A comparison of the continuum of HIV care in 11 European countries using standardised methods

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Background

- The continuum of HIV care has increasingly been used as a framework to evaluate HIV programme performance.
- Elements of the continuum of HIV care may be used to monitor the UNAIDS 90-90-90 targets (90% of people living with HIV (PLHIV) diagnosed, 90% of those diagnosed on antiretroviral therapy (ART), 90% of those on ART virally-suppressed)[1].
- Methods used to derive these proportions are not standardised, hindering comparisons between countries and generation of regional estimates.

Methods

- Collaboration between the European Centre for Disease Prevention and Control (ECDC), several EuroCoord HIV cohorts and European surveillance agencies to construct a standardised four-point continuum of HIV care for 11 European countries for 2013 (Table 1).

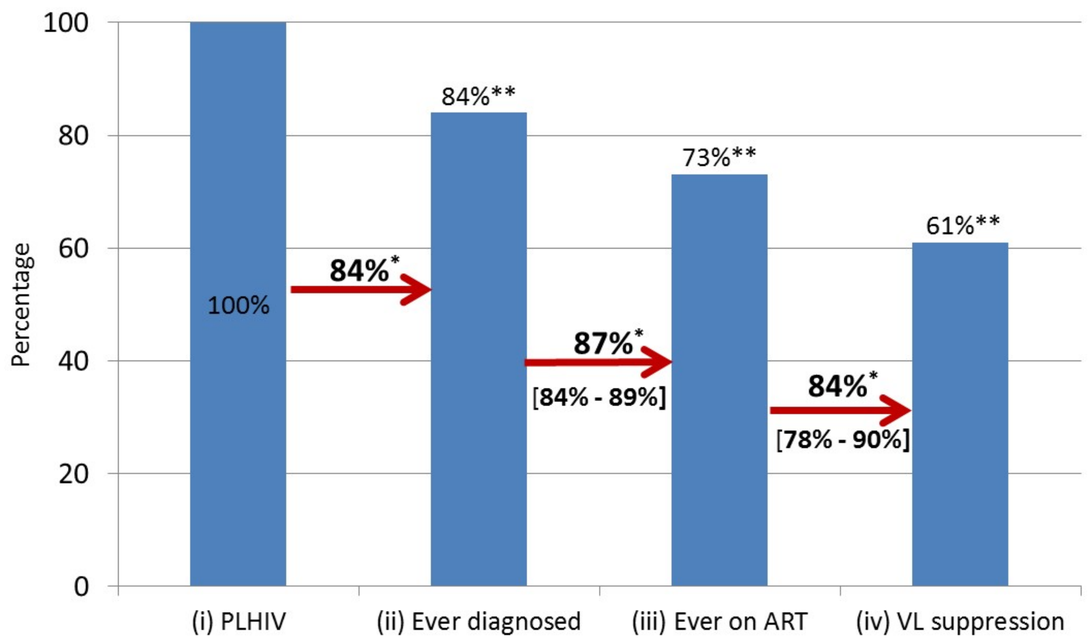
Table 1: Definitions, data sources and approaches used to estimate the continuum of HIV care

Stage	Standardised project definition	Data sources	Approaches
i) Total PLHIV	Number of PLHIV in the country by end of 2013	HIV surveillance data, if available, or cohort data otherwise	Back-calculation models to estimate HIV incidence and the undiagnosed fraction (ECDC HIV Modelling Tool[2], 5 countries; other models, 2 countries), if feasible, otherwise Multi-Parameter Evidence Synthesis (1 country), UNAIDS Spectrum[3] (1 country), or other surveillance-based estimates (1 country).
ii) Diagnosed	Proportion of (i) ever diagnosed	HIV surveillance data, if available, or cohort data otherwise	Cumulative number of diagnosed by end of 2013, excluding out-migrations and deaths before the end of 2013 if feasible.
iii) On ART	Proportion of (ii) who ever initiated ART (regardless of treatment guidelines)	Country-specific HIV cohorts	Descriptive analysis in Stata or SAS. Patients lost to follow-up to the cohort (ART/viral load (VL) status unknown) were excluded to give a high estimate, and included (assumed never on ART, where ART status unknown) in the low estimate. The preferred estimate was taken as the mid-point.
iv) Virally-suppressed	Proportion of (iii) who were virally-suppressed (≤200 copies/mL) at last visit (01/07/2012 to 31/12/2013).	Country-specific HIV cohorts	As above. Patients lost to follow-up to the cohort with no recent VL measurements were assumed to be unsuppressed in the low estimate.

Results

- Complete data are available from 10 countries (partial data for 1).
- 672,257 people were estimated to be living with HIV in 10 countries (prevalence 0.18%); between 5,500 (0.10%) – 150,000 (0.32%) in each country (Table 2).
- The proportions at each stage were on average 84% diagnosed, 87% on ART (low estimate 84%, high estimate 89%), and 84% virally-suppressed (78% - 90%) (Figure 1).

Figure 1: Continuum of HIV care in 11 European countries for 2013 (average across all countries with data available for each stage)



*Percentages out of the previous stage **Percentages out of all PLHIV by end 2013

Table 2: Estimates for each stage of the continuum of HIV care for 2013, by country

Country	PLHIV	% Diag-nosed	% on ART [low, high estimate]	% Suppressed [low, high estimate]
Austria	6,364	88%	89% [84%,94%]	84% [76%,91%]
Belgium	18,233	87%	96% [96%,96%]	82% [77%,87%]
Denmark	5,500	91%	94% [93%,94%]	93% [93%,93%]
France*	148,900	81%	86%**	80%**
Germany	80,000	83%	87% [83%,90%]	81% [69%,92%]
Greece	14,200	78%	82% [79%,84%]	81% [72%,89%]
Italy	127,913	90%	80% [75%,85%]	82% [74%, 90%]
Netherlands	22,000	85%	91% [90%,92%]	91% [88%,94%]
Spain	150,000	71%	76% [73%,78%]	81% [72%,89%]
Sweden+	Pending	Pending	92%**	89%**
UK	99,147	81%	82% [76%,88%]	82% [70%,94%]

*Estimates from 2010 **Low/high estimates not available
+Partial data available, estimates for PLHIV and % diagnosed in progress
Percentages shown are out of the previous stage

- One country achieved ≥90% for all three stages, one more country achieved ≥85% for each stage (Table 2).
- Proportions at each stage varied widely between countries.

Discussion and Conclusions

- In 2013, few countries achieved over 90% for each stage based on our standardised definitions of the continuum.
- Standardising methods for the continuum remains a challenge for all stages. Challenges include:
  - Standardising modelling approaches for different surveillance systems, for example where surveillance began in different time periods.
  - Ability to capture out-migration, or difficulties linking surveillance or cohort datasets to population registries that record death and emigration dates.
  - Coverage and representativeness of cohorts compared to the diagnosed population nationally. Estimates derived using cohort data may need to be adjusted by calculating and applying weights based on the distribution of demographic variables available in cohort and surveillance datasets.
  - Assumptions around patients lost to follow-up from cohorts who may either be in care outside the cohort (likely to be on ART and virally suppressed) or lost from care (and unsuppressed). In the absence of reliable patient transfer data, plausible limits should be calculated.
- These data provide useful comparisons to governments and healthcare planners, and must be interpreted in context of the limitations above as well as cohort or country differences e.g. cohort inclusion criteria and treatment guidelines. Our estimates may also differ from official national estimates[4,5] given differences in data sources and definitions.

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