

# TEMPORAL TRENDS AND IMPACT OF COVID-19 ON THE HIV CASCADE OF CARE ACROSS EUROPE BETWEEN 2016-2021

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## BACKGROUND

- Prior to the COVID-19 pandemic, ART uptake and viral suppression levels were increasing over time among people living with HIV (PLHIV)<sup>1, 2</sup>
- The frequency of visits to the HIV clinics was decreasing over time, while lower visit frequency, but not missed clinical visits, was not associated with viral failure and higher mortality in stable PLHIV<sup>3, 4</sup>
- The COVID pandemic did not affect ART coverage and viral suppression according to some studies<sup>5</sup>, while others reported increased rate of missing visits, reduction in ART provision and viral suppression<sup>6</sup>

## OBJECTIVES

- To estimate the proportion of individuals attending clinical sites in person for each of the calendar years from 2016 to 2021 across Europe
- To describe the right-hand part of the HIV cascade of care (CoC) per calendar year from 2016 to 2021 overall and by European region
- To assess the factors associated with having an in-person visit and with being virally suppressed

## METHODS

- PLHIV from the EuroSIDA cohort under prospective follow-up (FU) in a given calendar year (2016-2021) were included in the analysis. EuroSIDA sites that did not submit data for at least one of the years were excluded.
- An **in-person visit** was defined as at least one measurement of weight or blood pressure in a given year.
- The HIV CoC was constructed to compare percentages of PLHIV **on ART** among those under FU, and with **virological suppression** (HIV RNA ≤ 200 copies/mL) among those on ART at each year overall and across five EuroSIDA regions.
- **Factors associated with having an in-person visit or reaching viral suppression** were investigated using logistic regression, with generalised estimating equations to adjust for within-person repeated assessments over time. Factors included in the models were: calendar year, age, gender, ethnicity, EuroSIDA region, HIV transmission risk, CD4, HIV RNA (for in-person visits), ART regimen, prior AIDS, cardiovascular disease, diabetes, malignancies, end-stage liver disease, and chronic kidney disease.

## RESULTS

Among 7383 EuroSIDA study participants under FU in 2016, 71.6% were men, 89.7% of white ethnicity, and 34.2% belonged to the MSM HIV transmission group. The median age was 51 years (IQR: 42-57), and the median dates of last visit were between 6<sup>th</sup> and 24<sup>th</sup> September for each of the study years.

The proportion of in-person visits dropped in 2020 (68.6% compared to 75.4% in 2019), with an increase to 73.6% in 2021. The proportion of deaths did not vary markedly across years (1.1%-1.4%).

## HIV CASCADE OF CARE IN 2016-2021

The uptake of ART was increasing by year in the overall study population, with the most prominent ART coverage increase in Eastern Europe (**Figure 1a**). The percentage of virally suppressed decreased in 2020 (**Figure 1b**), due to an increased proportion of missing RNA data, and increased again in 2021.

Figure 1a. Percentage of people on ART in PLHIV under follow-up

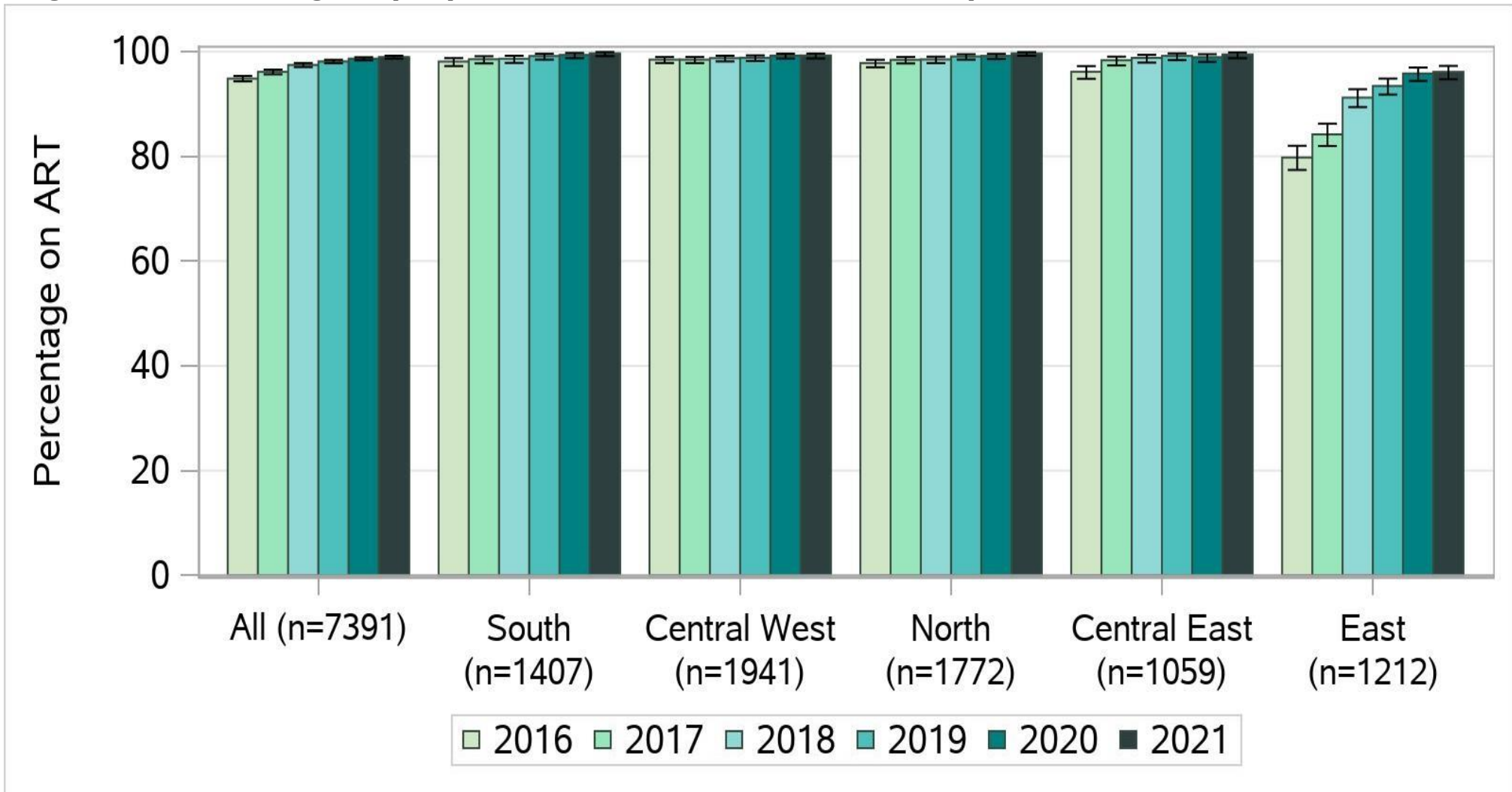
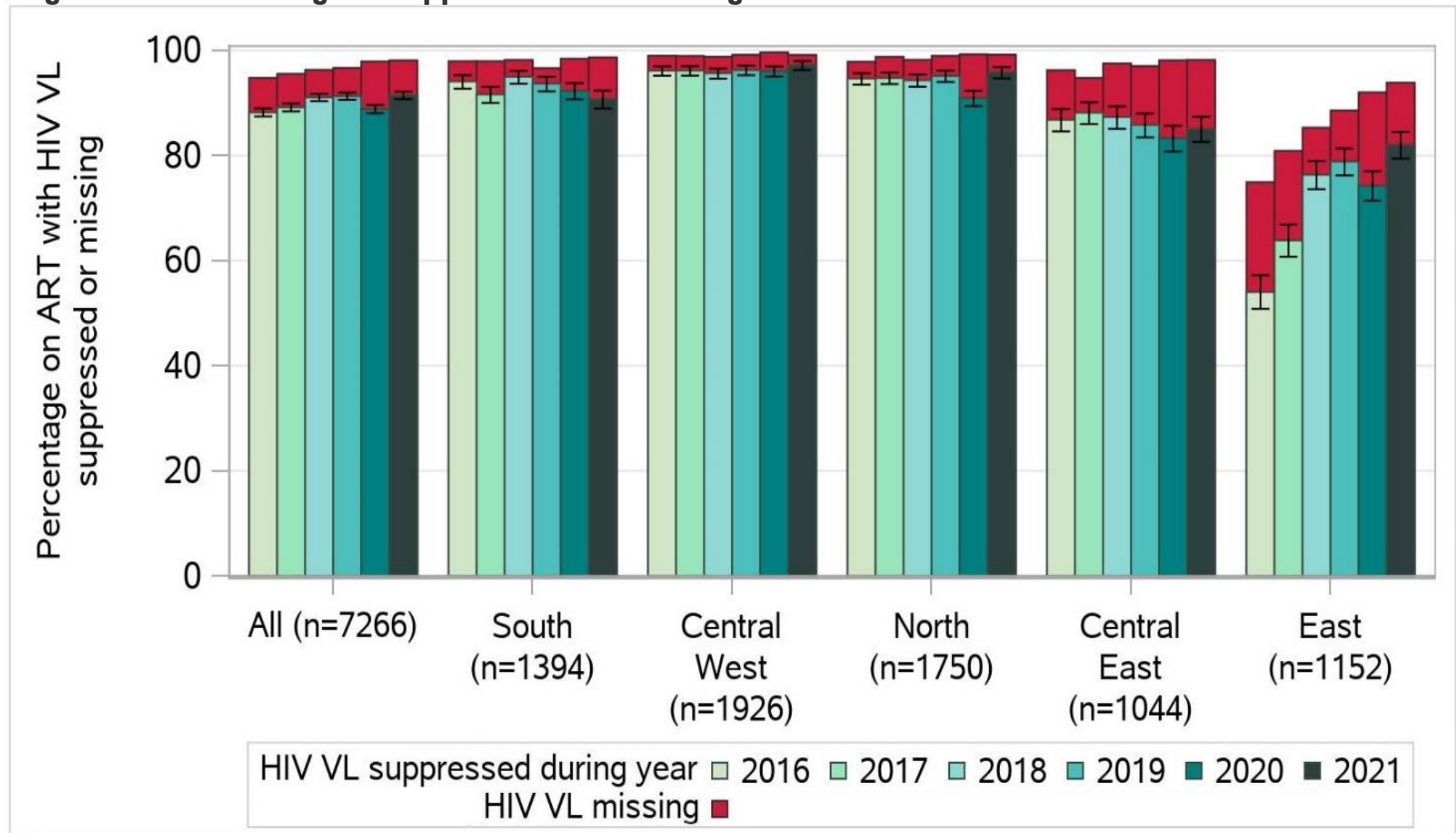


Figure 1b. HIV virological suppression and missing viral load data in PLHIV on ART

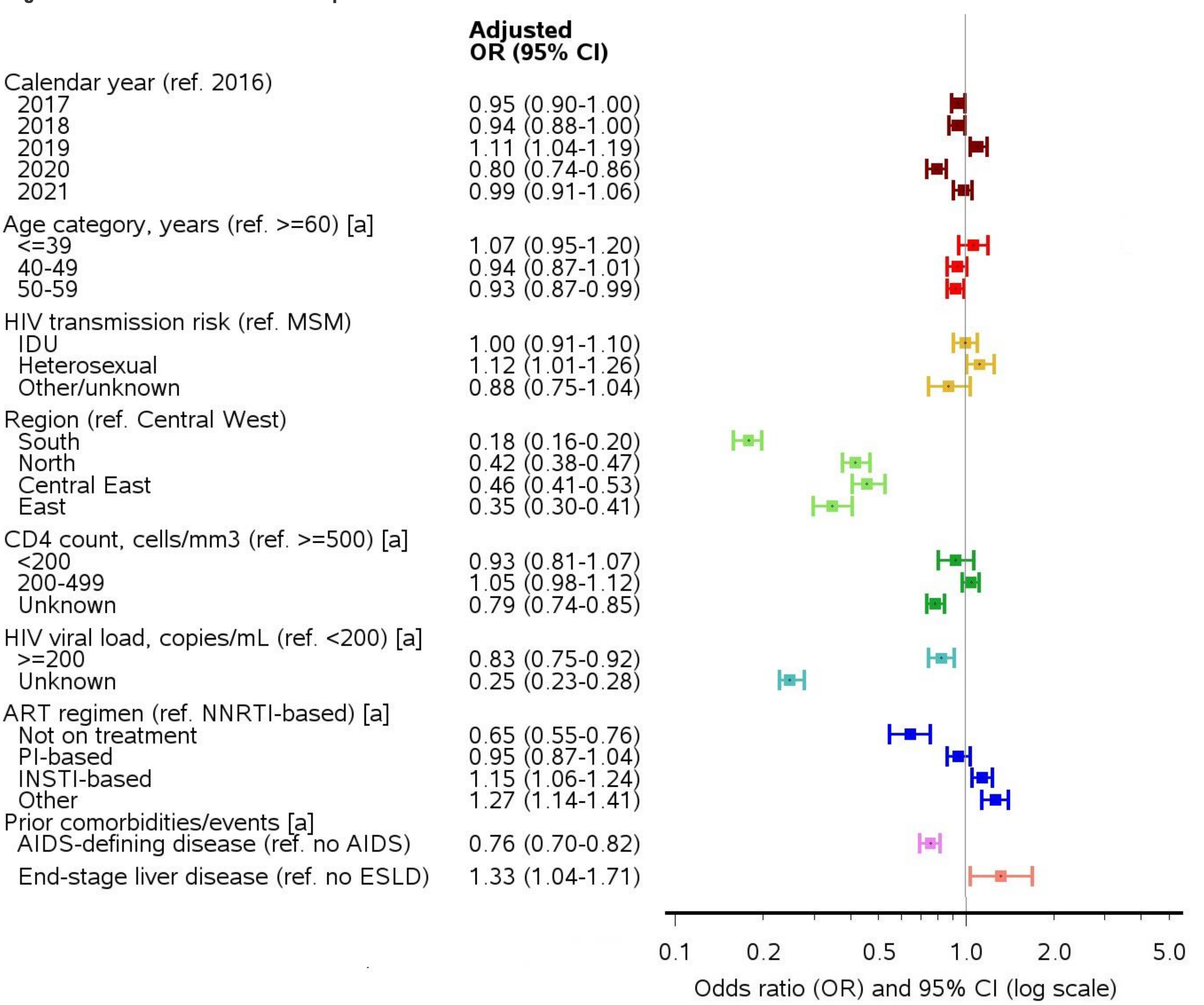


**References:** 1 Wilton J, et al. PLOS ONE, 2019 2 Laut et al, Euro Surveill, 2018 3 Jiamsakul A et al, JAIDS 2021 4 Mutasa-Apollo T et al, J Int AIDS 2017, 5 Guaraldi G et al. Open Forum Inf Dis 2021 6 Spinelli M et al, AIDS 2020

## FACTORS ASSOCIATED WITH IN-PERSON VISIT

Compared to 2016, the odds of attending clinic in person were significantly lower in 2020 (aOR: **0.8**, 95%CI 0.74-0.86, p<0.0001) but not in 2021 (aOR: **0.99**, 95%CI 0.91-1.06, p<0.0001, **Figure 2**). Compared to Central-Western Europe, the odds were significantly lower in the other four regions, most prominent in Southern and Eastern Europe (aOR: **0.18** and **0.35**, p<0.0001).

Figure 2. Factors associated with in-person visit in PLHIV under FU

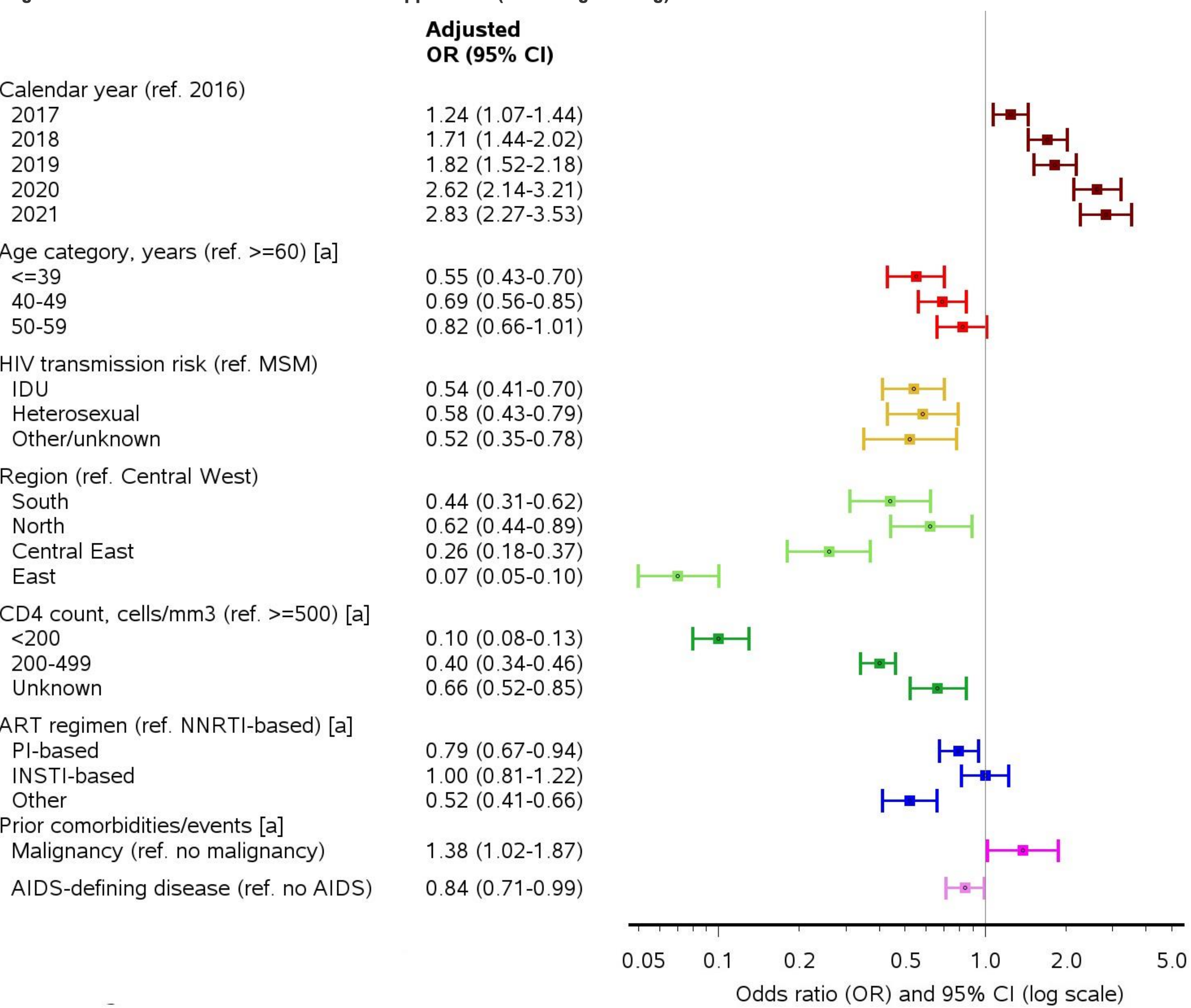


[a] Time-updated factors assessed at the last visit/assessment in each year, or if not available, at the midpoint of the year.

## FACTORS ASSOCIATED WITH HIV VIRAL SUPPRESSION

The likelihood of achieving viral suppression increased over time, also during the COVID pandemic (aOR for 2020 vs 2016: **2.62**, 2021 vs 2016: **2.83**, p<0.0001, **Figure 3**). Lower odds of viral suppression were observed in younger age groups (aOR: **0.55** for age group ≤ 39 years and **0.69** for 40-49 years compared with over 60 years, p<0.0001).

Figure 3. Factors associated with HIV viral suppression (excluding missing) in PLHIV who received ART



[a] Time-updated factors assessed at the last visit/assessment in each year, or if not available, at the midpoint of the year.

## LIMITATIONS

- The definition of in-person visit did not include visits to the clinic when weight and blood pressure were not measured.

## CONCLUSIONS

- Despite a minor drop of in-person visits in 2020, we observed consistent increase in the ART coverage from 2016 to 2021, with ART uptake over 97% in all EuroSIDA regions in 2021.
- A slight decrease in the viral suppression levels in 2020 was attributed to the missing HIV RNA measurements data, while the likelihood of achieving viral suppression in those with known HIV RNA test results was increasing over years.
- In-person visits and viral suppression were strongly associated with regions, highlighting the inter-regional differences in HIV care across all study years.
- In our study, in-person visits were associated with HIV viral suppression.

## ACKNOWLEDGEMENTS

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