

HIV Late Diagnosis Review

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Background

Data from UKHSA (UK Health Security Agency) shows a potential rise in the proportion of late diagnosis of HIV in recent years while the numbers of new diagnoses are reasonably consistent (Table 1).

CD4 at diagnosis	2017	2018	2019	2020	2021
Number of new diagnoses	21	17	18	23	19
Number with a CD4 count	11	6	17	18	18
Number with CD4 <350	4	2	5	9	11
% of CD4 <350	36%	33%	29%	50%	61%

Table 1: New HIV diagnosis and indication of late diagnosis among those with a CD4 count (Bromley residents)

Source: Bromley local authority HIV surveillance data tables

Late diagnosis of HIV is defined as follows:

Late HIV diagnosis: CD4 count < 350 cells per mm³ of blood within 91 days of diagnosis

Very Late HIV diagnosis: CD4 count <200 cells/mm³

There have been recent increases in percentages of late HIV diagnosis regionally and nationally although percentages of late diagnoses in Bromley have increased more substantially (Figure 1). There have been increases in the latest 3 years of UKHSA data in the proportion of HIV diagnoses with recorded CD4 counts enabling identification of late diagnosis. A full picture of whether a diagnosis was late or not in some years is not available and should be noted.



Figure 1: Percentage of late HIV diagnosis among new diagnoses with a recorded CD4 count

Source: Bromley local authority HIV surveillance data tables; [HIV: annual data tables - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/data-and-data-tables/hiv-annual-data-tables)

Late diagnosis generally means patients are presenting with AIDS defining conditions. The aims of this review were to investigate cases of late diagnosis to see if opportunities for more timely diagnoses were being missed and what those opportunities might be.

Methodology

The review covered the 4 years 2018 to 2021 and returned data for residents of Bromley newly diagnosed with HIV at either Kings or Beckenham Beacon, those diagnosed late and those not diagnosed late.

Review data collected details of the 2 groups of people diagnosed with HIV over the 4 year period as indicated in Table 2.

1	Clinician
2	Postcode
3	Age
4	Sex
5	Ethnicity
6	Risk Factor
7	Where Tested
8	Month/Year Diagnosis
9	HIV VL at Diagnosis
10	Baseline CD4
11	Late Diagnosis (Yes/No CD4<350)
12	Very Late Diagnosis (Yes/No CD4 <200)
13	Missed Opportunity – e.g. Check previous admissions/GP visits (HIV indicator diseases and not tested)
14	GP
15	Case Study Details/Factors
16	Ever tested before if so when?
17	Ever taken PrEP?

Table 2: Review details collected

Where available, data from UKHSA categorising all new HIV diagnoses in Bromley (Bromley local authority HIV surveillance data tables) has been compared with national and regional data ([HIV: annual data tables - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/hiv-annual-data-tables)) to see if any differences might be apparent between the populations, demographic or otherwise. A comparison of the Bromley review data with regional and national data has not been undertaken as the review data does not include all Bromley cases given in the UKHSA tables so there will be differences in the demographic profile.

For those data fields in the collected review data that could be broken down to categorical variables (age, sex, ethnicity, risk factors, missed opportunity, ever tested before and ever taken PrEP), percentages were calculated for counts of responses to each variable for each group of people, either those who were not diagnosed late or those that were. This allowed a comparison between the 2 groups to determine any statistical differences between the populations.

It is important to note that small numbers have impacted on the ability to draw statistical conclusions from the data.

Results

5 clinicians at either Kings or Beckenham Beacon were involved in collecting data for the review. The new HIV diagnoses were among residents in 14 wards in Bromley. 28 of those newly diagnosed were registered with 19 GP practices, not all of them in Bromley. One practice had 2 patients with a late diagnosis, the rest had only 1 patient with a late diagnosis. Of the 4 with a new HIV diagnosis who were either not registered with a practice or the GP practice was not disclosed, only 1 had a late diagnosis.

Percentages of late diagnosis by year among this cohort (Table 3) do not show the same increase in percentage of late diagnosis year on year as the UKHSA data shows (Table 1). However, the data does not include all new diagnosis among Bromley residents as represented by the UKHSA data because the audit is only considering Kings data. In total however, 32 residents were newly diagnosed with HIV over the audit period of whom 19 (59%) had a late diagnosis.

Count of Late Diagnosis (Yes/No CD4<350)	2018	2019	2020	2021	Total
Number of new diagnoses	5	8	7	12	32
Not late diagnosis	2	2	3	6	13
Late diagnosis (CD4<350)	3	6	4	6	19
Percentage CD4 <350	60%	75%	57%	50%	59%

Table 3: Count of late diagnosis

Source: review data

Of the 19 with late diagnosis, 11 had a very late diagnosis where the CD4 count was less than 200.

Where tested

Most indications of HIV infection among those newly diagnosed were initially at the Princess Royal University Hospital in varying clinics or as an inpatient (Figure 2). Many of the Late and Very Late diagnosis for HIV were made as 'In-Patients' when admitted to the Princess Royal University Hospital. Admissions were for a range of medical conditions known to be associated with HIV. Other settings where late diagnoses were made include General Practice, hospital A&E visits (before the ED initiative was introduced at the PRUH in April 2022), sexual health clinics and Ophthalmology.

The testing location of Denmark Hill indicates incidental findings during attendance at the Emergency Department or attendance at Camberwell Sexual Health Services. Beckenham Beacon is the location of a sexual health clinic. SHL is the online testing service.

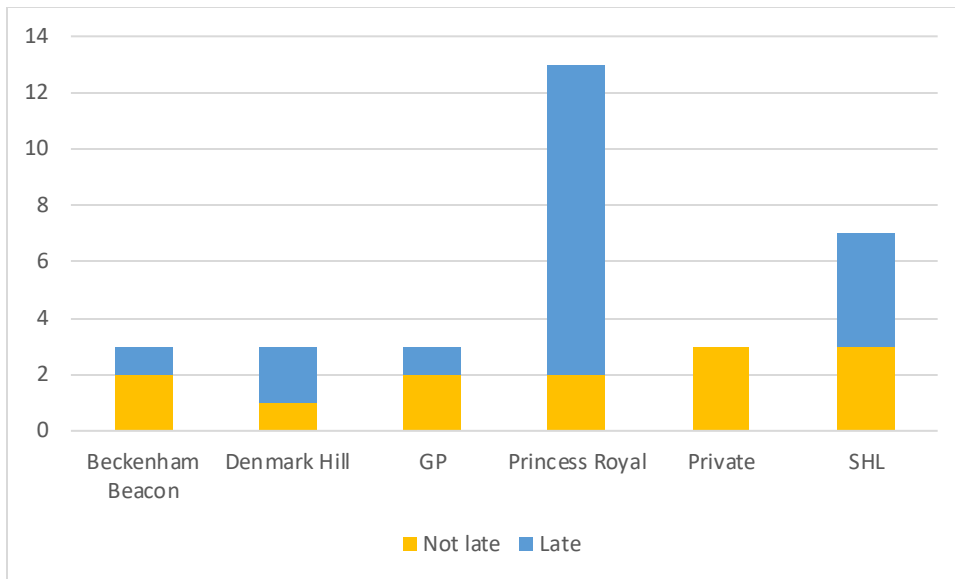


Figure 2: Location of first test before confirmation of diagnosis at either Kings or Beckenham Beacon among those newly diagnosed whether not diagnosed late or diagnosed late (2018-2021)

Source: review data

Gender

The distribution of all new HIV diagnoses between the sexes shows they are mostly among men although the difference is less stark in Bromley than regionally or nationally (Figure 3).

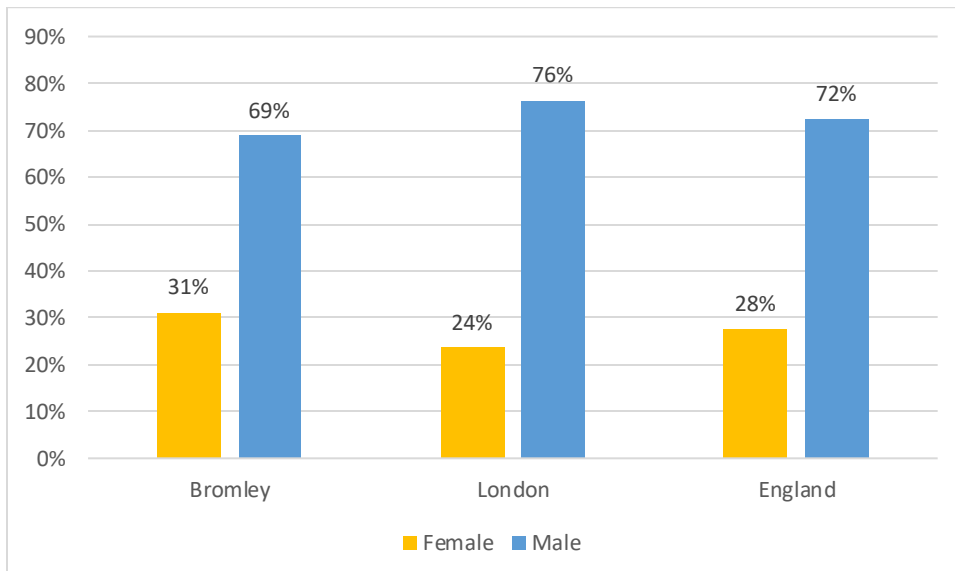


Figure 3: Gender distribution of new HIV diagnoses (2018-2021)

Source: Bromley local authority HIV surveillance data tables; [HIV: annual data tables - GOV.UK \(www.gov.uk\)](#)

In the review data most diagnoses were of men, whether the diagnosis was late or not. Gender distribution is similar in the 2 groups (Figure 4).

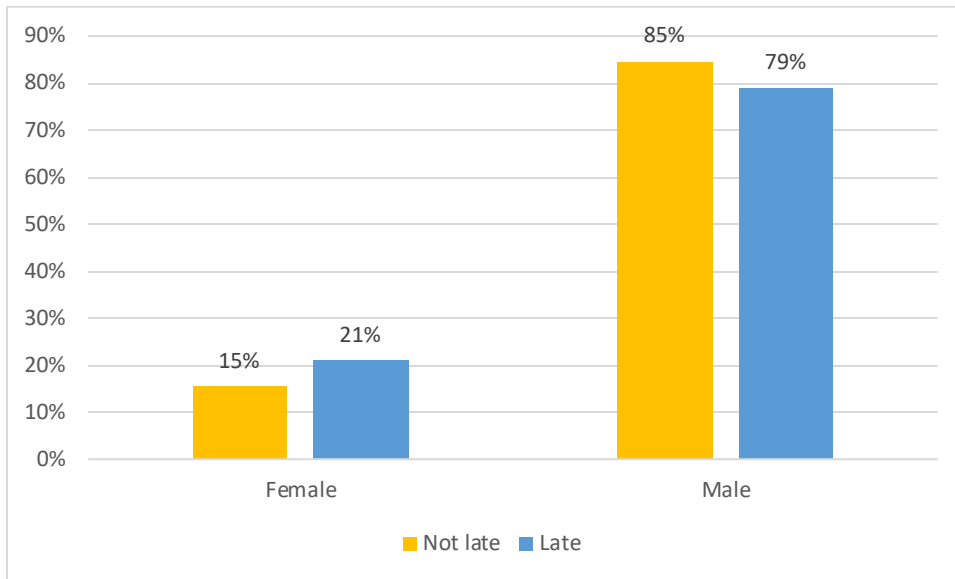


Figure 4: Breakdown of HIV diagnoses by gender

Source: review data

Age

The distribution of all new HIV diagnoses among different age groups is similar in Bromley to London and England data (Figure 5).

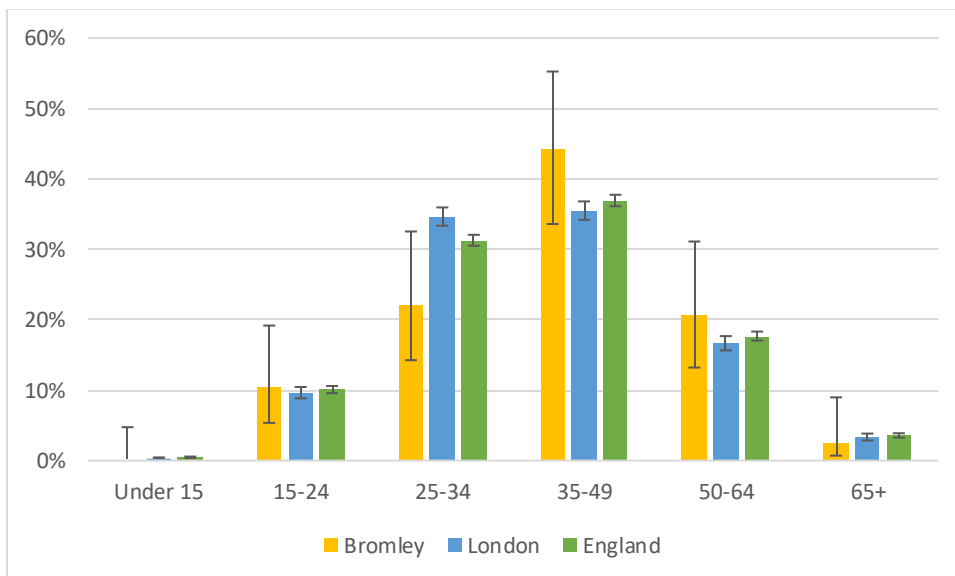


Figure 5: Age distribution of new HIV diagnoses (2018-2021)

Source: Bromley local authority HIV surveillance data tables; [HIV: annual data tables - GOV.UK \(www.gov.uk\)](#)

In the review data the age distribution between the 2 groups is similar and there are no statistically significant differences although numbers are small (Figure 6).

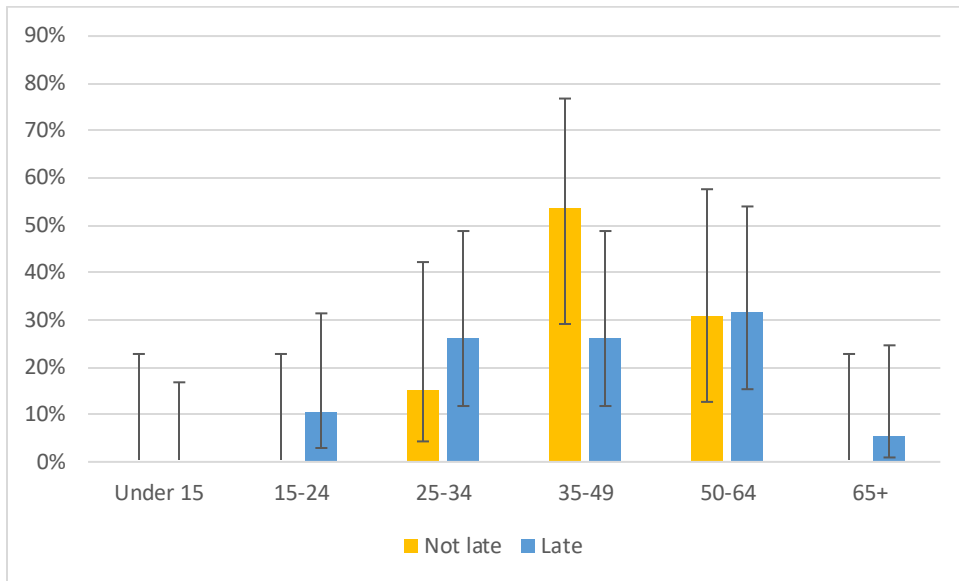


Figure 6: Age distribution of new HIV diagnoses between those not diagnosed or diagnosed late (2018-2021)

Source: review data

Ethnicity

The distribution of new HIV diagnoses among ethnic groups is not clear as ethnicity is not always recorded making it difficult to draw comparative conclusions (Figure 7).

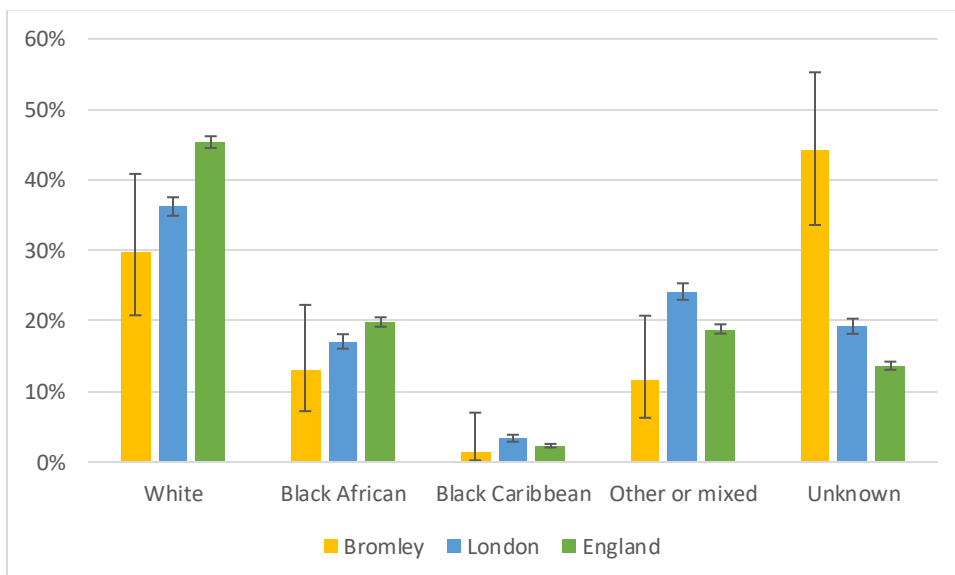


Figure 7: Distribution of new HIV diagnoses among ethnic group (2018-2021)

Source: Bromley local authority HIV surveillance data tables; [HIV: annual data tables - GOV.UK \(www.gov.uk\)](#)

In the review data numbers are too small to show any statistically significant differences in ethnic composition of either group (Figure 8).

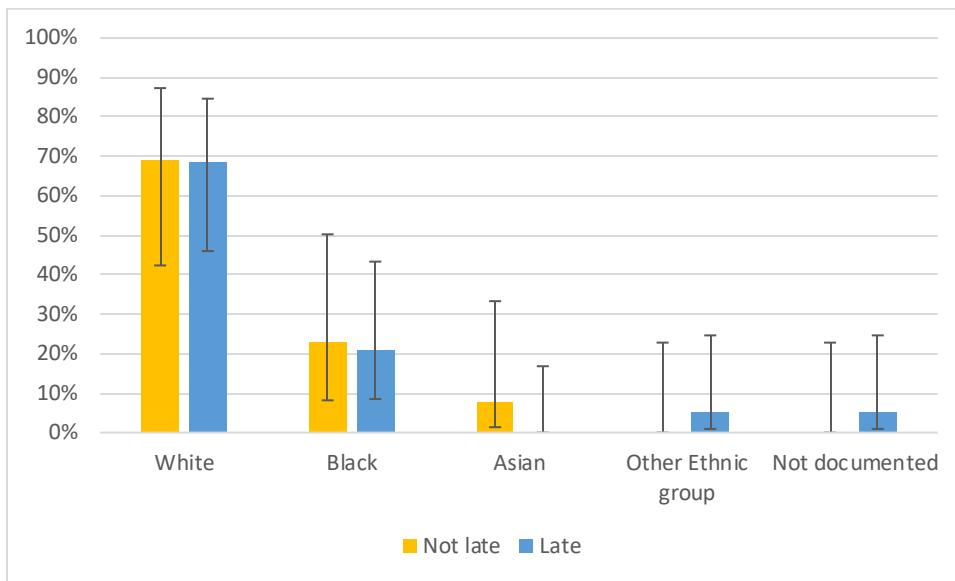


Figure 8: Distribution of broad ethnic group among those with a new HIV diagnosis either not diagnosed late or diagnosed late (2018-2021)

Source: review data

Risk factor

The distribution of infection by varying routes of exposure does not show any significant differences between populations although numbers where exposure category is not known makes it difficult to draw conclusions (Figure 9). London data for the Other and Unknown categories is missing from this chart as there is an error in the published regional data. The category MSM includes men who also reported injecting drug use. These men are not included in the injecting drug use group.

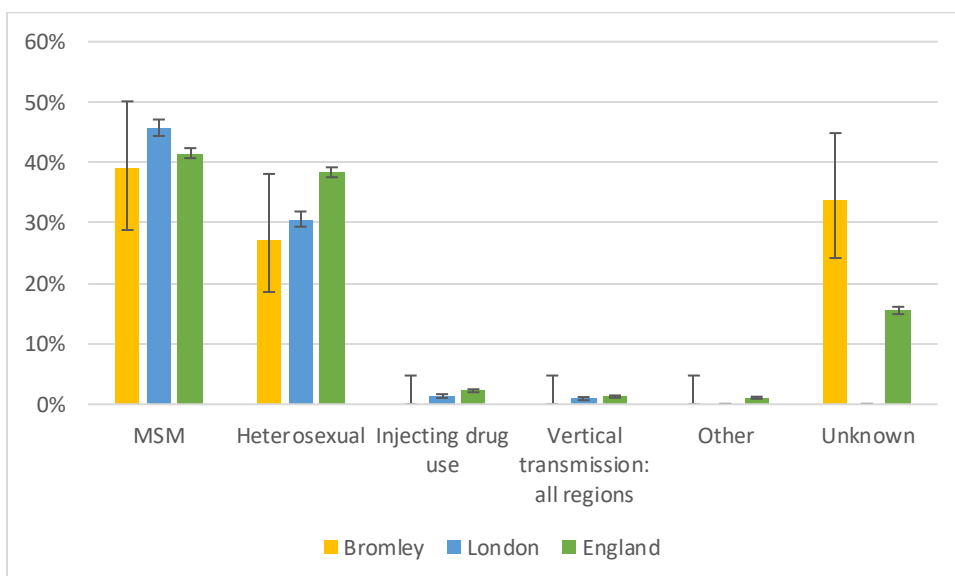


Figure 9: Distribution of new HIV diagnoses by exposure category (2018-2021)

Source: Bromley local authority HIV surveillance data tables; [HIV: annual data tables - GOV.UK \(www.gov.uk\)](#)

In the review data there are no statistically significant differences in terms of risk factor, whether heterosexual or men who have sex with men (MSM), between the 2 populations although numbers are small (Figure 10). The category MSM includes men who also reported injecting drug use. These men are not included in the injecting drug use group. There was a possible occupational exposure among those in the heterosexual risk group.

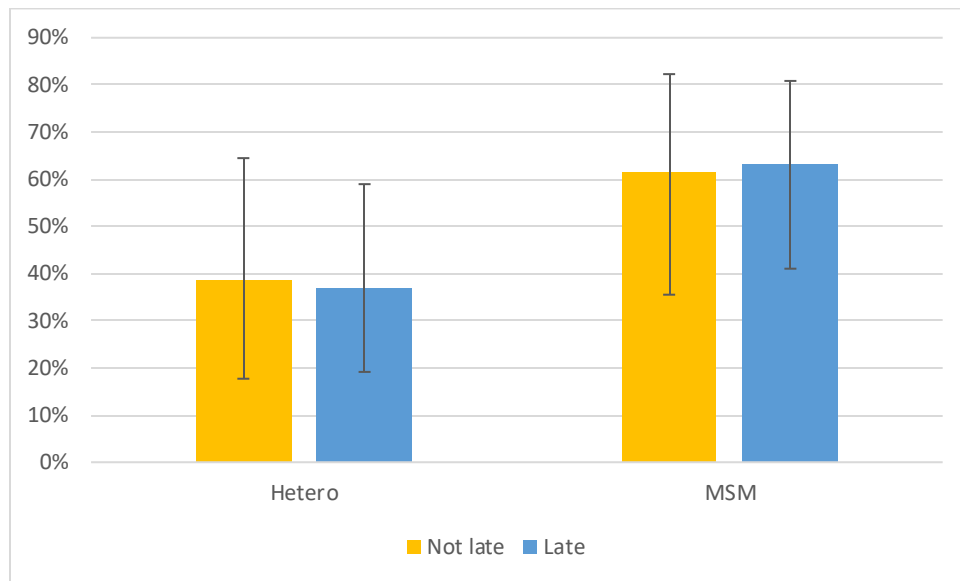


Figure 10: Distribution of risk factors among those with a new HIV diagnosis either not diagnosed late or diagnosed late (2018-2021)

Source: review data

Tested before

The proportion of those diagnosed late who had tested before for HIV (47.4%) is lower than for those not diagnosed late (76.9%). While the difference is not statistically significant this indicates a lack of regular testing may be a factor in late diagnosis (Figure 11).

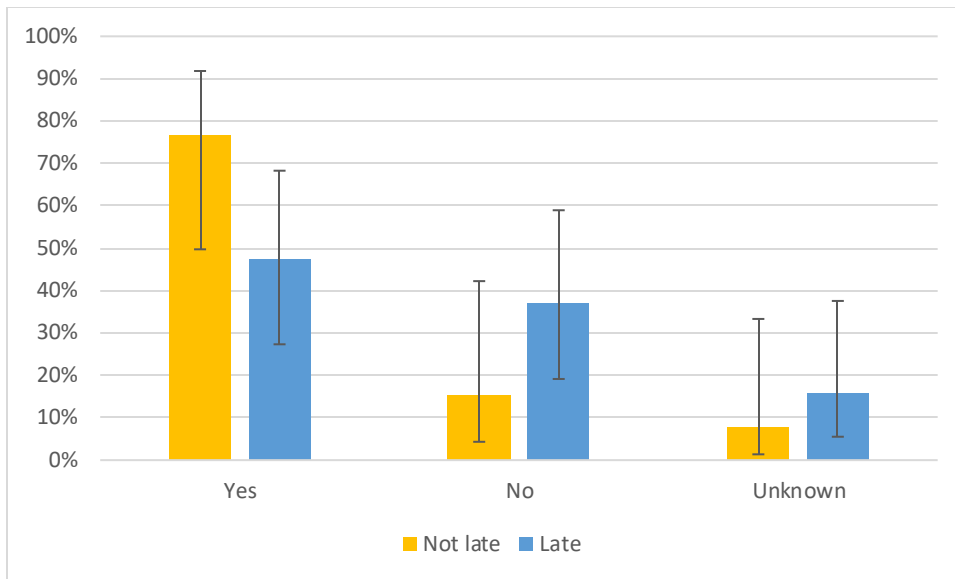


Figure 11: Comparison of those who have tested for HIV before among those with a new HIV diagnosis either not diagnosed late or diagnosed late (2018-2021)

Source: review data

Taken PrEP before

There is little difference among those either not diagnosed late or diagnosed late who have taken PrEP in the past (Figure 12). Of the total of 32 new HIV diagnoses only one person had taken PrEP before. Not taking PrEP is a potential contributory factor to HIV infection whether diagnosed late or not.

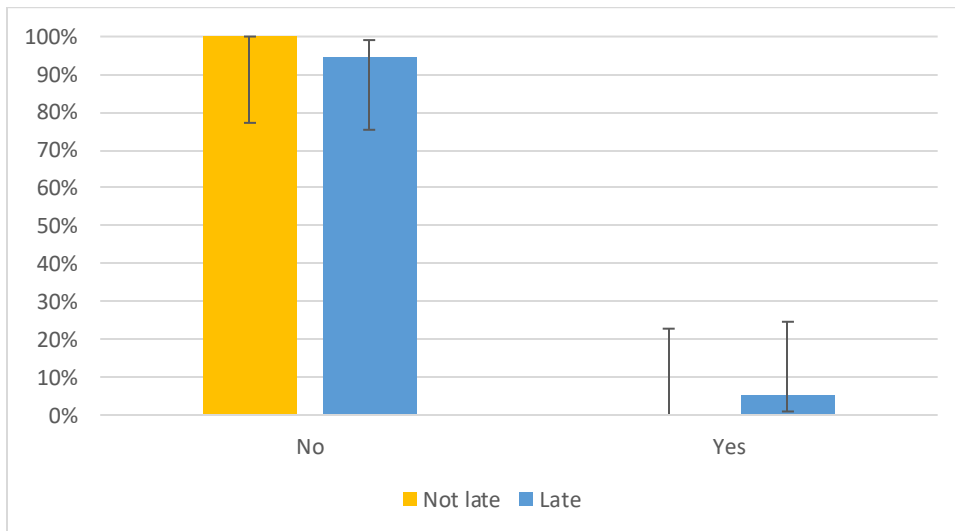


Figure 12: Comparison of those who have ever taken PrEP among those with a new HIV diagnosis either not diagnosed late or diagnosed late (2018-2021)

Source: review data

Missed opportunities

The review asked clinicians to indicate if they considered there to have been a missed opportunity for HIV diagnosis. A missed opportunity to test is where there is evidence of a criteria for testing being noted during an interaction with health services, such as the presence of an indicator condition – a medical condition known to be associated with undiagnosed HIV, and no test being offered. Of those not diagnosed late none indicated a missed opportunity while for those diagnosed late almost a third were identified as there having been missed opportunities (Figure 13) although information on where these missed opportunities took place is scant. While numbers are small and differences between the 2 groups are not statistically significant, there is a need to understand those missed opportunities and how they can be avoided.

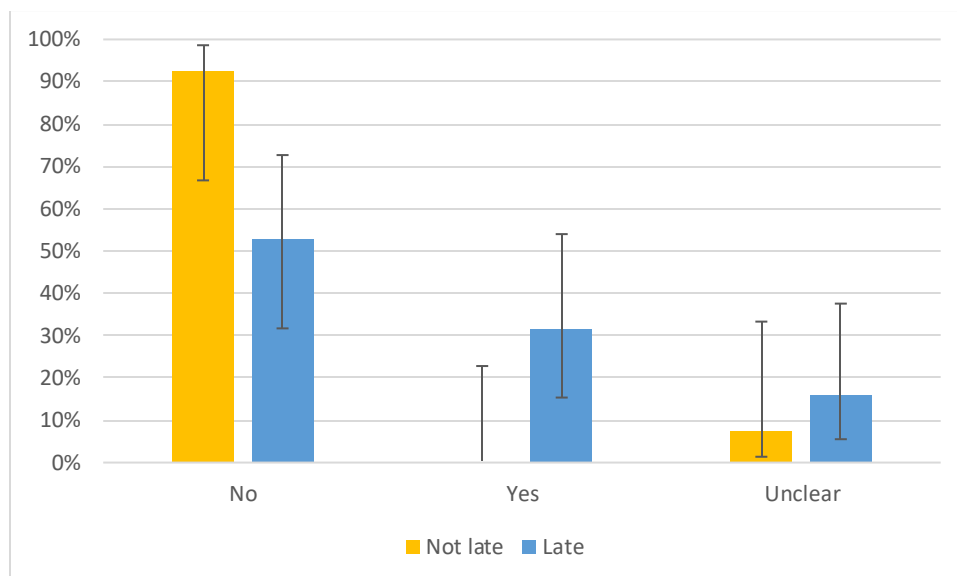


Figure 13: Missed opportunities of diagnosis indicated among those with new HIV diagnoses between those not diagnosed late and those diagnosed late (2018-2021)

Source: review data

Opt-out testing

The protocol for HIV testing changed at the beginning of 2022 which now requires patients to opt out of testing rather than to opt in. The impact of this cannot be seen in the review data. However, data has been obtained from the Princess Royal University Hospital (PRUH) detailing the number of tests carried out between May 2022 and August 2023, the number of positive tests and the number of new positives found (Table 4). Of the 9 new HIV diagnoses 7 were among Bromley residents all of whom are now engaged in care. One known HIV positive Bromley resident previously lost to follow up is now reengaged in care.

Number tests at PRUH	Number positive	Percentage positive	Number new diagnoses	Percentage positives that are new diagnoses
43424	118	0.27%	9	7.6%

Table 4: Opt-out HIV testing at PRUH May 2022 to August 2023

Source: PRUH

Summary

There have been increases in the latest 3 years of UKHSA data in the proportion of HIV diagnoses with recorded CD4 counts. A full picture of whether a diagnosis was late or not in some years is not available and should be noted. Better recording of data would enhance the validity of the review.

Comparisons between all new HIV diagnoses locally, regionally and nationally have not revealed any statistically significant differences. Nor has the comparison between those diagnosed late or not. This may be because of the small numbers involved although it may also mean such differences do not exist. We are unable to draw conclusions. However, the review data has indicated that those diagnosed late may not be being tested enough. The testing regime has since changed and now people attending Emergency Departments must opt out of testing for HIV. Unfortunately, we are missing 2022 review data to understand better the impact of this on late diagnosis, but we have seen data from the PRUH showing the number of tests completed and number of new diagnoses found.

The review data has shown that all but one of the patients with a new HIV diagnoses had not used PrEP before. The benefits of PrEP to reduce the risk of acquiring HIV are known and indicate the need for wider promotion.

It would be beneficial to include data from 2022 in the analysis as well as widening the review to include all providers diagnosing HIV for Bromley residents.