

Linkage to care following HIV diagnosis in Europe: a review of the literature



Sara Croxford¹, Dorthe Raben², Fiona Burns³, Valerie Delpech¹ for OptTEST by HIV in Europe

¹ Public Health England, HIV/STI Department, London, United Kingdom

² Rigshospitalet, University of Copenhagen, CHIP, Department of Infectious Diseases, Copenhagen, Denmark

³ University College London, Infection & Population Health, London, United Kingdom

BACKGROUND

- Linking people who test HIV-positive to accessible and culturally appropriate 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.¹⁻³
- Though there have been efforts to describe existing definitions of retention in HIV care,² there is little work to date describing linkage into care in Europe.
- We reviewed the existing literature on linkage to care following HIV diagnosis and discuss the variation in definitions applied in Europe.

METHODS

- A literature review was conducted using PubMed and Google Scholar to search for relevant academic publications.
- A PICO framework was utilised to design the search strategy:
 - Population:** people newly diagnosed with HIV; **Intervention:** HIV diagnosis; **Comparison:** none; **Outcome:** linkage into care
- Database search:** "HIV" and search terms including: "linkage to care", "integration into care", "entry into care", "enrolment in care", "newly diagnosed in care", "engagement in care", "treatment cascade" and "continuum of care".
- To be included, studies had to be in English, set in the World Health Organisation (WHO) European Region and published before June 2015.
- A grey literature search was performed to find relevant conference proceedings and reports.

RESULTS

- Overall, >1,000 titles/abstracts were reviewed and 22 studies included, from Belgium, Denmark, France, Georgia, Greece, Italy, the Netherlands, Poland, Russia, Spain, Ukraine and the United Kingdom.
- Seven studies defined linkage to care as the time between HIV diagnosis and first CD4 count and/or viral load, with prompt linkage defined as a measurement taken 1-6 months after diagnosis (Table 1).
- Delayed linkage was defined by Ndiaye et al as presentation to care with advanced HIV disease and HIV diagnosis >6 months before initiation of care (cohort data from Belgium (Brussels) and Northern France (Nord Pas-de-Calais) 1997-2007: 16.7% (n=95)).²⁴

- Five studies used registration or enrolment at an HIV clinic as a marker of being linked to care; three studies, attendance to an HIV specialist appointment; two, first HIV consultation; and one, an HIV unit referral. Two studies presented the proportion receiving HIV care (Table 1).
- Van Beckhoven et al provided an estimate without defining linkage to care (Belgium 90.3% (n=3646): surveillance data 2007-2010).⁴
- The majority of measurements relied on HIV surveillance data (n=11), with five studies presenting sub-national data from a variety of settings, such as hospitals in a particular area or city; In four studies, data were collected from a single clinic (Table 1).

Table 1: Definitions of linkage to care presented in the literature: WHO European region, June 2015

Definition	Studies	Country	Data source	Year	% linked (n)
CD4 measurement					
Within 1 month of diagnosis	Rice 2014 ⁶	England, Wales and Northern Ireland	Surveillance	2002-2011	68% (26003)*
	Yin 2014a ²²	England	Surveillance	2006-2012	80% (30260)
	Delpech 2013 ¹⁷	United Kingdom	Surveillance	2011	88% (4477)
	Yin 2014b ²³	England	Surveillance	2012	89% (4290)
Within 3 months of diagnosis	Oliva 2014 ¹⁵	Spain (7 regions)	Surveillance	2010	83.1% (1470)
	Delpech 2013 ¹⁷	United Kingdom	Surveillance	2011	97% (4934)
	Yin 2014b ²³	England	Surveillance	2012	97% (4675)
Within 12 months of diagnosis	Delpech 2013 ¹⁷	United Kingdom	Surveillance	2011	82% (5087)
CD4 or VL measurement					
After HIV diagnosis	Chkhartishvili 2015 ¹¹	Georgia	Surveillance	1989-2012	84% (2135)
Within 3 months of diagnosis	Hall 2013 ¹⁰	Italy, Spain	Surveillance	2009/2010	89.6% (2908), 76% (1154)
First HIV consultation					
Within 4 weeks of diagnosis	van Veen 2015 ²⁵	The Netherlands (Amsterdam, Rotterdam and Arnhem)	Surveillance	2009-2012	31% (96)
Within 6 months of diagnosis	Suzan-Monti 2011 ⁸	France	Cohort study	1997-2003	96.5% (945)
Attendance to a specialist HIV appointment/centre					
After HIV diagnosis	Qvist 2014 ⁵	Denmark (Copenhagen)	Community clinic	2008-2012	97% (36)**
	Pokrovskaya 2014 ¹⁴	Russia	Surveillance	2011-2013	80% (516403)
Within 72 hours of a positive rapid test result	Casalino 2012 ⁹	France (Paris)	Emergency departments	2009-2010	92.5% (44)
HIV unit referral					
After HIV diagnosis	Meulbroek 2013 ¹⁶	Spain (Barcelona)	Community clinic	2007-2012	85%(448)**
Within 4 weeks (≤ 28 days)	Meulbroek 2013 ¹⁶	Spain (Barcelona)	Community clinic	2007-2012	90.5%(381)**
Registration/enrolment at an HIV clinic					
After HIV diagnosis	Kakalou 2014 ¹²	Greece (Athens)	Mobile testing sites	2012-2014	84% (84)
	Kiriazova 2013 ²⁰	Ukraine (Odessa Region)	Regional clinic	1995-2010	††
	Helleberg 2013 ²¹	Denmark	National cohort study	1995-2010	95% (5243)
	WHO 2015 ¹⁹	-	-	-	-
Within 1 month of diagnosis	Ankiersztejn-Bartczak 2015 ¹³	Poland	Community clinics	2010-2011	75% (47)
Receiving HIV care					
Within 1 month of diagnosis	Erwin 2002 ¹⁸	United Kingdom (London)	Clinic survey	1999-2000	75% (264)
Within 6 months of diagnosis	Erwin 2002 ¹⁸	United Kingdom (London)	Clinic survey	1999-2000	85% (300)
	Supervie 2013 ⁷	France	Surveillance	2010	>96%

* Heterosexuals

** Men who have sex with men

†† Mean time to being linked to care after diagnosis: 376.2 days (people infected through sexual transmission); 686.5 days (people infected through IDU)

CONCLUSIONS

- There are many definitions of linkage to care following HIV diagnosis that have been applied in the literature from Europe.
- The majority of studies rely on laboratory data which, despite being relatively reliable, may not always accurately reflect the date when a patient is integrated into HIV specialist care.
- The variety of settings, time periods, populations and definitions utilised, makes it difficult to compare measurements between countries and studies.
- A standard working definition of linkage to care is necessary to ensure consistent monitoring of the quality of HIV care and patient clinical outcomes.

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