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Persistent Disparities in Meeting WHO/UNAIDS' Targets for ART Coverage and ART-induced HIV-RNA Suppression across Europe

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BACKGROUND

- Large health disparities exist across Europe among HIV-positive individuals[1]
- However, direct comparisons between countries in core HIV care parameters are often difficult because of differences in data collection and a lack of common definitions[2]

AIMS

- To characterize country- and region-specific levels of proportion on ART among those in care and proportion virologically suppressed among those on ART
- To monitor temporal trends in ART coverage and virological suppression

PATIENTS AND METHODS

- People were included from all EuroSIDA clinics, and countries were grouped into regions as indicated in **[PANEL 1].**
- EuroSIDA participants were included if they had any follow-up between 01/01/2004 - 31/12/2005, 01/01/2009 – 31/12/2010 and/or 01/01/2014 – 31/12/2015. People were assessed at latest of clinic visit, HIV-RNA measurement or CD4 measurement during each time period. If no measurement was available, the midpoint of the period was used.
- On ART among those in care was defined as receiving any ≥3 antiretrovirals and virologically suppressed among those on ART was defined as most recent HIV-RNA measurement within the time period assessed of <500copies/mL
- Missing HIV-RNA measurement in time period assessed was considered unsuppressed (missing = failure)

STATISTICAL ANALYSES

- In cross-sectional analyses in the 3 time periods, we assessed unadjusted estimates of:
  - Proportion on ART among those in care
  - Proportion virologically suppressed among those on ART
- Temporal changes were analysed using generalized estimating equations, accounting for repeated measurements and adjusting for gender, current age, mode of infection, CD4 at first visit, HBV- and HCV status.

RESULTS

- **TABLE 1** gives baseline characteristics of the patients included
- Overall ART coverage within EuroSIDA increased from 68.0% in 2004/05 to 82.4% in 2014/15, and virological suppression among those on ART increased from 74.5% to 86.8% in the same time period. **FIGURE 1**
- However, the pattern differed significantly between participating clinics across countries, with country-specific proportions of ART coverage ranging from 63% to 98%, and virological suppression from 31% to 100% of those on ART in 2014/15 **[FIGURE 1]**
- In 2014-15, 6/35 (17%) countries had >90% ART coverage and >90% were virologically suppressed among those on ART **[FIGURE 1]**
- Of particular note, in 15/35 countries (43%) less than 90% of those on ART were virologically suppressed in 2014/15 **[FIGURE 1]**
- Improvements in ART-coverage (**[FIGURE 2a]**) and virological suppression (**[FIGURE 2b]**) varied significantly across regions over time (p<0.001), and differences could only partly be explained by adjustment.
- Regional differences in the level of virological suppression persisted in 2014/15 **[FIGURE 3a]**
- While differences in the availability of HIV-RNA measurements could explain some of the observed differences, particularly in Northern Europe, the lower odds of virological suppression remained in Eastern Europe, even when excluding those with missing HIV-RNA **[FIGURE 3b]**

DISCUSSION AND CONCLUSIONS

- We found an overall increase in the proportion in care on ART and the proportion virologically suppressed among those on ART over the last decade
- 6/35 countries (17%) met the targets of >90% on ART and >90% virologically suppressed among those on ART in 2014-15, and in 15/35 countries (43%) less than 90% of those on ART had virological suppression
- The overall improvements covered very large differences in country-specific estimates, and both the level and rate of improvement varied between countries and regions
- The study design required that we used the definition "on ART among those in care" rather than "on ART among those diagnosed". However, this allows for direct comparison of clinic performance without the impact of variation in linkage to care
- Guidelines on when to start ART have changed over the study period, and our study should not be seen as an adherence to guidelines study. However, the goal of virological suppression remains unchanged.
- Although EuroSIDA patients are not necessarily representative of HIV care and management in the whole country, we were able to directly compare data from a large number of countries, including some with no national registries.
- EuroSIDA will continue to monitor changes and variation in countries' performance in the post-START study era

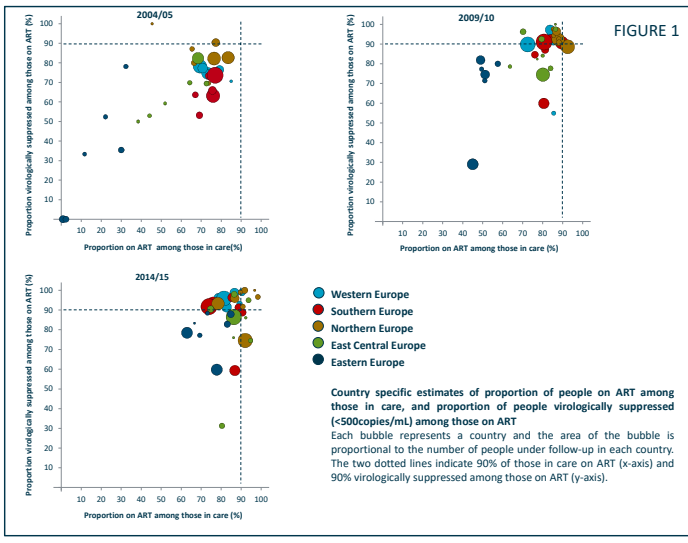
References:
[1] Podlekareva D, Cent Eur J Public Health, 2008. Reekie J, PLoS One 2012.
[2] European Centre for Disease Prevention and Control, Thematic report: HIV continuum of care, 2014. Lourenço L, Lancet HIV 2015. Medland NA, J Int AIDS Soc 2015.

The abstract is presented on behalf of the EuroSIDA study group:
http://www.chip.dk/Studies/EuroSIDA/Study-group

	2004/05	2009/10	2014/15
Number of countries included	31	34	35
Number of clinics included	98	102	105
Total number of patients included	8,978	10,463	11,975
Number on ART (% of total)	6,102 (68.0)	8,180 (78.2)	9,861 (82.4)
Number with HIV-RNA <500copies/mL (% of total on ART)	4,543 (74.5)	7,021 (85.8)	8,564 (86.8)
Number with missing HIV-RNA measurement in the period (% of total on ART)	271 (4)	712 (9)	862 (9)
By region of residence, (% of those on ART in the region)			
Western Europe	52 (3)	100 (5)	51 (2)
Southern Europe	109 (5)	193 (8)	248 (10)
Northern Europe	48 (3)	108 (5)	242 (10)
East Central Europe	37 (6)	146 (13)	189 (12)
Eastern Europe	25 (22)	165 (23)	132 (10)
Gender, n (% of total)			
Male	6,688 (74.5)	7,539 (72.1)	8,649 (72.2)
Female	2,290 (25.5)	2,924 (27.9)	3,326 (27.8)
Current age, median (IQR)	40.8 (35.4, 47.7)	39.2 (32.4, 45.9)	37.8 (30.2, 44.5)
Mode of infection, n (% of total)			
MSM	3,761 (41.9)	4,260 (40.7)	4,571 (38.2)
IDU	2,090 (23.3)	2,138 (20.4)	2,744 (22.9)
Heterosexual	2,556 (28.5)	3,352 (32.0)	3,808 (31.8)
Other/unknown	571 (6.4)	713 (6.8)	852 (7.1)

TABLE 1 Baseline characteristics of patients included in the 3 time periods. Western Europe: Austria, Belgium, France, Germany, Luxembourg, Switzerland. **Southern Europe**: Argentina, Greece, Israel, Italy, Portugal, Spain. **Northern Europe:** Denmark, Finland, Iceland*, Ireland, Netherlands, Norway, Sweden, United Kingdom. **East Central Europe:** Bosnia-Herzegovina*, Croatia*, Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia¤, Slovenia*. **Eastern Europe:** Belarus, Estonia, Georgia*, Latvia, Lithuania, Russia, Ukraine. * included only in 2014/15 cohort, ¤ included only in 2004/05 cohort

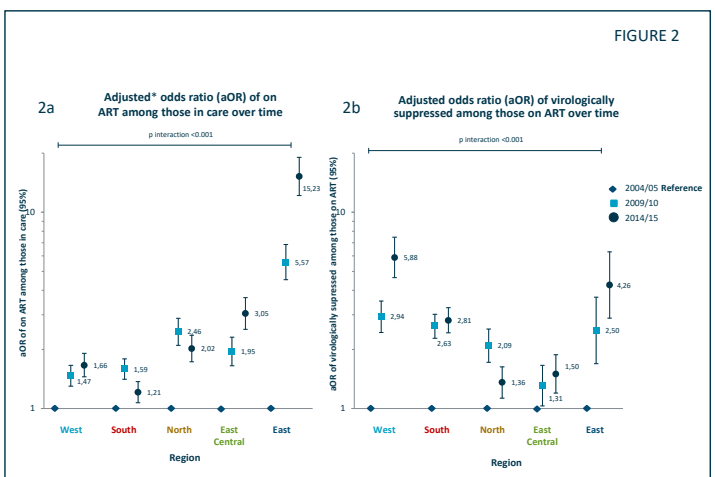
FIGURE 1



Country specific estimates of proportion of people on ART among those in care, and proportion of people virologically suppressed (<500copies/mL) among those on ART
Each bubble represents a country and the area of the bubble is proportional to the number of people under follow-up in each country. The two dotted lines indicate 90% of those in care on ART (x-axis) and 90% virologically suppressed among those on ART (y-axis).

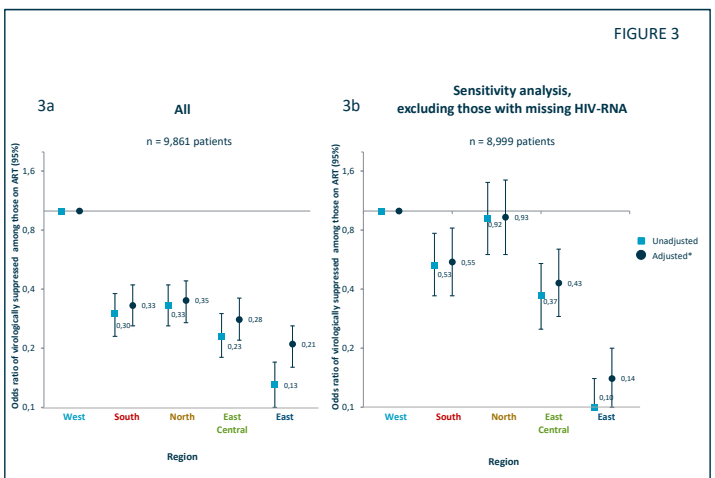
PANEL 1: REGIONS IN EUROSIDA
Western Europe: Austria, Belgium, France, Germany, Luxembourg, Switzerland. **Southern Europe**: Argentina, Greece, Israel, Italy, Portugal, Spain.
Northern Europe: Denmark, Finland, Iceland*, Ireland, Netherlands, Norway, Sweden, United Kingdom.
East Central Europe: Bosnia-Herzegovina*, Croatia*, Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia¤, Slovenia*.
Eastern Europe: Belarus, Estonia, Georgia*, Latvia, Lithuania, Russia, Ukraine.
* included only in 2014/15 cohort, ¤ included only in 2004/05 cohort

FIGURE 2



Adjusted odds ratio (aOR) of on ART among those in care (figure 2a) and aOR of virologically suppressed (<500copies/mL) among those on ART (figure 2b) in 2009/10 and 2014/15 compared with 2004/05 by region. * Adjusted for current age, gender, risk group, CD4 at first visit, current HBV-status, current HCV-status. Test for interaction was for differences between regions over time.

FIGURE 3



Odds ratio of virologically suppressed (<500copies/mL) among those on ART in 2014/15 by region and sensitivity analysis, excluding those with missing HIV-RNA. Western Europe reference. Odds ratios are on a log2 scale. * Adjusted for current age, gender, risk group, CD4 at first visit, current HBV-status, current HCV-status

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