

## INTRODUCTION

### Background

- People living with HIV who enter care at a late stage of infection are at greater risk of ill-health and death.
- The proportion of people diagnosed with HIV in the UK who were previously diagnosed abroad has risen in the last 5 years, from 19% in 2015, to 24% in 2020.
- People previously diagnosed abroad presenting late in the UK are either late on UK arrival, or have reached a late stage of infection in the time that has passed from UK arrival to UK presentation.

### Aims

- To identify and characterise those presenting late following previous HIV diagnosis abroad.
- Compare those diagnosed late in the UK to those presenting late in the UK following previous diagnosis abroad.

## METHODS

- Data were taken from the HIV and AIDS Reporting System.
- Individuals in England with a CD4 count <350 cells within 91 days of an HIV diagnosis (and no evidence of recent infection) were categorised as diagnosed late if first diagnosed in the UK, or presenting at a late stage of infection if previously diagnosed abroad.
- We used descriptive analyses, and calculated rates of late diagnosis and mortality within these groups in order to make comparisons between them.

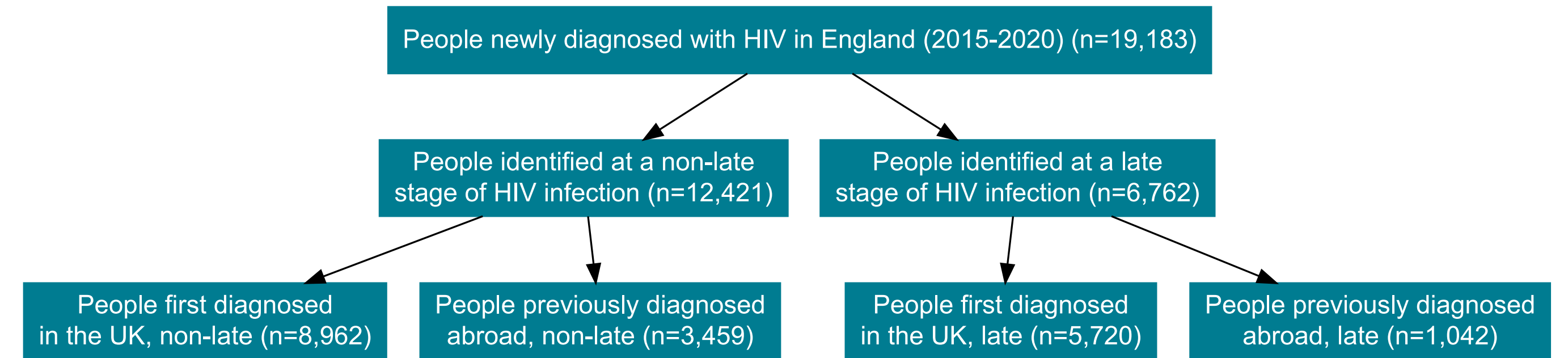


Figure 1. Summary of how diagnoses were classified

## RESULTS

### Quantifying identification at a late stage of infection between those first diagnosed in the UK, and first diagnosed abroad

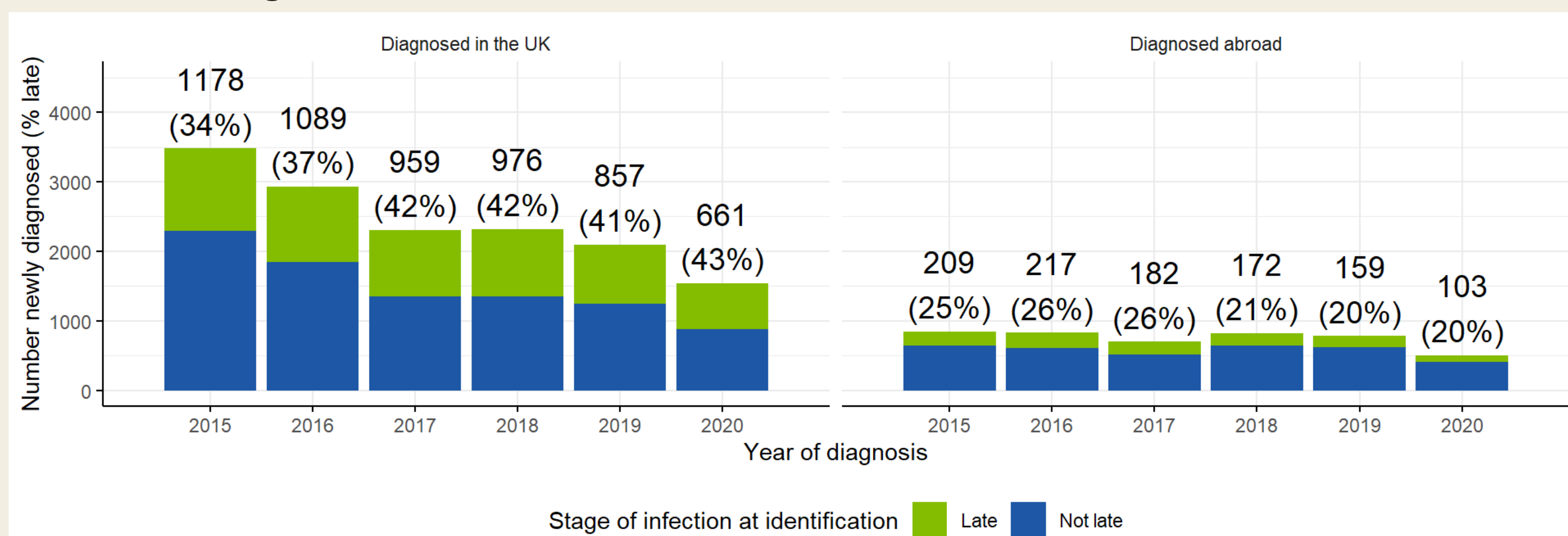


Figure 2. Number newly diagnosed by location of first diagnosis and timeliness

- From 2015-2020, 39% of those first diagnosed in the UK, and 23% of those previously diagnosed abroad were identified at a late stage of infection, so late presentation occurred at 59% of the rate of late diagnosis.
- Late presentation constituted 15% of all those identified at a late stage of infection.
- Whilst the proportion of those diagnosed late has increased in this time, the proportion presenting late has decreased.

### How long after arrival in the UK are those previously diagnosed abroad identified?

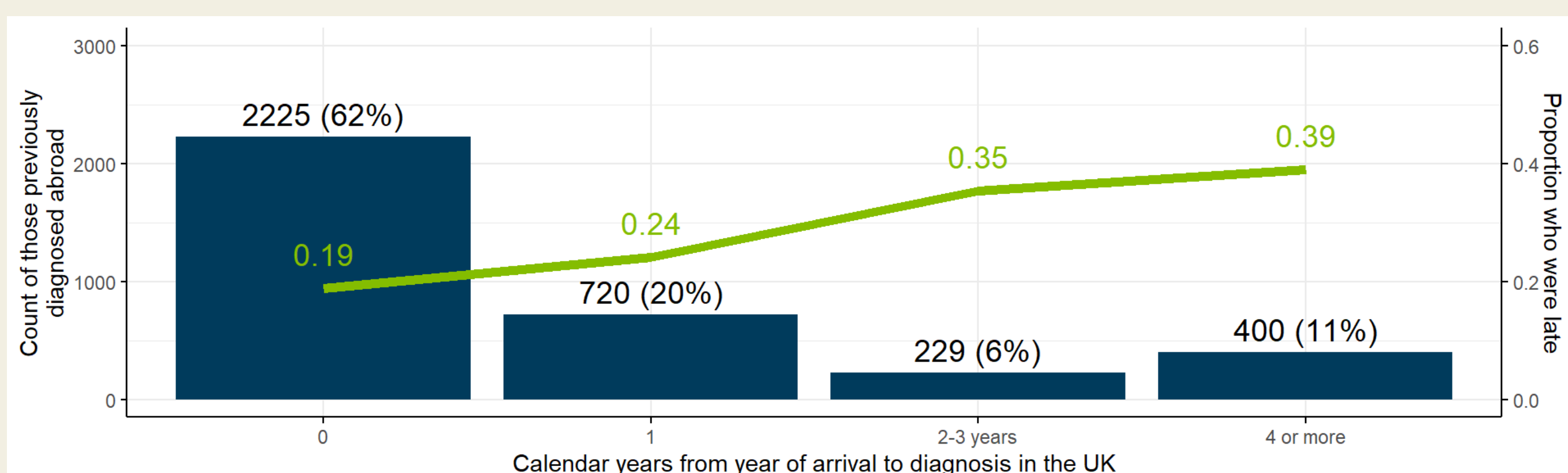


Figure 3. Time from arrival to diagnosis in the UK (calendar years)

- From 2015-2020, 62% of those previously diagnosed abroad were identified within their year of arrival in the UK. The proportion who presented late in this group was 0.19.
- The proportion presenting late increased for each year between arrival, and UK diagnosis, reaching 0.39 at 4 or more years after arrival in the UK.
- In total, 419 late presentations were identified within year of arrival, and 411 after this point.

### What proportion of those previously diagnosed abroad are already on treatment?

Virally suppressed at diagnosis	Total of those diagnosed abroad	Percentage of those diagnosed abroad	Count late	Percentage late
No	1900	43%	675	36%
Yes	2515	57%	349	14%

- 57% of those previously diagnosed abroad between 2015-2020 were virally suppressed at diagnosis (VL<200 within 1 month of diagnosis)
- Those virally suppressed at diagnosis presented late less frequently than those who did not (14% late vs 36% late).

### Who presents late and how are late presentations different to late diagnoses?

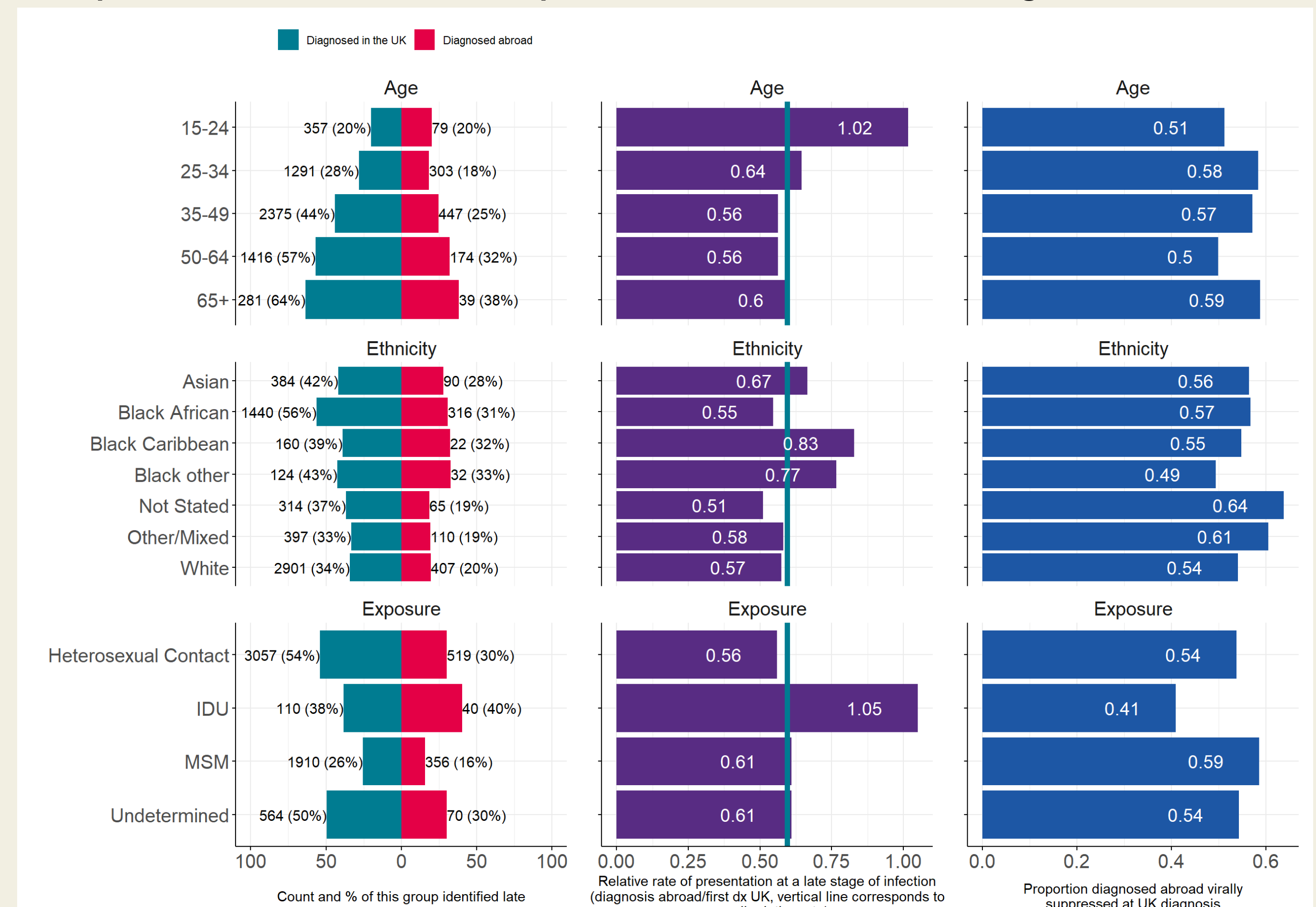


Figure 4. Rate of identification at a late stage of infection (left), rates amongst those previously diagnosed abroad relative to those first in the UK (centre), proportion virally suppressed amongst those previously diagnosed abroad (right)

- For 2015-2020, rates of identification at a late stage of infection were almost all higher for those first diagnosed in the UK, compared to those previously diagnosed abroad, though showed similar patterns.
- Exceptions to this were rates in people who were younger (15-24), exposed by injection drug use and of Black Caribbean and Black other ethnicity.
- These associations were confirmed using a generalised linear model with interactions between location of diagnosis and each of the variables (exposure, age, ethnicity).
- Rates of viral suppression at diagnosis were lower in some of these groups, especially those exposed by injection drug use, those of Black other ethnicity, and those aged 15-24 to a lesser extent.

### What outcomes do those who present late have?

Stage of infection	Diagnosis location	Diagnoses (2015-2019)	Deaths in 1 year of diagnosis	Rate of 1 year mortality (per 1,000)
Late	Diagnosed in the UK	4673	175	37.45
Late	Diagnosed abroad	619	22	35.54
Not late	Diagnosed in the UK	6806	62	9.11
Not late	Diagnosed abroad	1106	4	3.62

- Excluding those virally suppressed at diagnosis, those presenting late between 2015-2019 displayed a similar mortality rate to those first diagnosed in the UK.

## DISCUSSION

- Late presentation represents a significant portion (15%) of all those identified at a late stage of infection.
- About half of late presentations were identified a year or more after arrival, suggesting opportunities to act. Particularly as rates of late presentation increase with each year until identification.
- 57% of those previously diagnosed abroad with a viral load within 1 month of diagnosis were virally suppressed. This suggests high levels of effective treatment amongst those previously diagnosed abroad.
- The similar mortality rates for late presentation and late diagnosis likely reflect that after the removal of those virally suppressed, these are largely comparable populations.
- Patterns of late presentation and late diagnosis were overall similar. However, late presentation was comparatively more common amongst those exposed by injection drug use and diagnosed between the ages of 15-24.
- This may partially reflect lower levels of viral suppression at diagnosis within these groups, especially those exposed by IDU. The higher rates amongst those aged 15-24 may reflect higher rates of HIV acquisition in younger age groups.

## CONCLUSIONS

- With about ¼ of all new diagnoses being amongst those previously diagnosed abroad, and roughly ¼ of these being late presentations, presenting late represents an important subset of all those identified at a late stage of infection in the UK.
- Most presentations likely reflect disease progression before arrival in the UK, and most people previously diagnosed abroad are virally suppressed when identified in the UK.
- Late presentation results in comparable rates of mortality to late diagnosis, once high levels of viral suppression amongst those previously diagnosed abroad are accounted for.
- The patterns of late diagnosis and late presentation across ages, ethnicities and probable routes of exposure are broadly similar.
- However, amongst late presentations, several groups are overrepresented, especially those exposed by injection drug use, and diagnosed aged 15-24. This partially corresponds to levels of viral suppression within these groups at diagnosis.

## ACKNOWLEDGEMENTS

We gratefully acknowledge people living with HIV, clinicians, microbiologists, immunologists, public health practitioners, occupational health doctors and nurses and other colleagues who contribute to the public health monitoring of HIV and STIs in England.

Thank you to colleagues at UK Health Security Agency.