

Prevalence of HIV Drug Resistance in People Newly Diagnosed with HIV who have used Pre-exposure Prophylaxis in Europe; the PrEPaRe study

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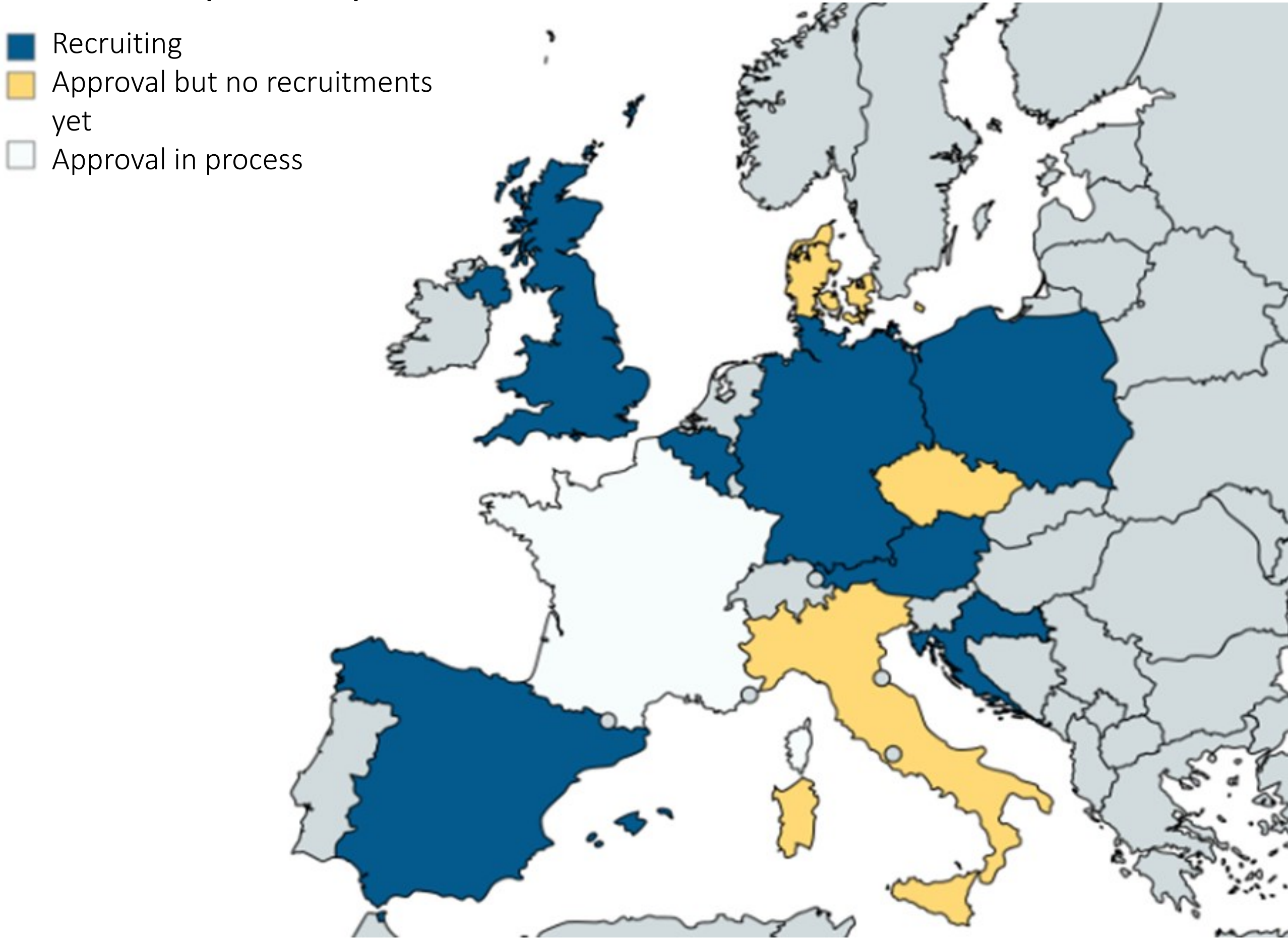
BACKGROUND

As of 2021, 22 countries in the WHO European Region had made PrEP available and fully reimbursed. However, people have also been accessing it online or via private health care. We aimed to estimate; the proportion of new HIV diagnoses in Europe among people who had used PrEP, the prevalence of HIV drug resistance in those newly diagnosed and before ART initiation, and to explore the circumstances under which infections in people using PrEP occurred.

METHODS

We conducted an observational study collecting data on adults newly diagnosed with HIV who reported having used PrEP prior to HIV diagnosis at 36 HIV clinics and community-based testing centres across 10 European countries. Data collected included:

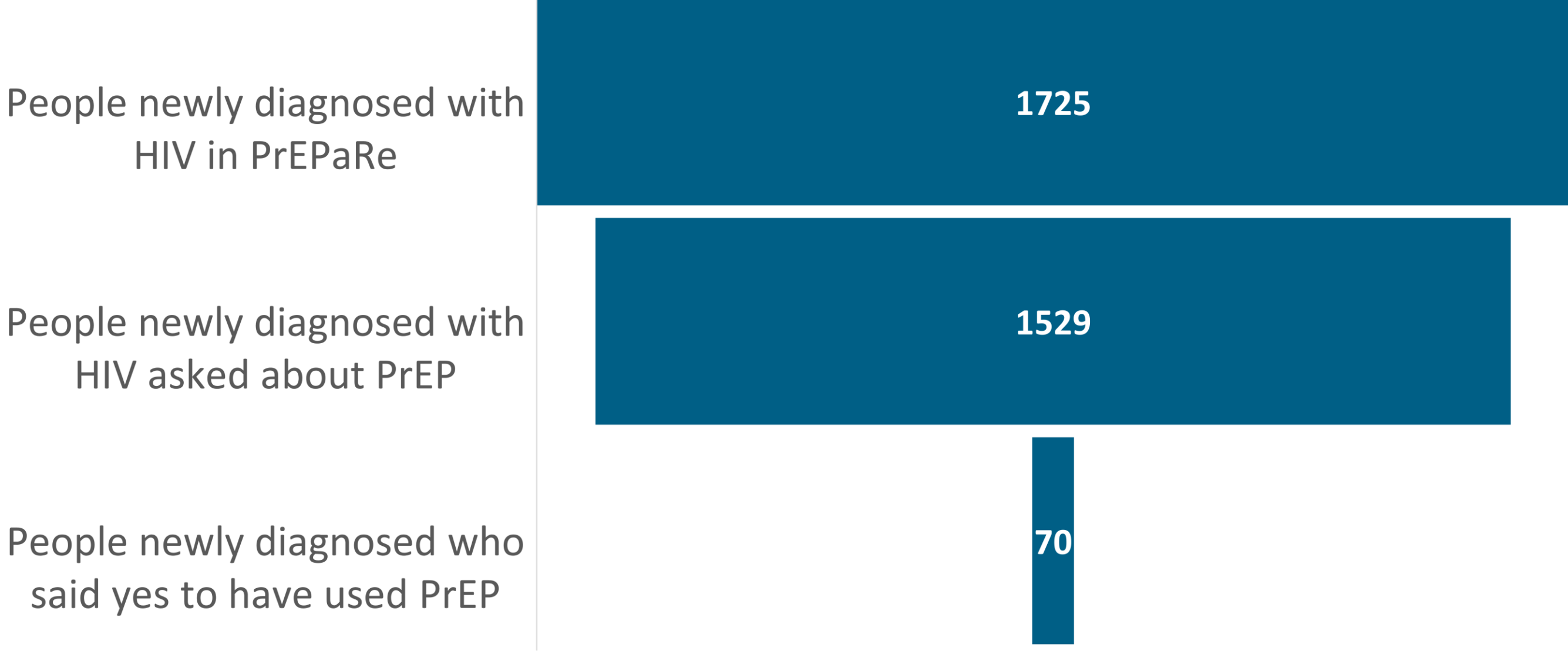
- Aggregated data on total number of HIV diagnoses (Oct2020-Mar2024)
- Individual data (self-completed questionnaires and clinical referral forms). Level of adherence was based on information provided in the self-completed questionnaire.



RESULTS

18 sites across 9 countries provided aggregated data for 31.75 years of follow-up; 1,725 new HIV diagnoses were recorded. In 89% (n=1529) of cases clinics had asked about PrEP and 5% (n=70) had used it.

Figure 1. PrEP use among people newly diagnosed with HIV recorded in PrEPaRe



Fifty-five participants completed the questionnaire: all were men, 89% MSM, with a median age of 35 years (range:24-55), 71% of white ethnicity and 91% with at least secondary school education. In 58% of cases the first HIV-positive test was at a hospital/clinic as an outpatient and in 18% at a general-practitioner and the main reason (60%) was regular testing. 23% (n=13) thought that they acquired HIV whilst taking PrEP, 13% (n=7) possibly, 51% (n=28) did not think they acquired HIV whilst on PrEP and 13% (n=7) did not know.

Prevalence of major antiretroviral drug resistance mutation (ART-DRM) to emtricitabine (FTC) or tenofovir (TDF) (specifically K65REN, M184VI, K70E) was 24% (12/50; 95% CI:12%-36%) (table 1).

Five individuals thought they acquired HIV whilst taking PrEP and being fully adherent: 3 had major ART-DRMs to FTC/TDF, 1 did not have any detected and for one the resistance test was not available.

Table 1. Resistance among PLHIV exposed to PrEP

	Prevalence (n/N)	95% confidence interval
Major antiretroviral drug resistance mutation to FTC or TDF detected with frequency above 15% (K65REN, M184VI, K70E)	24% (12/50)	(12% - 36%)
M184VI exclusively	10	
K103N exclusively	1	
L10I, L33I, E35D, N37S, R41K, L63T, A71T, I93L, A98S, D123E, E204A, Q207E, R211K, K277R	1	

CONCLUSIONS

In our study, 1 in 20 new HIV diagnoses occurred in people who knew about PrEP and had previously used it. The prevalence of resistance aligns with estimates from randomized controlled trials among individuals with acute HIV at enrolment.

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RESPOND Public Health Scientific Interest Group <https://chip.dk/Research/Studies/RESPOND/SIGs/Public-Health>
The PrEPaRe Study Group <https://chip.dk/Research/Studies/PrEPaRe>

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