

## Background

- An estimated total of 25.000 individuals are living with HIV in the Netherlands, 27 % of whom are undiagnosed. In 2012, 43% of the newly diagnosed presented too late in care.
- General practitioners (GPs) play a central role as primary point of access to secondary healthcare and could play an important role in pro-active HIV testing for early case-finding.
- HIV testing strategies targeting populations at higher risk for HIV have been insufficient in reducing the number of undiagnosed in the Netherlands.
- Recently, two additional HIV testing strategies were introduced to promote an increase in HIV testing in health care settings.
  - European (ECDC) guidelines recommend offering an HIV test to individuals with HIV indicator conditions.
  - UK (NICE) guidelines recommend performing routine testing in primary care settings where HIV prevalence exceeds 0.2% among 15- to 59-year-olds.

## Objectives

- To determine the prevalence of HIV in six general practices in the southeast district of Amsterdam, a multicultural low SES area.
- To identify the incidence of HIV indicator conditions in the five years prior to HIV diagnosis, using data from a general practice database.

## Methods

- General practice database contains patient records from six general practices.
- A matched case-control (1:3) study was conducted. Data from 102 cases (HIV positive patients) and 299 controls (not known to have HIV) were included ( $n=401$ ).
- Controls were matched for age, sex, practice, year the HIV cases received their diagnosis and years of information in the medical file available prior to HIV diagnosis.
- Exact univariate logistic regression was used, to identify HIV indicator conditions associated with the occurrence of HIV.

## Results

- The average HIV prevalence in six general practices increased (0.4% to 0.9%) among 15- to 59-year-olds in the period 2002-2012 (Figure 1). The southeast district of Amsterdam qualifies as a high prevalence area where routine HIV testing is indicated, according to the UK guidelines.
- In the year prior to HIV diagnosis 81.3% had seen their GP, in contrast to 42.8% for controls.
- More than half (58.5%) of cases presented with one or more of the HIV indicator conditions in the five years prior to HIV diagnosis, compared to 7.4% for controls (Table 1).

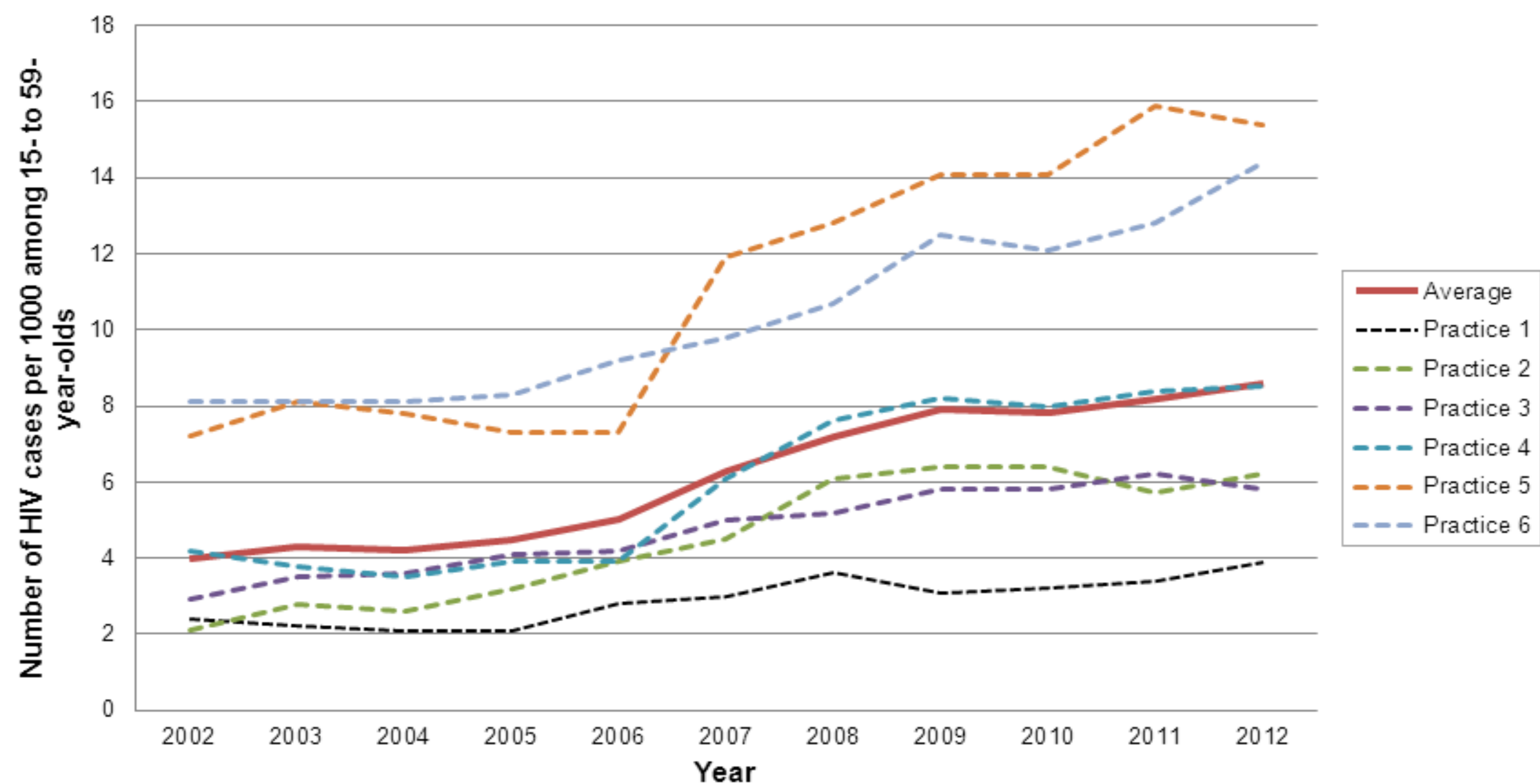


Figure 1. Trends in prevalence of HIV in six general practices in the district of southeast of Amsterdam, a multicultural low SES area, Netherlands, 2002-2012.

|                             | Cases |      | Controls |     | Odds ratio | 95% CI |        |
|-----------------------------|-------|------|----------|-----|------------|--------|--------|
|                             | n     | %    | n        | %   |            |        |        |
| <b>Total N</b>              | 102   |      | 299      |     |            |        |        |
| <b>Indicator Conditions</b> |       |      |          |     |            |        |        |
| Weight loss                 | 9     | 8.8  | 0        | 0   | 39.6       | 6.2    | INF    |
| Syphilis                    | 12    | 11.7 | 1        | 0.3 | 39.3       | 5.7    | 1703.9 |
| Lymphadenopathy             | 7     | 6.9  | 0        | 0   | 29.8       | 4.4    | INF    |
| Gonorrhoea                  | 4     | 3.9  | 0        | 0   | 15.9       | 2.0    | INF    |
| Peripheral neuropathy       | 4     | 3.9  | 0        | 0   | 15.9       | 2.0    | INF    |
| Condyloma acuminata         | 4     | 3.9  | 1        | 0.3 | 12.1       | 1.2    | 600.9  |
| Chlamydia                   | 11    | 10.8 | 3        | 1.0 | 11.8       | 3.0    | 67.5   |
| Hepatitis B                 | 3     | 2.9  | 0        | 0   | 11.5       | 1.2    | INF    |
| Leukocytopenia              | 3     | 2.9  | 0        | 0   | 11.5       | 1.2    | INF    |
| Herpes zoster               | 7     | 6.9  | 2        | 0.7 | 10.9       | 2.0    | 108.9  |
| Pneumonia                   | 8     | 7.8  | 3        | 1.0 | 8.3        | 2.0    | 49.8   |
| Mononucleosis-like illness  | 8     | 7.8  | 4        | 1.3 | 6.2        | 1.6    | 29.0   |
| Fever                       | 3     | 2.9  | 2        | 0.7 | 4.5        | 0.5    | 54.3   |
| Diarrhoea                   | 2     | 2.0  | 3        | 1.0 | 2.0        | 0.2    | 17.4   |
| Seborrhoeic dermatitis      | 1     | 1.0  | 3        | 1.0 | 1.0        | 0.0    | 12.3   |

Table 1. Number of HIV indicator conditions: Odds Ratio; 95% CI of HIV cases and matched controls; INF = infinity, caused by the empty cells in the control group.

## Conclusions

- The incidence of HIV indicator conditions is substantially higher among HIV cases compared to controls in the five years prior to diagnosis. More than half (58.5%) of HIV cases had an HIV indicator condition in the five years prior to diagnosis.
- The southeast district of Amsterdam qualifies as a high prevalence area where routine testing is indicated, according to the UK guidelines.
- Further research is needed to explore whether these findings may yield alternative strategies for GPs to detect HIV as early as possible.