OptTEST
OPTIMISING TESTING AND LINKAGE TO CARE FOR HIV ACROSS EUROPE

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Factors for delayed linkage to care following HIV diagnosis in the WHO European Region

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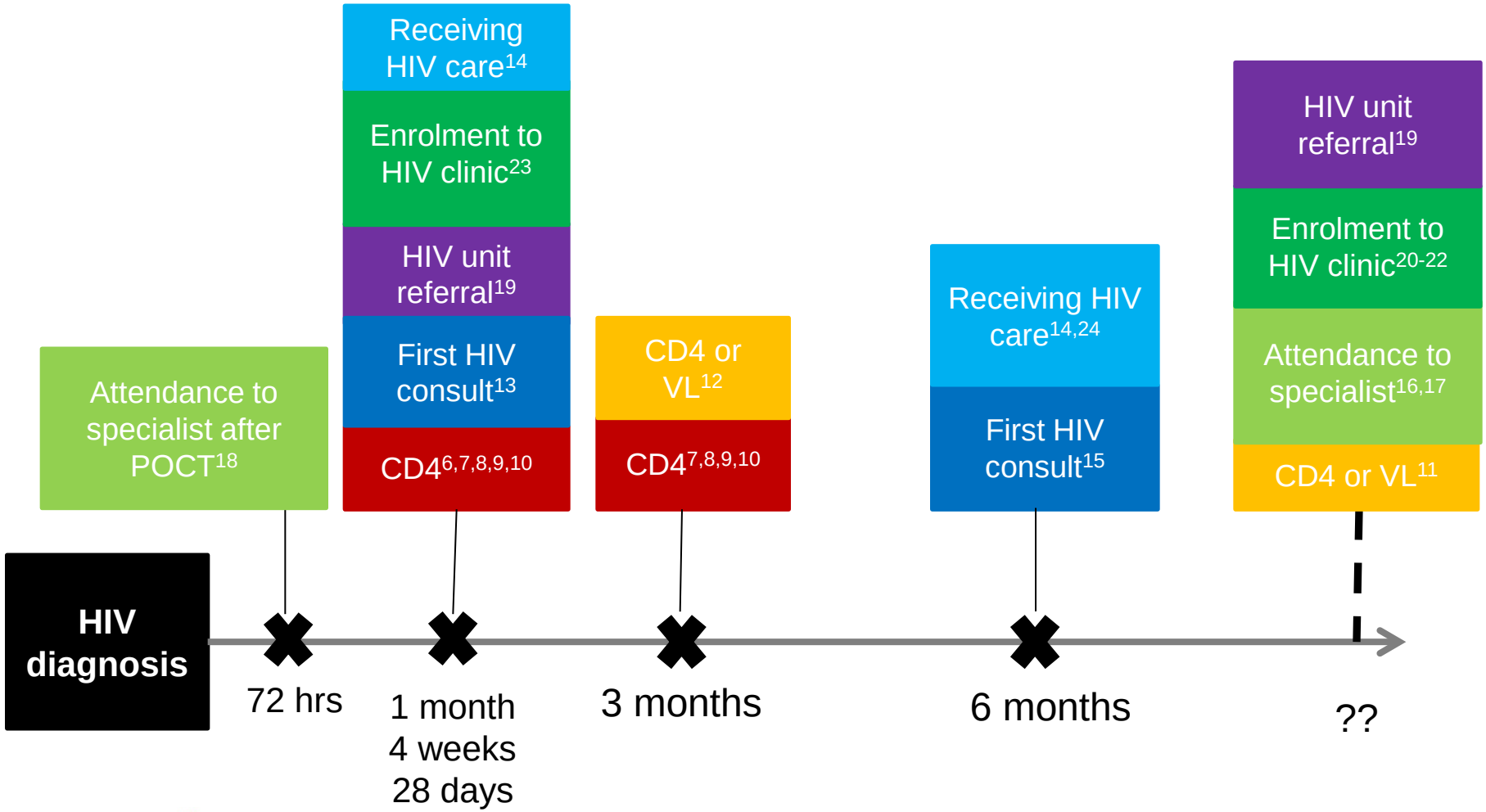
Background

- Linking people who test HIV-positive to accessible care and support services is a crucial step in the HIV continuum of care.
- Delayed linkage to HIV care is associated with delayed receipt of antiretroviral medications, faster disease progression and increased mortality.[1-4]
- Little comparable data are available on linkage to care in Europe.[5]

Definitions of linkage to care in the literature



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Aim & Objectives

- **Aim:** to utilise an existing surveillance dataset and apply a standardised definition of linkage to care, producing comparable estimates
- **Objectives:**
  - To describe linkage to HIV care following diagnosis in the World Health Organization (WHO) European Region
  - To identify factors associated with delayed linkage

Methods - Data

- **Data source:** The European Surveillance System (TESSy)
- Case reports of new HIV diagnoses submitted to the European Centre for Disease Prevention and Control (ECDC) and the WHO Regional Office for Europe in 2014
- Data were included for countries that reported using the revised submission template (n=33/53).

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Methods – Inclusion/Exclusion

- Inclusion criteria:
  - Adults (aged ≥15 years) diagnosed with HIV between 2010 and 2014
- Exclusion criteria:
  - Previously diagnosed (HIVStatus=PREVPOS)
  - Previously in care (CD4 count taken >14 days prior to diagnosis date)
  - Died within 3 months of diagnosis
  - Missing diagnosis and/or CD4 information
- All partial dates - only M/Q and YYYY - defaulted to middle of M/Q

Methods – Definitions

- **Linkage to care:** patient seen for specialist HIV care after diagnosis, measured as the time between the HIV diagnosis date and first CD4 count date (CD4 count taken=proxy for in care)
- **Prompt linkage to care:** patient seen for HIV care in the 3 months (≤91 days) following diagnosis
- **Delayed linkage to care:** patient seen for HIV care more than 3 months (>91 days) after diagnosis

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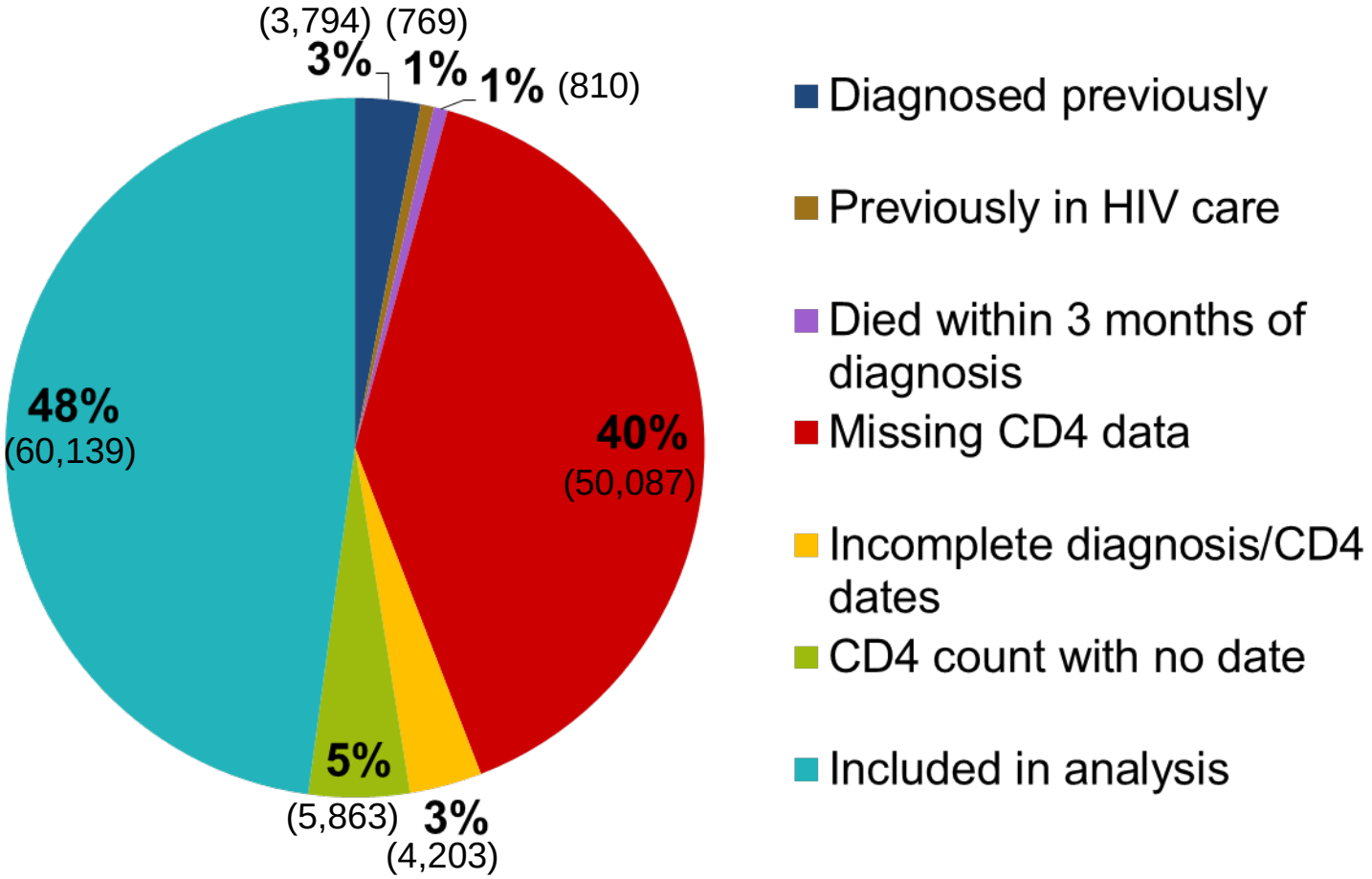
Methods – Statistical Analyses

- Factors for delayed linkage to care
  - Logistic regression
  - Factors found to be significant in univariable analyses included in final model
  - Adjustments:
    - Sex
    - Age at diagnosis
    - Diagnosis year
    - Probable HIV exposure category
    - European region of diagnosis
    - Region of origin
    - First CD4 count after diagnosis

Results

N=125,665 adults diagnosed from 2010-2014



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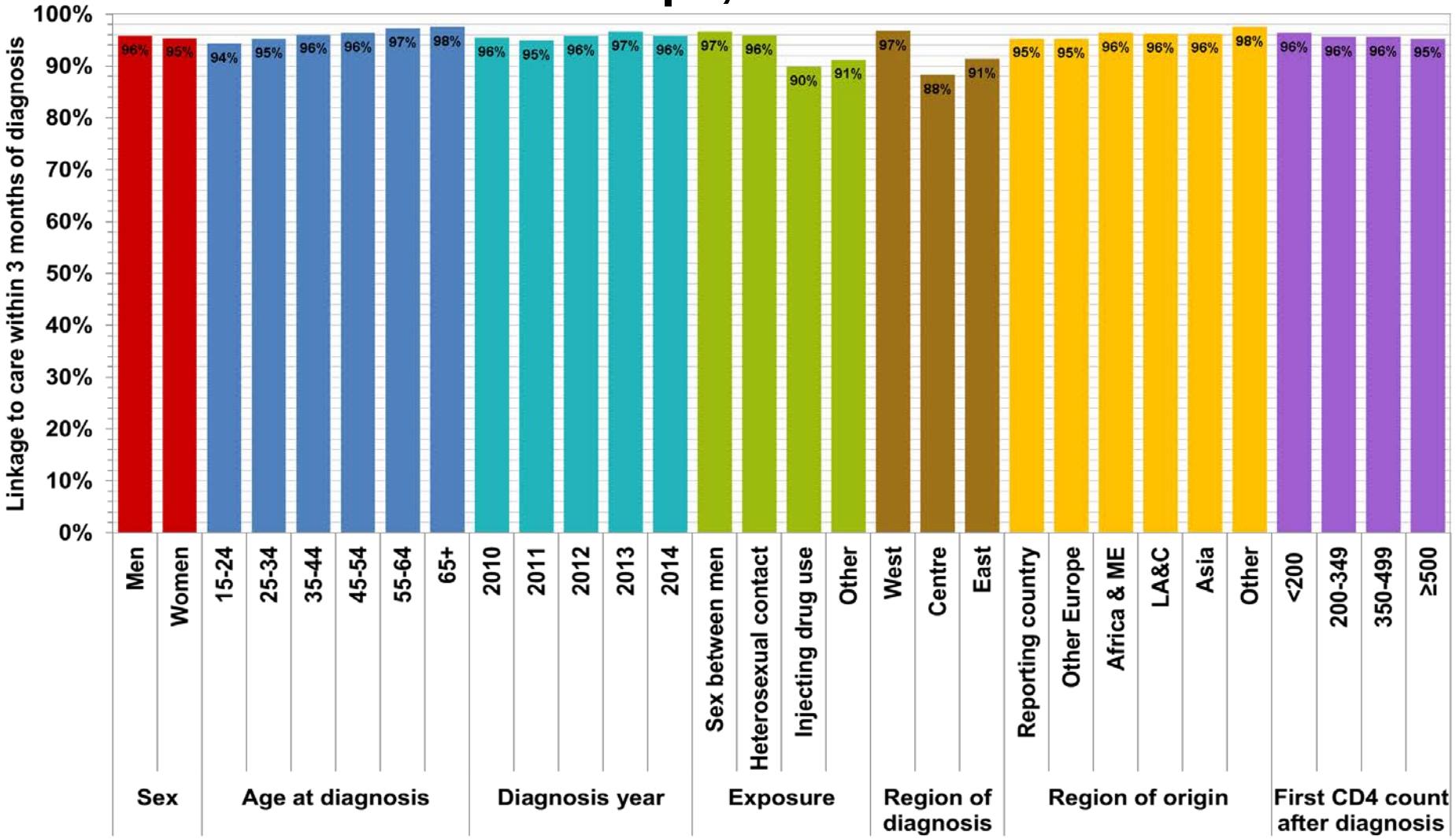
Prompt linkage to HIV care following diagnosis: Europe, 2010-2014



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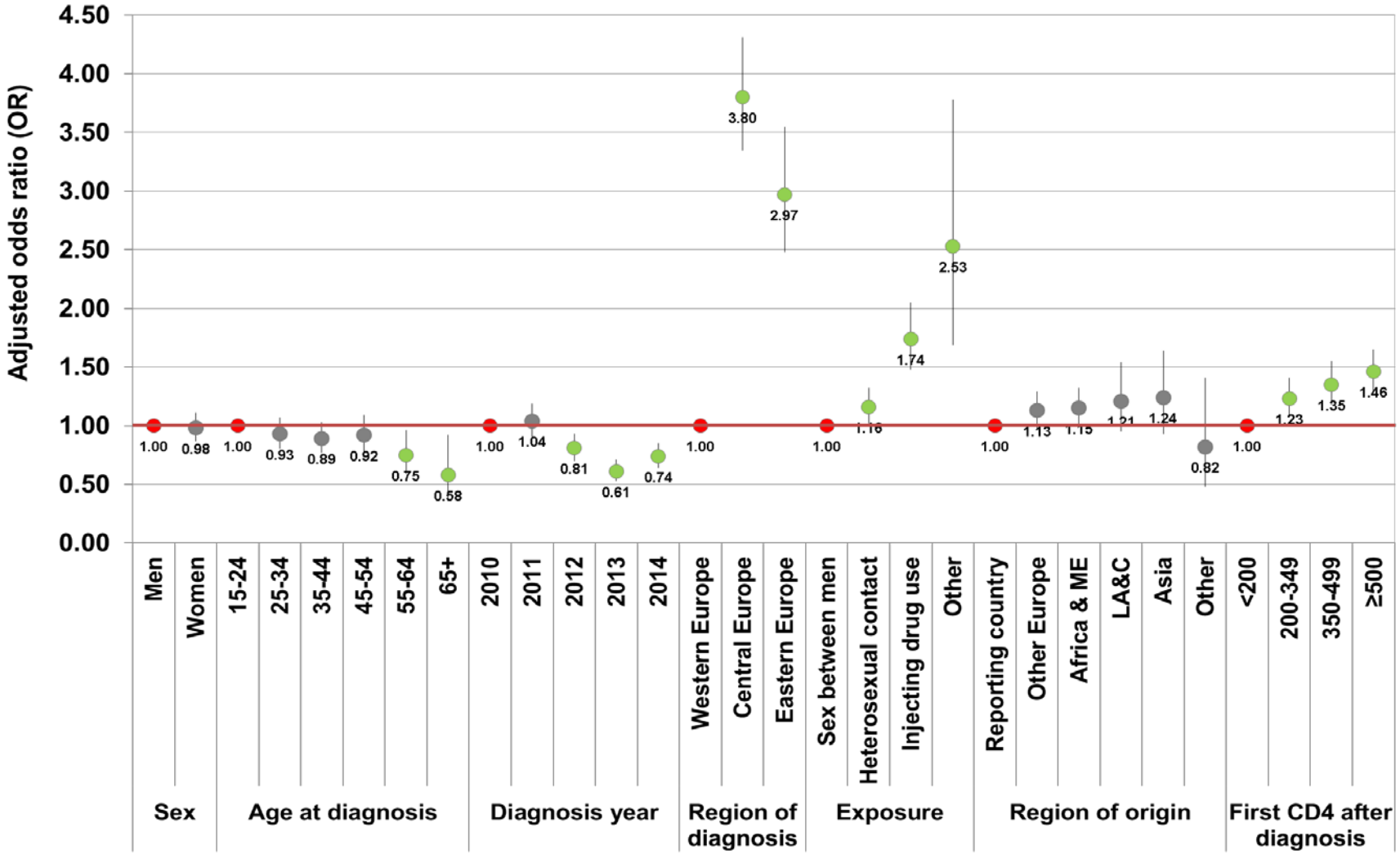
Multivariable analysis of factors associated with delayed linkage to care in Europe



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Limitations

- Analysis restricted to people with CD4 data available – unknown as to whether those missing CD4 counts were not linked to care or CD4 data not collected
- Partial dates
- Under-reporting of deaths
- Reliance on CD4 data as proxy for care – no data collected on date of first care attendance

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Conclusions

- Overall, linkage to care among adults diagnosed with HIV in Europe is prompt.
- However, given the high number of people with incomplete CD4 data, linkage estimates may be much lower than reported.
- Analyses highlight the importance of complete CD4 data reporting as almost half of patients were excluded due to missing information.
- Findings show improvements are needed in ensuring those diagnosed in Central and Eastern Europe and infected through heterosexual contact and injecting drug use enter care promptly.

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References

1) Ulett KB, Willig JH, Lin HY, et al. The therapeutic implications of timely linkage and early retention in HIV care. AIDS Patient Care STDS 2009 Jan;23(1):41-9.
2) Mugavero MJ, Davila JA, Nevin CR, et al. From access to engagement: measuring retention in outpatient HIV clinical care. AIDS Patient Care STDS 2010 Oct;24(10):607-13.
3) Gardner EM, McLees MP, Steiner JF, et al. The spectrum of engagement in HIV care and its relevance to test-and-treat strategies for prevention of HIV infection. Clin Infect Dis 2011 Mar 15;52(6):793-800.
4) Croxford S, Kitching A, Desai S, Kall M, Edelstein M, Skingsley A, Burns F, Copas A, Brown AE, Sullivan AK, Delpech V. Mortality and causes of death in people diagnosed with HIV in the era of highly active antiretroviral therapy compared with the general population: an analysis of a national observational cohort. Lancet Public Health 2017; 2: e35–46
5) Croxford S, Raben D, Burns, F, Delpech V for OptTEST by HIV in Europe. PE21/15 Linkage to care following HIV diagnosis in Europe: a review of the literature. EACS 2015.
6) Rice B, Elford J, Yin Z, Croxford S, Brown A, Delpech V. Trends in HIV diagnoses, HIV care, and uptake of antiretroviral therapy among heterosexual adults in England, Wales, and Northern Ireland. Sex Transm Dis. 2014 Apr;41(4):257-65.
7) Yin Z, Brown AE, Delpech VC. Impact of prompt assessment after diagnosis on immunological response to anti-retroviral therapy in the first year. 2014 Jul 20; 2014.
8) Oliva J, Malo C, Fernández A, Izquierdo A, Marcos H, Cevallos C, Castilla J, García R, Díez M. [Linkage to care among new human immunodeficiency virus diagnoses in Spain]. Enferm Infecc Microbiol Clin. 2014 Mar;32(3):170-3.
9) Delpech V, Brown AE, Croxford S, Chau C, Polavarapu V, Cooper N, Rooney G, Yin Z. Quality of HIV care in the United Kingdom: key indicators for the first 12 months from HIV diagnosis. HIV Med. 2013 Oct;14 Suppl 3:19-24.
10) Yin Z, Brown AE, Delpech VC. The development of an HIV service quality dashboard to evaluate HIV prevention, medical care and treatment outcomes: experience from England. 2014 Jul 19; 2014.
11) Chkhartishvili N, Sharavdze L, Chokoshvili O, DeHovitz JA, del Rio C, Tsertsvadze T. The cascade of care in the Eastern European country of Georgia. HIV Med. 2015 Jan;16(1):62-6.
12) Hall HI, Halverson J, Wilson DP, Suligoi B, Diez M, Le Vu S, Tang T, McDonald A, Camoni L, Semaille C, Archibald C. Late diagnosis and entry to care after diagnosis of human immunodeficiency virus infection: a country comparison. PLoS One. 2013;8(11):e77763.
13) van Veen MG, Trienekens S, Heijman T, Gotz HM, Zaheri S, Ladbury G, et al. Delayed linkage to care in one-third of HIV-positive individuals in the Netherlands. Sex Transm Infect 2015 May 11.

References

14) Erwin J, Morgan M, Britten N, Gray K, Peters B. Pathways to HIV testing and care by black African and white patients in London. Sex Transm Infect. 2002 Feb;78(1):37-9.

15) Suzan-Monti M, Fugon L, Marcellin F, Carrieri MP, Lert F, Obadia Y, Spire B; VESPA study group. Reduced delays in time to first HIV consultation after diagnosis in France in the antiretroviral therapy era: the possible role of a free care system. HIV Med. 2011 Jul;12(6):383-4.

16) Qvist T, Cowan SA, Graugaard C, Helleberg M. High linkage to care in a community-based rapid HIV testing and counseling project among men who have sex with men in Copenhagen. Sex Transm Dis. 2014 Mar;41(3):209-14.

17) Pokrovskaya A, Popova A, Ladnaya N, Yurin O. The cascade of HIV care in Russia,2011-2013. J Int AIDS Soc. 2014;17(4 Suppl 3):19506.

18) Casalino E, Bernot B, Bouchaud O, Alloui C, Choquet C, Bouvet E, Damond F, Firmin S, Delobelle A, Nkoumazok BE, Der Sahakian G, Viard JP, Zbar OZ, Aslangul E, Krivine A, Zundel J, Ghosn J, Nordmann P, Claessens YE, Tahi T, Riou B, Gautheret-Dejean A, et al. Twelve months of routine HIV screening in 6 emergency departments in the Paris area: results from the ANRS URDEP study. PLoS One. 2012;7(10):e46437.

19) Meulbroek M, Ditzel E, Saz J, Taboada H, Pérez F, Pérez A, Carrillo A, Font G, Marazzi G, Uya J, Cabrero J, Ingrami M, Marín R, Coll J, Pujol F. BCN Checkpoint, a community-based centre for men who have sex with men in Barcelona, Catalonia, Spain, shows high efficiency in HIV detection and linkage to care. HIV Med. 2013 Oct;14 Suppl 3:25-8.

20) Kakalou E, Papastamopoulos V, Ioannidis P, Papanikolaou K, Georgiou O, Skoutelis A. Early HIV diagnosis through use of rapid diagnosis test (RDT) in the community and direct link to HIV care: a pilot project for vulnerable populations in Athens, Greece. J Int AIDS Soc. 2014;17(4 Suppl 3):19619.

21) Kiriazova TK, Postnov OV, Perehinets IB, Neduzhko OO. Association of injecting drug use and late enrolment in HIV medical care in Odessa Region, Ukraine. HIV Med 2013 Oct;14 Suppl 3:38-41

22) Helleberg M, Haggblom A, Sonnerborg A, Obel N. HIV care in the Swedish-Danish HIV cohort 1995-2010, closing the gaps. PLoS One 2013;8(8):e72257.

23) Ankiersztejn-Bartczak M, Firląg-Burkacka E, Czeszko-Paprocka H, Kubicka J, Cybula A, Horban A, Kowalska JD. Factors responsible for incomplete linkage to care after HIV diagnosis: preliminary results from the Test and Keep in Care (TAK) project. HIV Med. 2015 Feb;16(2):88-94.

24) Supervie V. & Costagliola D. The spectrum of engagement in HIV care in France: strengths and gaps. 20th Conference on Retroviruses and Opportunistic Infections. Atlanta, USA: March 2013. Abstract #: 1030