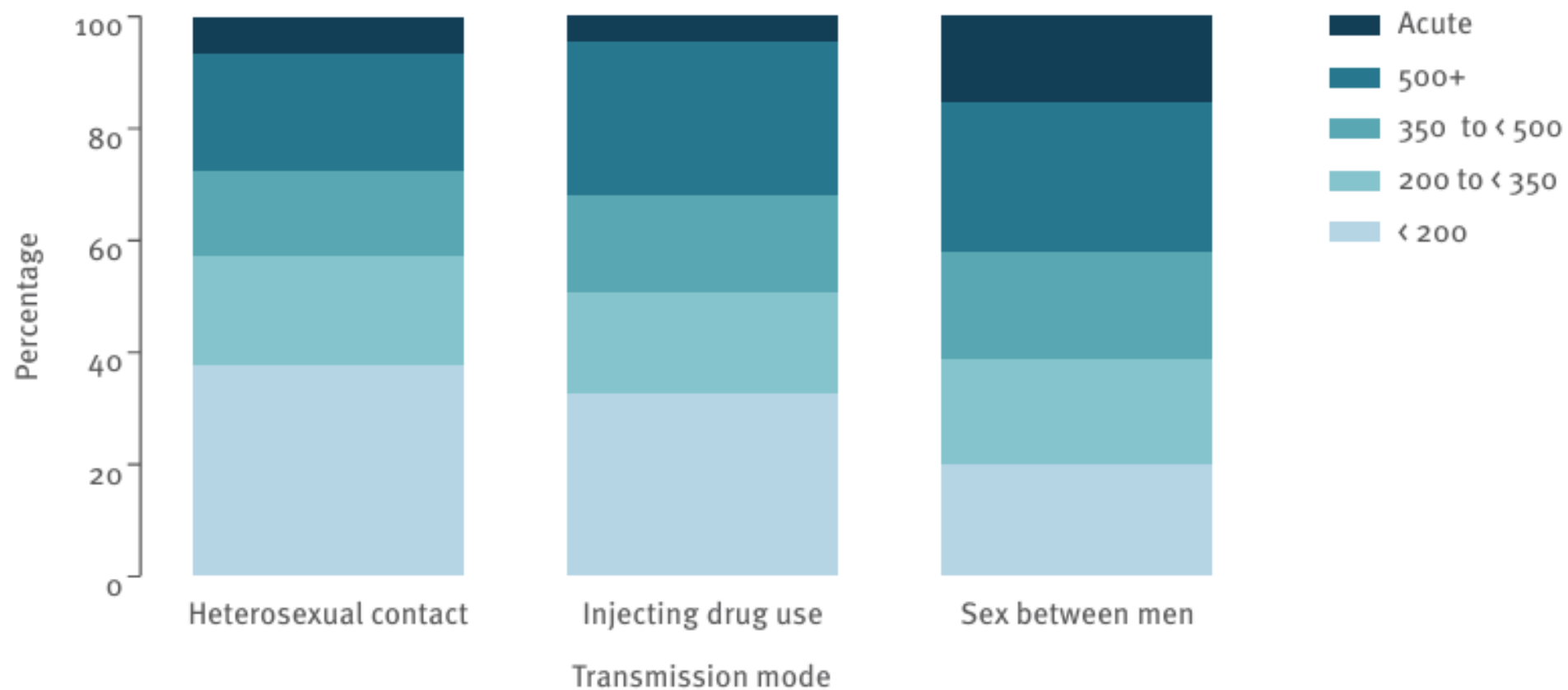
^c No data reported by Andorra, Belarus, Bosnia and Herzegovina, Cyprus, Germany, Monaco, North Macedonia, the Russian Federation, San Marino, Sweden, Turkmenistan or Uzbekistan.

Fig. B. Proportion of people diagnosed late (CD4 cell count < 350 per mm³) by gender, age and transmission mode, WHO European Region, 2023



Note: CD4 data from the Russian Federation was excluded as this was not provided with age, sex and transmission route breakdowns.

Fig. 1.7. CD4 cell count cells per mm³ at HIV diagnosis and acute infection, by transmission mode, EU/EEA, 2023 (n = 11 961)





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Notiziario

dell'Istituto Superiore di Sanità

AGGIORNAMENTO DELLE NUOVE DIAGNOSI
DI INFEZIONE DA HIV
E DEI CASI DI AIDS IN ITALIA
AL 31 DICEMBRE 2023



Punti chiave - Dati in breve

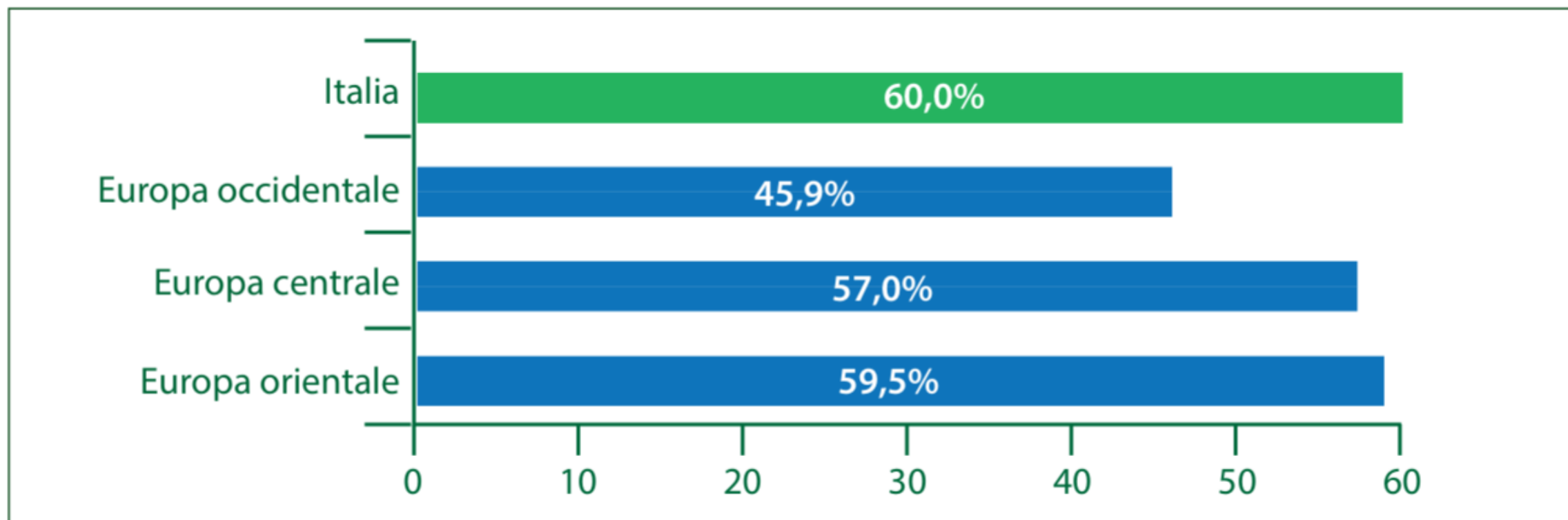
Sorveglianza delle nuove diagnosi di infezione da HIV

Sorveglianza dei casi di AIDS

Approfondimenti

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Late presenters 2023*



(*) *Late presenters*: nuove diagnosi di infezione da HIV con numero di linfociti CD4 <350 cell/ μ l.

Fonti: Sistema di Sorveglianza HIV nazionale, ECDC/WHO. HIV/AIDS Surveillance in Europe 2024-2023 data (1)

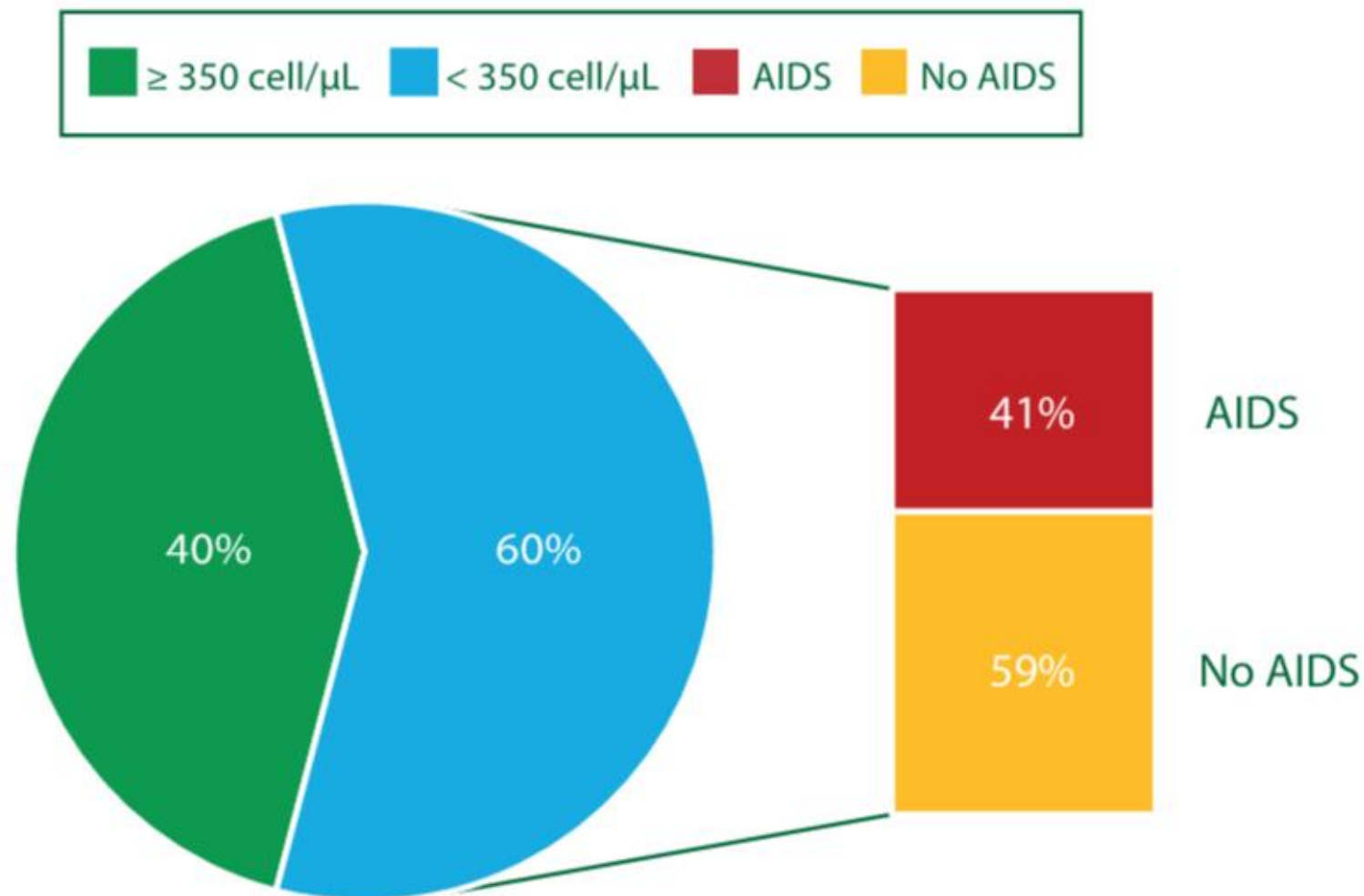


Figura 12 - Proporzione delle nuove diagnosi di infezione da HIV per numero di linfociti CD4 e diagnosi di AIDS (2023)

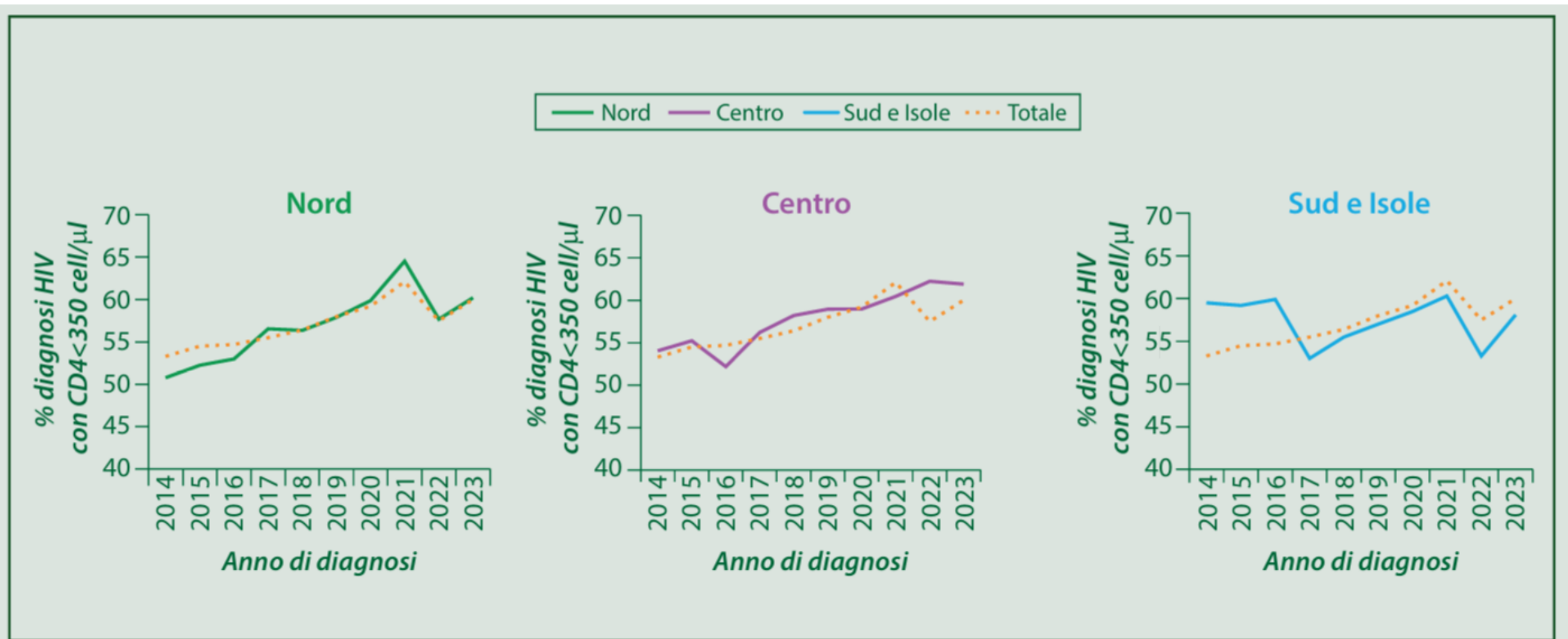


Figura 1 - Andamento della proporzione di diagnosi HIV tardive (con CD4<350 cell/μL) per area geografica di residenza (2014-2023)

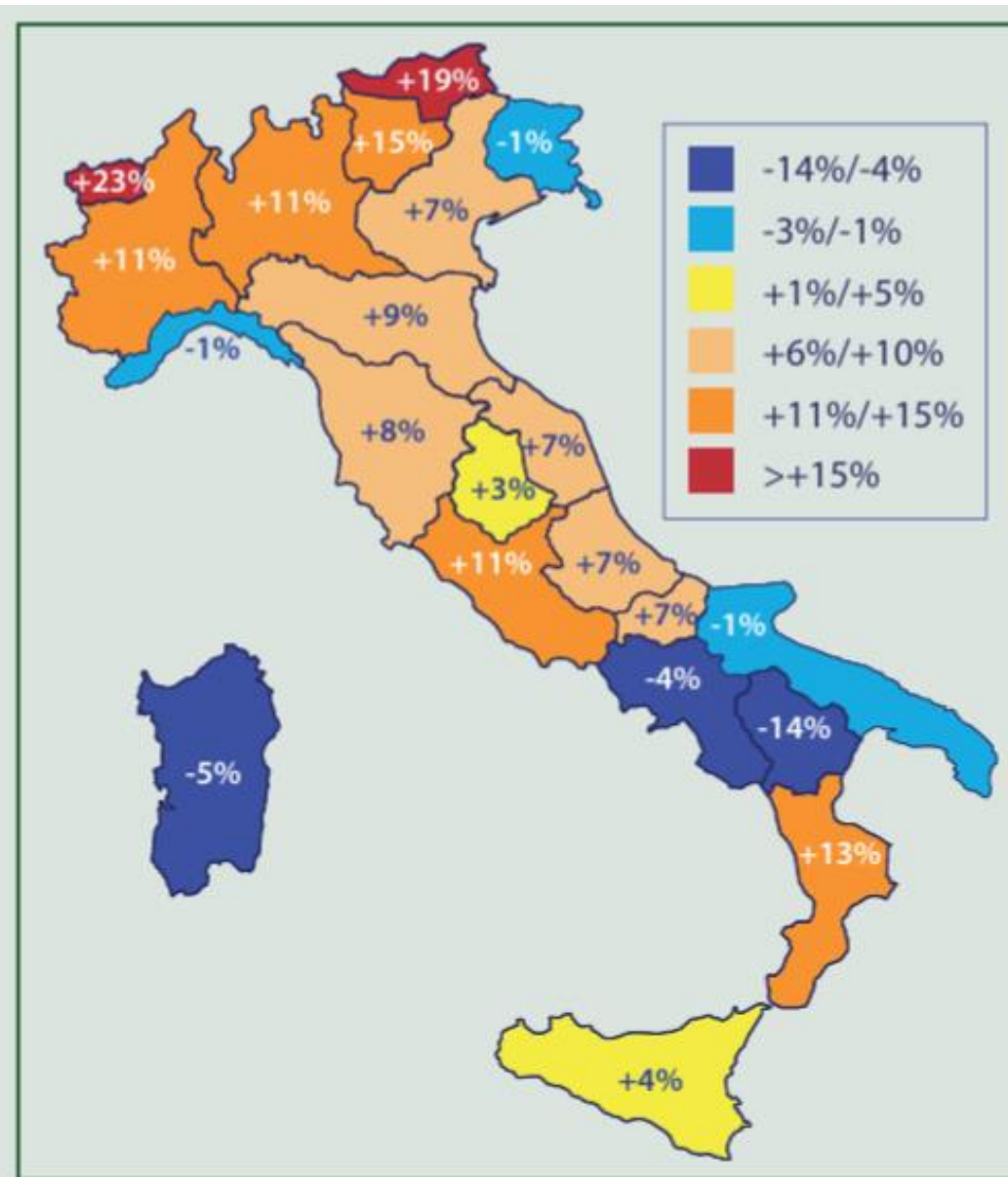


Figura 2 - Variazione della proporzione di diagnosi HIV tardive (con CD4<350 cell/ μ L) per Regione di residenza (2023 vs 2014)

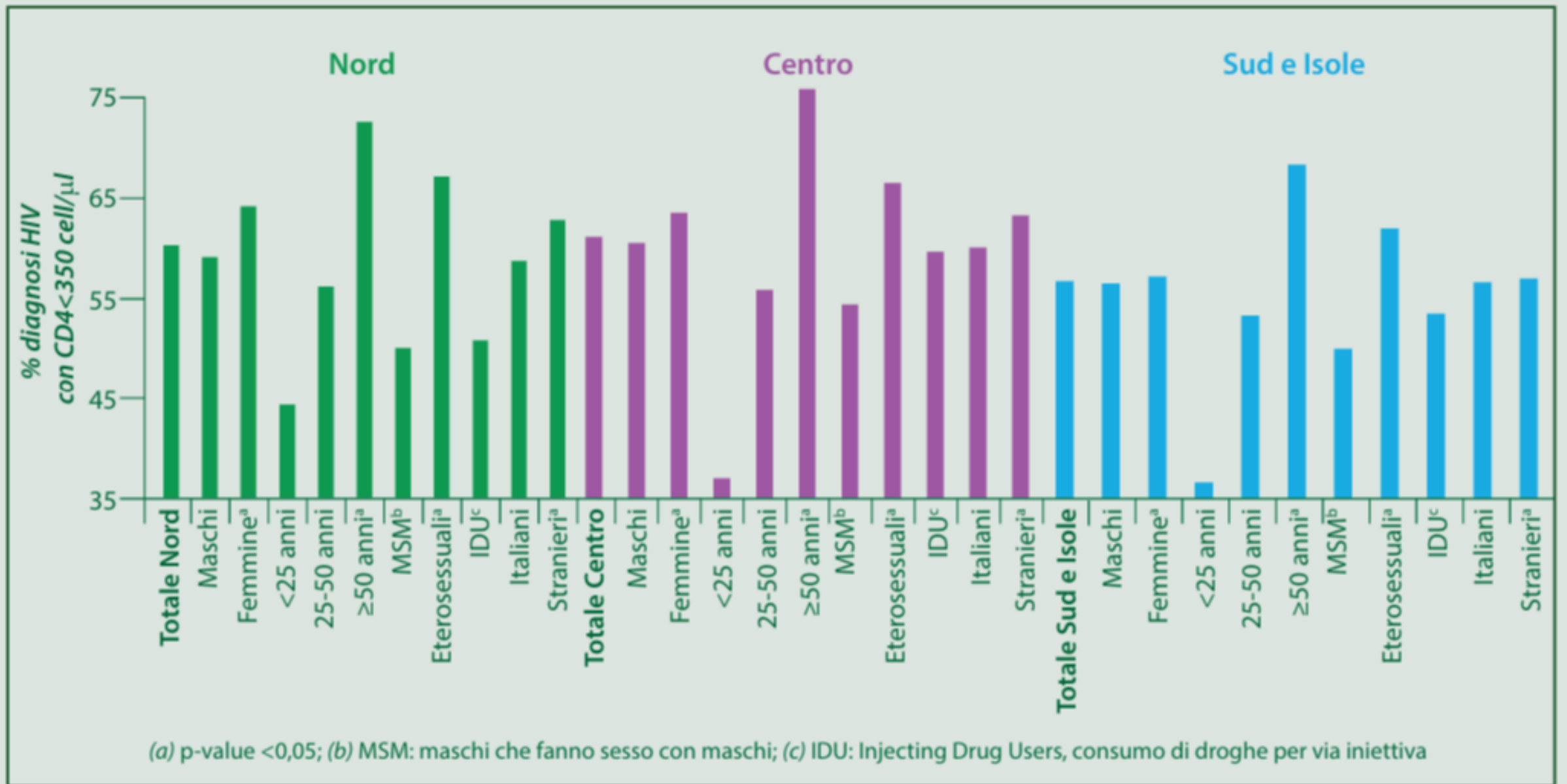


Figura 3 - Principali caratteristiche delle diagnosi HIV tardive per area geografica di residenza (2021-2023)

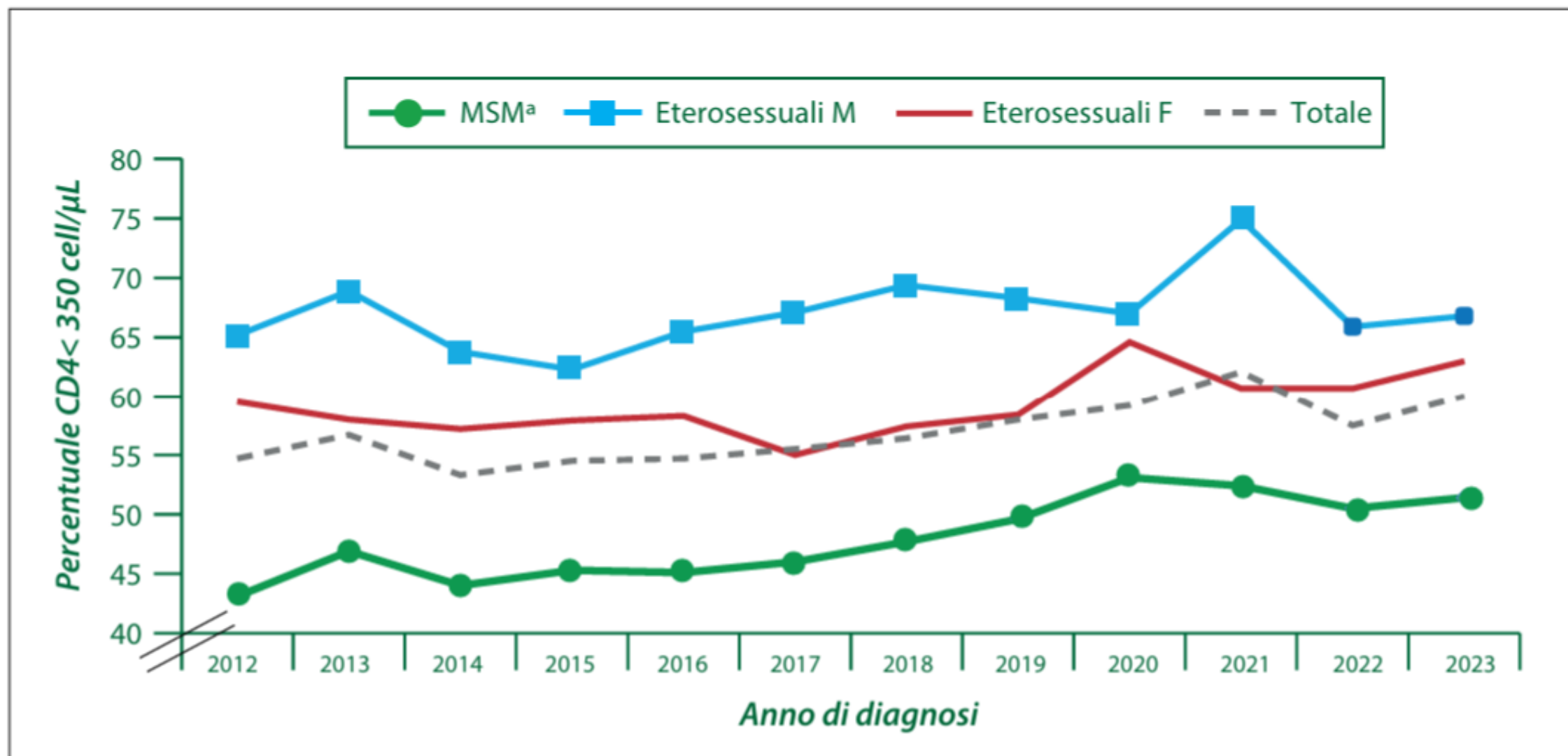


Figura 14 - Proporzione di nuove diagnosi di infezione da HIV con numero di linfociti CD4<350 cell/μL per le principali modalità di trasmissione e anno di diagnosi (2012-2023)

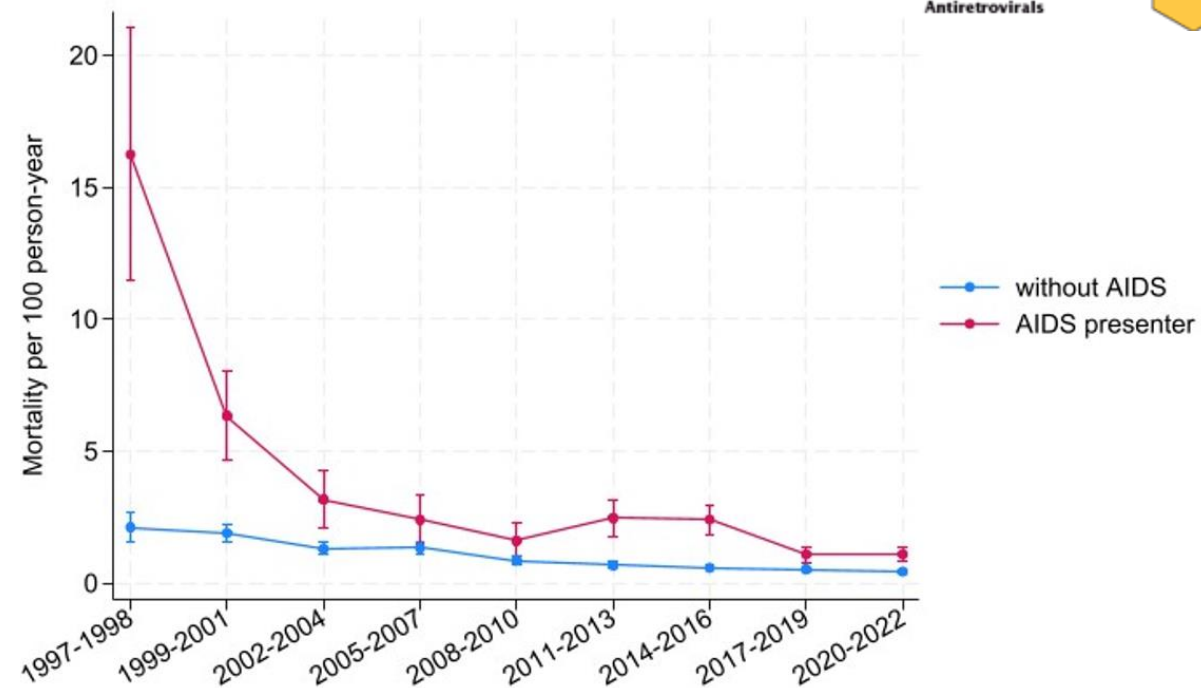
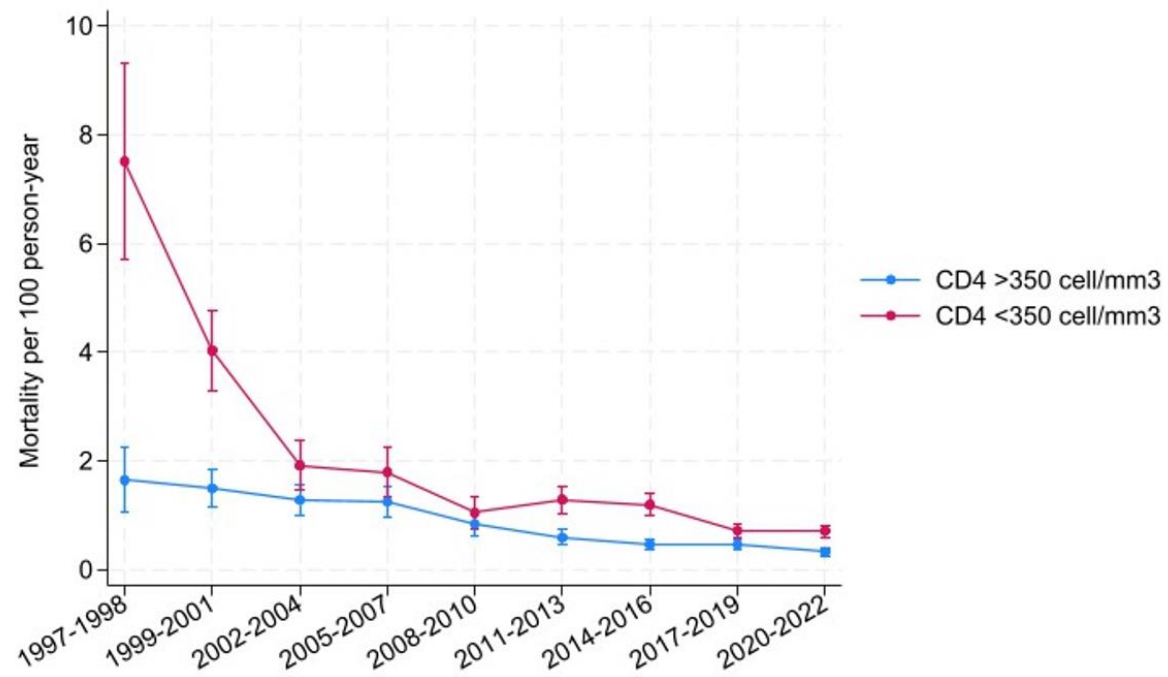
Why late presentation is a problem?

Table 1. Characteristics of People With HIV Newly Enrolled in the Cohort According to the Calendar Period

Characteristics	Overall	Calendar Period								
		1997– 1998	1999– 2001	2002– 2004	2005– 2007	2008– 2010	2011– 2013	2014– 2016	2017– 2019	2020– 2022
Number of enrolled	17 006	3355	957	791	513	1583	2759	3208	2686	1154
Male sex assigned at birth, %	77.6%	68.6%	69.6%	69.2%	75.6%	80.9%	80%	81.3%	82.9%	84.1%
Age at enrollment, mean (95% CI)	38.7 (38.5–38.8)	35.6 (35.2–35.9)	36.5 (35.9–37.2)	37.8 (37.1–38.6)	38.4 (37.5–39.3)	39 (38.5–39.5)	39.1 (38.7–39.5)	39.6 (39.3–40)	40.5 (40.1–40.9)	41.7 (41–42.3)
Age strata, %										
<45	75.8%	90.6%	86.3%	83.6%	77.6%	75.7%	72.7%	70.3%	66%	63.3%
>45	24.2%	9.4%	13.7%	16.4%	22.4%	24.3%	27.3%	29.7%	34%	36.7%
Italian, %	81.4%	95.1%	89.9%	88.7%	85%	83.3%	77.4%	75.5%	72.5%	72.8%
Mode of HIV acquisition, %										
HE	37.7%	32.1%	43.3%	43.6%	40.7%	39.9%	40.6%	36.4%	37.6%	38.2%
MSM	40.2%	17%	22.5%	28.7%	39%	48.1%	45%	51.7%	51.9%	48.3%
PWID	16.5%	47.1%	29.5%	19.1%	13.7%	7.6%	7.7%	5.6%	5.8%	4.6%
Other	5.6%	3.8%	4.8%	8.6%	6.6%	4.5%	6.5%	6.3%	4.7%	8.9%
CD4 at enrollment										
Mean (95% CI)	418 (413–422)	481 (471–491)	440 (420–458)	434 (412–454)	414 (388–440)	439 (425–453)	411 (400–422)	404 (393–413)	367 (355–378)	352 (333–368)
>500 cell/μL, %	35.1%	44.5%	39.4%	37.7%	33.8%	36.5%	33.4%	33.3%	28.2%	26.6%
350–499 cell/μL, %	20.7%	21.5%	19.1%	20.2%	20.5%	22.7%	22.1%	20.3%	18.9%	18.9%
200–349 cell/μL, %	18.2%	14.8%	16%	18%	20.1%	19.7%	19.1%	18.3%	20.2%	19.6%
<200 cell/μL, %	25.9%	18.6%	25.4%	24.1%	25.6%	21.1%	25.5%	28.1%	32.6%	34.8%
Less than 350 cell/μL CD4 at enrollment, %	44.2%	34%	41.4%	42.1%	45.7%	40.8%	44.4%	46.4%	52.8%	54.5%
AIDS Presenters, %	12.1%	10.6%	14.2%	13.4%	17.7%	9.4%	11%	11.8%	13.6%	14.2%
HCV serostatus at enrollment										
HCV positive, %	19%	52.3%	34.6%	21.6%	17.1%	10.7%	9.6%	6.8%	6.5%	4.8%
HBsAg serostatus at enrollment										
HBsAg positive	5.7%	8%	7.1%	7.4%	5.8%	6.7%	5%	4.7%	3.9%	4.4%

CI, confidence interval; HE, heterosexual; MSM, men who have sex with men; PWID, people who inject drugs.







Burden of advanced HIV disease among antiretroviral therapy-experienced persons with HIV in Italy over the past 20 years

Annalisa Mondì ¹  , Alessandro Cozzi-Lepri ², Valentina Mazzotta ¹, Silvia Nozza ³, Antonella Cingolani ⁴, Lucia Taramasso ⁵, Andrea Giacomelli ⁶, Simone Lanini ⁷, Valeria Bono ⁸, Alice Ianniello ⁹, Laura Comi ¹⁰, Chiara Papalini ¹¹, Cristina Mussini ¹², Enrico Girardi ¹³, Andrea Antinori ¹, Icona Foundation Study Group [^]

- Over the past 20 years, 4.3% of PWH in Italy developed advanced HIV disease (AHD) despite being in care.
- The risk of developing AHD among ART-experienced PWH halved over the last decade.
- Women and socially vulnerable groups face a higher risk of AHD despite ART.
- Poor virologic control and gaps from care act synergistically to increase AHD risk.
- PWH developing AHD after engagement in care face an **8-fold higher risk of death**.

Missed opportunities of HIV diagnosis



Overlooked cases of HIV infection: An Italian tale of missed diagnostic opportunities

Lorena van den Bogaart ^{a,b,†} · Alice Ranzani ^{a,b,†} · Letizia Oreni ^a · Andrea Giacomelli ^{a,b} · Mario Corbellino ^b · Stefano Rusconi ^{a,b} · Massimo Galli ^{a,b} · Spinello Antinori ^{a,b} · Anna Lisa Ridolfo ^b [Show less](#)

- The analysis considered **203 LPs** (60.6% of the patients newly diagnosed as having HIV infection during the study period).
- Most had had ≥ 1 medical encounter in the five years before diagnosis, and **54 (26.6%) had been diagnosed as having ≥ 1 IC without undergoing HIV testing.**
- The most frequent ICs were herpes zoster (19.8%), constitutional symptoms (17.4%) and lympho/thrombocytopenia (12.8%)
- **Missed opportunities for testing occurred in the settings of primary care (44.9%), specialist medical (38.2%) or surgical services (11.3%), and emergency departments (5.6%).**
- **Twenty-five (53.2%) of the 47 subjects with a non AIDS-defining IC had AIDS at the time of the diagnosis of HIV infection.**
- Subjects **aged >60 years** were at increased risk of missed diagnostic opportunities (aOR 4.80, $p = 0.008$).

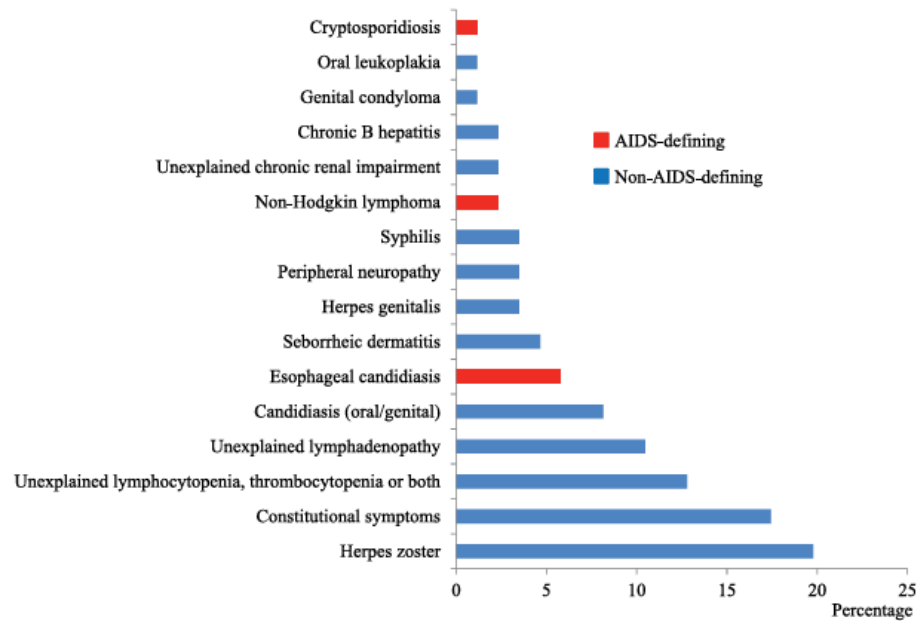


Fig. 1. Indicator conditions associated with missed opportunities of diagnosing HIV infection (total number of IC diagnoses = 86).

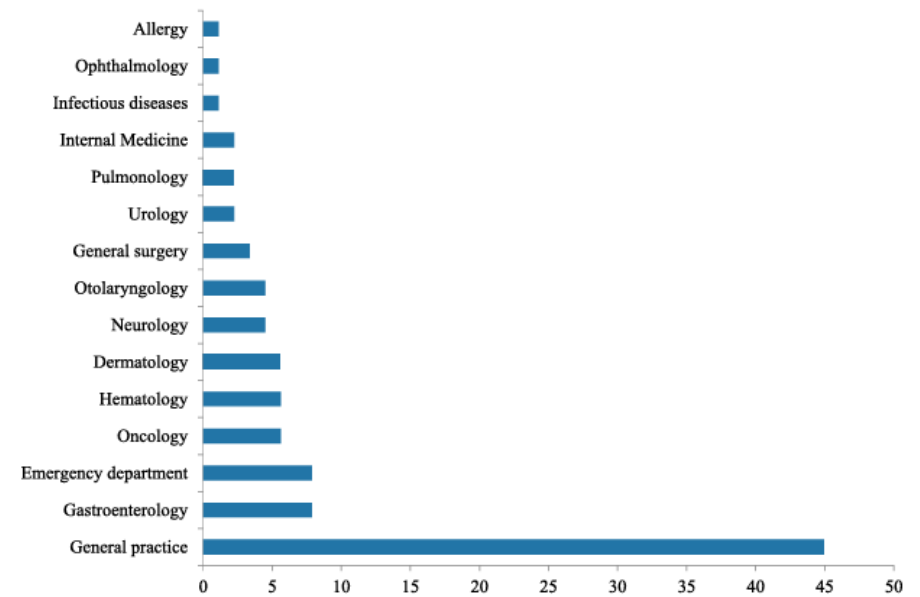


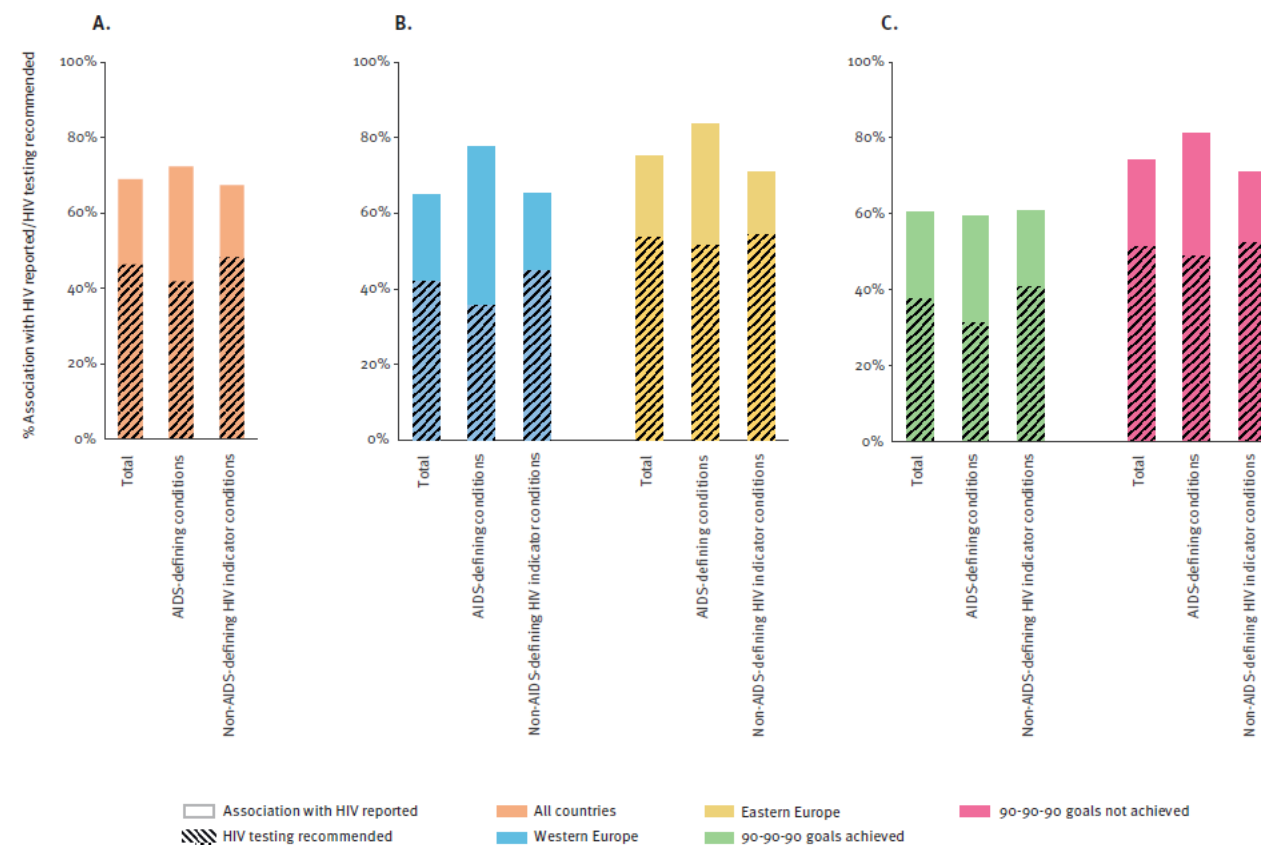
Fig. 2. Healthcare settings in which indicator conditions were documented but no HIV testing was recommended (total number of medical evaluations = 89).

National medical specialty guidelines of HIV indicator conditions in Europe lack adequate HIV testing recommendations: a systematic guideline review

Carlijn C.E. Jordans¹, Marta Vasylyev², Caroline Rae³, Marie Louise Jakobsen⁴, Anna Vassilenko⁵, Nicolas Dauby⁶, Anne Louise Grevsen⁴, Stine Finne Jakobsen⁴, Anne Raahauge⁴, Karen Champenois⁷, Emmanuelle Papot⁷, Jakob J. Malin⁸, T. Sonia Boender^{9,10}, Georg M.N. Behrens¹¹, Henning Gruell¹², Anja Neumann¹³, Christoph D. Spinner¹⁴, Frederik Valbert¹⁵, Karolina Akinosoglou¹⁶, Evangelia G. Kostaki¹⁴, Silvia Nozza¹⁷, Andrea Giacomelli¹⁸, Giuseppe Lapadula¹⁹, Maria Mazzitelli^{20,21}, Carlo Torti²², Raimonda Matulionyte²³, Elzbieta Matulyte²³, Berend J. Van Welzen²⁴, Kathryn S. Hensley¹, Magdalena Thompson²⁵, Magdalena Ankiersztajn-Bartczak²⁶, Agata Skrzat-Klapaczyska²⁷, Oana Sandulescu^{28,29}, Adrian Streinu-Cercel^{28,29}, Anca Streinu-Cercel^{28,29}, Viktor Daniel Miron³⁰, Anastasia Pokrovskaya³¹, Anna Hachfeld³², Antonina Dorokhina^{33,34}, Maryna Sukach³⁵, Emily Lord³⁶, Ann K. Sullivan³⁷, Casper Rokx³⁸, on behalf of the Guidelines Review Group for the projects: Optimising testing and linkage to care for HIV across Europe (OptTEST by HIE) and the Joint Action on integrating prevention, testing and linkage to care strategies across HIV, viral hepatitis, TB and STIs in Europe (INTEGRATE)³⁹

FIGURE 1

Proportions of identified HIV indicator condition guidelines that report the association with HIV (solid boxes) and recommend HIV testing (dashed boxes) for (A) all countries, (B) western Europe vs eastern Europe, (C) 90-90-90 goals achieved vs not achieved, 2019–2021 (n = 15)



Which are the best screening strategies?

A systematic review and meta-analysis of the evidence for community-based HIV testing on men's engagement in the HIV care cascade

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Abstract

Objective: Men with HIV are less likely than women to know their status, be on antiretroviral therapy, and be virally suppressed. This review examined men's community-based HIV testing services (CB-HTS) outcomes.

Design: Systematic review and meta-analysis.

Methods: We searched seven databases and conference abstracts through July 2018. We estimated pooled proportions and/or risk ratios (for meta-analyses) for each outcome using random effects models.

Results: 188 studies met inclusion criteria. Common testing models included targeted outreach (e.g. mobile testing), home-based testing, and testing at stand-alone community sites. Across 25 studies reporting uptake, 81% (CI: 75–86%) of men offered testing accepted it. Uptake was higher among men reached through CB-HTS than facility-based HTS (RR = 1.39; CI: 1.13–1.71). Over 69% (CI: 64–71%) of those tested through CB-HTS were men, across 184 studies. Across studies reporting new HIV-positivity among men ($n = 18$), 96% were newly diagnosed (CI: 77–100%). Across studies reporting linkage to HIV care ($n = 8$), 70% (CI: 36–103%) of men were linked to care. Across 57 studies reporting sex-disaggregated data for CB-HTS conducted among key populations, men's uptake was high (80%; CI: 70–88%) and nearly all were newly diagnosed and linked to care (95%; CI: 94–100% and 94%; CI: 88–100%, respectively).

Conclusion: CB-HTS is an important strategy for reaching undiagnosed men with HIV from the general population and key population groups, particularly using targeted outreach models. When compared to facility-based HIV testing services, men tested through CB-HTS are more likely to uptake testing, and nearly all men who tested positive through CB-HTS were newly diagnosed. Linkage to care may be a challenge following CB-HTS, and greater efforts and research are needed to effectively implement testing strategies that facilitate rapid ART initiation and linkage to prevention services.

Article

HIV-Indicator Condition Guided Testing in a Hospital Setting

Diletta Barbanotti *, Camilla Tincati , Alessandro Tavelli , Andrea Santoro, Matteo Sala, Teresa Bini, Anna De Bona, Antonella d'Arminio Monforte  and Giulia Carla Marchetti

- We organized an **in-hospital HIVICs guided screening** campaign named ICEBERG in Milan, Italy, between 2019 and 2021.
- Among the **520 subjects enrolled**, mainly presenting with viral hepatitis or mononucleosis-like syndrome, **20 resulted HIV positive (3.8% prevalence)**.
- A significant proportion of them had multiple conditions and advanced immunosuppression, with **40% being AIDS-presenters**.
- As **adherence to the screening campaign was modest for non-ID specialists**, **educational interventions** to raise clinicians' sensitivity are urgently needed.
- **HIV-ICs guided** testing was confirmed as a useful tool, but a combined approach with **other screening strategies seems to be essential for early HIV diagnosis**.

Estimating the potential health economic value of introducing universal opt-out testing for HIV in emergency departments in Italy

Antonella d'Arminio Monforte¹, Gabriella d'Ettore², Gioacchino Galardo³, Enyal Lani⁴, Eva Kagenaar⁴, Susie Huntington⁴, James Jarrett^{5,*}, Murad Ruf⁵, Walter Ricciardi⁶ 

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³Department of Emergency-Acceptance, Critical Areas and Trauma, Hospital Policlinico Umberto I, Rome, Italy

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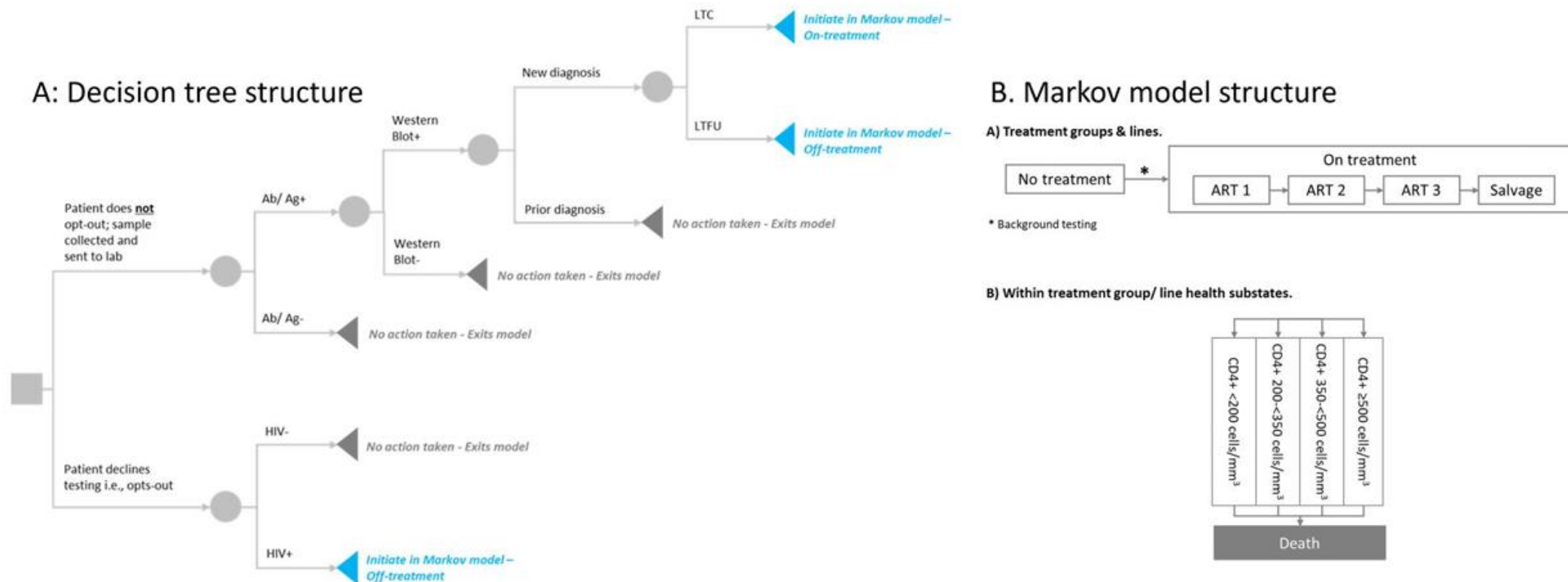


Figure 1. Universal opt-out ED testing algorithm decision tree (A) and Markov model schematic (B). Abbreviations: Ab/Ag: antibody/antigen; ART: antiretroviral therapy; HIV: human immunodeficiency virus; LTC: linked to care; LTFU: lost to follow-up.

Table 1. Model input parameters used for the initial ED visit

Inputs used in primary analysis			
Parameter group	Parameter	Value	Source
Prevalence and participation	HIV prevalence in ED attendees	0.52%	Vaz-Pinto <i>et al.</i> [17]
	Percentage of HIV-positive people undiagnosed at start of ED attendance	34.67%	
	Number of HIV-positive people undiagnosed at start of ED attendance	17.99	Calculated: $10\,000 \times 0.52\% \times 34.67\%$
	Percentage of people tested during ED visit in universal opt-out testing strategy	88.89%	Vaz-Pinto <i>et al.</i> [17]
	Percentage of people tested during ED visit in indicator-condition guided testing	1.16% ^a	D'Arminio Monforte <i>et al.</i> [25]
	Percentage of people with new HIV diagnosis who are then linked to HIV care (including treatment initiation)	91.67% ^b	Smout <i>et al.</i> [16]

- **Universal opt-out ED testing** could be a **cost-effective strategy** to increase the number of new HIV diagnoses and improve HIV health outcomes in Italy.
- The **full benefit is likely underestimated** as the model **did not consider averted transmissions or re-engagement in the care** of people previously diagnosed with HIV.
- Further real-world epidemiologic and implementation research is needed to verify the findings.



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Opt-out HIV testing in the UK

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- Initial results show that the **optout programme is not just a good public health strategy but it is also cost-effective.**
- An opt-out approach helps to **destigmatise and normalise HIV testing** and to address inequalities in access to HIV care.
- Opt-out **can find cases among people who would not consider themselves at risk** of acquiring HIV, many of whom would never seek sexual health services.
- Also, the potential exists to get people already aware of their status who have **disengaged from care back into the care system.**
- Early detection of HIV early results in significant cost savings since the costs for care of people who present late with HIV are considerably higher.

News story

ED testing finds thousands with undiagnosed HIV, Hepatitis B & C

In the first 24 months, 34 emergency departments conducted
1,981,590 HIV tests
1,502,799 hepatitis C tests
1,185,678 hepatitis B tests, significantly increasing the annual number of bloodborne virus tests in England.

Among those tested, 73% had no record of a previous HIV test, 80% had not been tested for hepatitis C, and 76% had no record of a hepatitis B test in surveillance data.

The UKHSA analysis looked in depth at 21 of the 34 sites, between April 2022 and March 2024. It found that:

- 1,957 people were newly diagnosed with hepatitis B
- 762 people were newly diagnosed with hepatitis C
- 391 people with HIV (new HIV diagnoses data is only available to Dec 2023)

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News

NHS expands HIV opt-out testing to 30 more A&Es

 15 February 2025

Long term conditions

Patient care

Thousands more people across England are to benefit from routine HIV testing in A&Es this year, thanks to the extension of a major NHS public health initiative.

Conclusions

- Late presentation and advanced HIV disease are associated with poor prognosis.
- Early HIV diagnosis is key to improving clinical outcomes.
- Screening based on HICs is seldom adopted by non-infectious disease physicians and is rarely included in specialty guidelines.
- Community based testing are crucial to target key populations
- Opt-out strategies have been proven to be cost-effective and are widely implemented for blood-borne viruses in the UK, providing real-world evidence of effectiveness.