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A high rate of HIV-1 acquisition post immigration among migrants in Sweden determined by a CD4 T-cell decline trajectory model

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Statement of the Problem: There is a lack of knowledge about the extent to which migrants become HIV-1 infected after arrival in European countries. The objective of this study was to assess the extent to which migrants to Sweden become HIV-1 infected post immigration using a CD4 T-cell decline trajectory model. Methodology: All migrants (n = 2268) who were ≥ 15 years old, were diagnosed with HIV-1 infection in the period 1983-2013, had a known year of arrival in Sweden, did not have primary HIV infection and were not infected via mother-to-child transmission were included in the study. The CD4 T-cell decline trajectory model was applied and estimates of HIV acquisition were compared to the clinical reports. Phylogenetic analysis was performed in a subset of patients to explore whether this would favor the model or the doctor's estimate. Findings: The model estimated 19% of individuals to have been infected after arrival in Sweden, whereas the physician's

estimate was 12%. In 79% of cases, the estimates agreed. Discordance was predominantly seen when the doctor estimated HIV acquisition to have occurred before arrival in Sweden, while the model estimated it to have occurred after arrival in Sweden, and this type of discordance was seen in 10% of all patients. The probability of discordance was greater for older patients, those with a high first CD4 T-cell count and those infected via heterosexual transmission. The phylogenetic analysis showed a higher concordance with the CD4 model than with the clinical reports (36 vs. 13%, respectively). Conclusion & Significance: The model indicated that a substantially higher proportion of migrants are infected after arrival in Sweden than estimated using clinical routine reports. It is therefore important to further emphasize primary preventive measures among migrants who have established themselves in their new country.

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