

PREVALENCE OF UNDIAGNOSED HIV INFECTIONS BELGIUM, 2020

Description by place of residence, urbanization level
and key subpopulations

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Background

- Presented at IWHOD 2022 (Sevilla, Spain)

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Description of the undiagnosed HIV infection in 2020 in Belgium by key populations and urbanization level
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Conclusion
 Undiagnosed HIV infection remains a substantial public health problem in certain key populations in Belgium in 2020: MSM (especially MSM of non-European nationality), heterosexuals of Sub-Saharan African nationality and PWID. Prevalence of undiagnosed HIV people is higher in cities compared to towns/suburbs and rural areas. This is probably related to larger MSM and migrant communities in large cities and particularly in Brussels. As the COVID-19 pandemic and related social restrictions have strongly impacted HIV testing activities and HIV transmission in 2020, the impact of COVID-19 on the evolution of the (undiagnosed) HIV epidemic will need to be followed carefully in the next years.

| Prevalence (95% CI) | Prevalence (95% CI) |
|---------------------|---------------------|
| 1.5 [1.1 - 2.2] | 16.9 [14.4 - 28.6] |
| 0.7 [0.5 - 0.9] | 76 [57 - 98] |
| 0.3 [0.2 - 0.4] | 290 [226 - 374] |
| 51.3 [41.2 - 85.1] | 434.2 [338 - 560] |
| 81.3 [70.1 - 109.9] | 42 [19 - 102] |
| 340.4 [247 - 453] | 61.6 [27.9 - 149.6] |
| 411 [150 - 356] | |
| 76 [57 - 98] | |
| 290 [226 - 374] | |
| 434.2 [338 - 560] | |
| 42 [19 - 102] | |
| 61.6 [27.9 - 149.6] | |

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- COVID ☹️

Rationale

Diagnosis: 1st pillar of the UNAIDS 95-95-95 goal

Early HIV diagnosis (and subsequent ART initiation and VL control)

- Patient => better health outcomes
- Public health => less transmission

Targeting testing- and awareness campaigns:

- Who?
- Where?

Prevalence of undiagnosed HIV infection

Numerator: number of undiagnosed HIV infections

- CD4-based back-calculation model
- ECDC HIV Modeling Tool v1.3 (100 bootstrap iterations for 95% CI)
ECDC HIV Modelling Tool [software application]. Version 1.3.0 Stockholm: European Centre for Disease Prevention and Control; 2017.
Available from: <https://ecdc.europa.eu/en/publications-data/hiv-modelling-tool>
- Missing data on CD4-count at diagnosis and demographic variables: 10-fold multiple imputation (*mice*, R)

Prevalence of undiagnosed HIV infection

Denominator: total number of people in the 18-64 year old (sub)population

- Sex, place of residence, nationality:
 - Statbel (Belgian population data December 31st 2020)
 - EuroStat (degree of urbanization)
- Proportion MSM among males: 4.18%
 - Irrespective of place of residence and nationality
 - Marcus U. et al. (EMIS Network, 2013). Estimating the size of the MSM populations for 38 European countries by calculating the survey-surveillance discrepancies (SSD) between self-reported new HIV diagnoses from the European MSM internet survey (EMIS) and surveillance-reported HIV diagnoses among MSM in 2009. *BMC Public Health*, doi:10.1186/1471-2458-13-919.
- Persons who inject drugs:
 - Plettinckx E. et al. (2021). Estimates of people who injected drugs within the last 12 months in Belgium based on a capture-recapture and multiplier method. *Drug Alcohol Depend*, doi:10.1016/j.drugalcdep.2020.108436

Results (total population)

Belgium, 2020

1518 HIV-undiagnosed people (95% CI [1113 – 2184])

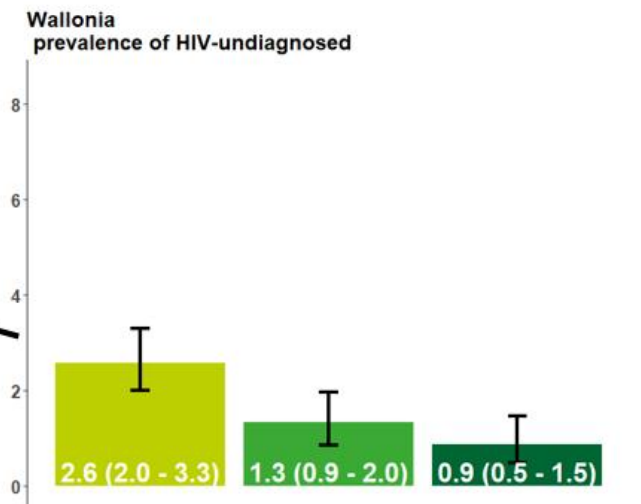
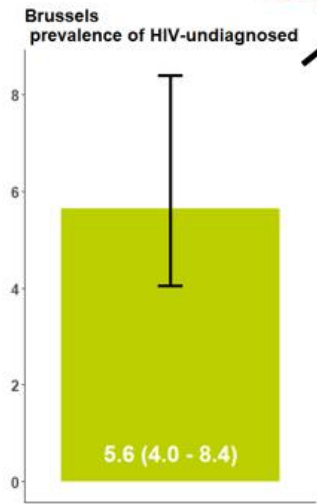
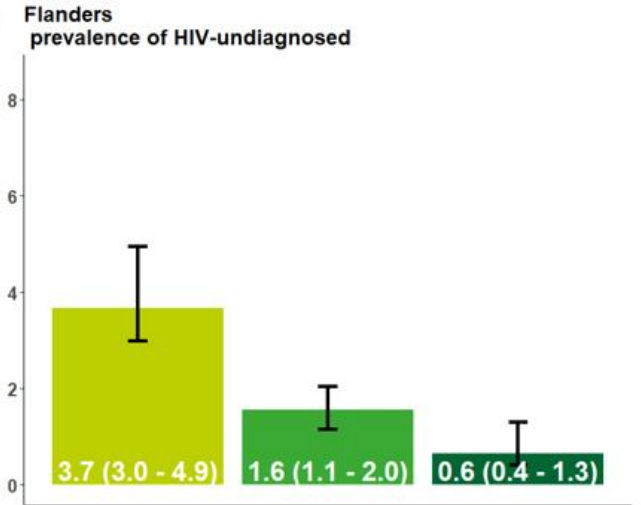
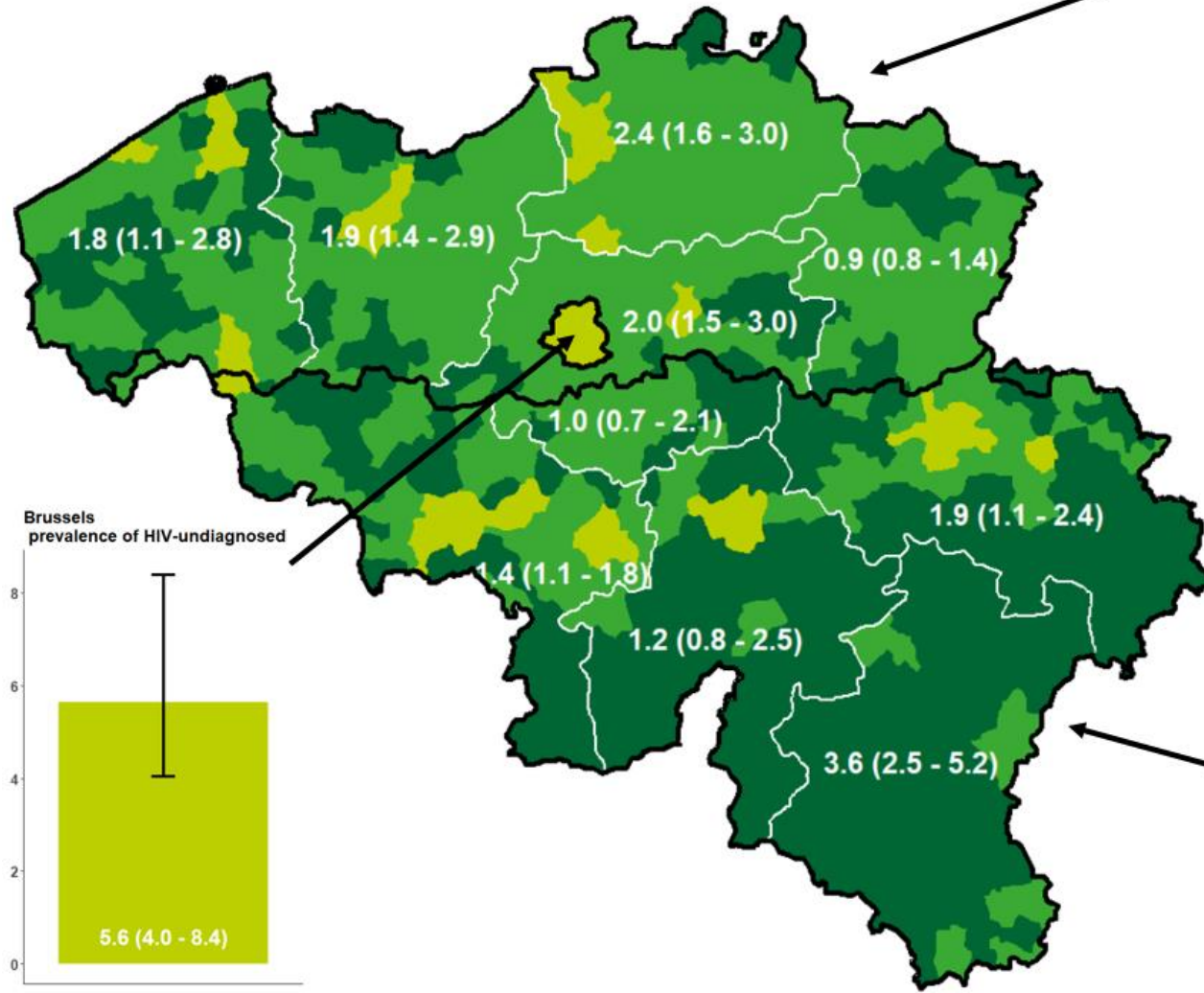
= 2.2 HIV-undiagnosed people per 10.000 18-64 year old inhabitants (95% CI [1.6 – 3.1])

Decreasing trend in the prevalence of undiagnosed HIV infections since 2010



Results (place of residence)

degree of urbanization (Eurostat) ■ cities ■ suburbs ■ rural area



Results (key subpopulations)

| | Nr. undiagnosed [95% CI] | Prevalence per 10.000 [95% CI] |
|---------------------------------------|-----------------------------|-----------------------------------|
| Heterosexuals | 1005 [746 – 1529] | 1.5 [1.1 – 2.2] |
| Belgian heterosexual men | 196 [153 – 248] | 0.7 [0.5 – 0.9] |
| Belgian heterosexual women | 75 [45 – 121] | 0.3 [0.2 – 0.4] |
| Subsaharan African heterosexual men | 167 [134 – 277] | 51.3 [41.2 – 85.1] |
| Subsaharan African heterosexual women | 290 [250 – 392] | 81.3 [70.1 – 109.9] |
| MSM | 497 [361 – 658] | 340.4 [247 – 450] |
| Belgian MSM | 211 [180 – 356] | 16.9 [14.4 – 28.6] |
| European MSM | 76 [57 – 98] | 49.9 [37.4 – 64.4] |
| Other MSM | 290 [226 – 374] | 434.2 [338 – 560] |
| PWID | 42 [19 – 102] | 61.6 [27.9 – 149.6] |

Limitations

- Migration not accounted for in modeling:
 - Non-Belgians may spend a considerable time in their undiagnosed state abroad
- 2020: impact from COVID
 - back-calculation model not designed to handle sudden changes in behavior and testing
 - but: decreasing trend in number of undiagnosed continued in 2021

Conclusions

- Urbanization level
 - Flanders & Wallonia: cities > suburbs > rural areas
 - Cities: Brussels > Flanders > Wallonia
 - larger migrant & MSM communities
- Key subpopulations with high prevalence
 - SSA heterosexuals
 - MSM (especially non-Belgian)
 - PWID



Thank you for your attention!