

Protecting and improving the nation's health

# Annual Epidemiological Spotlight on HIV in the East of England 2016 data

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# Contents

1.	Summary	4
2.	Charts, tables and maps	11
3.	Information on data sources	22
4.	Further information	24
5.	About the Field Epidemiology Service	25
6.	Acknowledgements	26

# 1. Summary

HIV remains an important public health problem in the East of England. In particular, the high level of individuals diagnosed at a late stage of infection and the increase in diagnoses in men who have sex with men (MSM) are of concern.

#### New diagnoses

In 2016, an estimated 394 East of England residents were newly diagnosed with HIV, accounting for 8% of new diagnoses in the UK.

For robust trend data, we need to examine the number of people newly diagnosed in East of England clinics (not all of whom are resident in the East of England). In 2016, this was 335, a fall of 14% from 2015. Nationally, there has been a long-term trend for a decline in the overall number of new diagnoses due in the main to a fall in the number of new diagnoses in black Africans who have acquired HIV abroad.

The number of gay, bisexual and other men who have sex with men (MSM) resident in the East of England newly diagnosed with HIV in 2016 (176, adjusted for missing information) was 15% higher than in 2007.

The new diagnosis rate for East of England residents aged 15 years or older (7 per 100,000) was below that of England in 2016 (10 per 100,000).

In 2016, 45% of all new diagnoses in East of England residents were in MSM (compared to 38% in 2015 and 26% in 2007). Of the MSM newly diagnosed with HIV 84% were white and 72% were UK born.

Heterosexual contact was the largest infection route for new diagnoses in East of England residents in 2016 (49%). Infections in African born persons accounted for 46% of all heterosexually acquired cases in 2016 (n=75), compared to 73% (n=278) in 2007. Infections in UK born persons accounted for 31% of all heterosexually acquired cases in 2016.

Injecting drug use accounted for 3% of new diagnoses in East of England residents.

Black Africans represented 27% of all newly diagnosed East of England residents in 2016 (compared to 34% in 2015 and 51% in 2007). A small proportion of new diagnoses in 2016 were in black Caribbeans (2%).

The number of new diagnoses was highest in the 25-34 year age groups in males and the 35-44 year age groups in females in 2016.

#### Late diagnoses

Reducing late HIV diagnoses is one of the indicators in the Public Health Outcomes Framework. People who are diagnosed late have a tenfold risk of mortality within one year of diagnosis compared to those diagnosed promptly and they have increased healthcare costs.

It is of particular concern that a large proportion of East of England residents with HIV are diagnosed late (47% from 2014 to 2016, compared to 40% in England), as defined by a CD4 count of less than 350 cells/mm<sup>3</sup> at diagnosis.

In the East of England, heterosexuals were more likely to be diagnosed late (58% of males, 51% of females) than MSM (35%). By ethnic group, black Africans were more likely to be diagnosed late than the white population (56% and 41% respectively).

#### People living with diagnosed HIV

The 6,646 people living with diagnosed HIV in the East of England in 2016 was 3% higher than 2015 and 70% higher than 2007. This increase is partly due to the effectiveness of HIV treatment, which has reduced the number of deaths from HIV.

The diagnosed prevalence rate of HIV in the East of England in 2016 was 1.6 per 1,000 residents aged 15-59 years. This was lower than the 2.3 per 1,000 observed in England as a whole. 11 local authorities in the East of England had a diagnosed HIV prevalence in excess of 2 per 1,000 population aged 15-59 years in 2016, which is the threshold for expanded HIV testing. They were Bedford (2.3), Harlow (2.8), Hertsmere (2.2), Luton (4.2), Milton Keynes (3), Norwich (2.1), Peterborough (2.1), Southend-on-Sea (2.9), Stevenage (2.7), Thurrock (2.1) and Watford (2.8).

The 2 most common probable routes of transmission for East of England residents living with diagnosed HIV in 2016 were sex between men and women (64%) and sex between men (31%).

In 2016, 48% of those living with diagnosed HIV in the East of England were aged between 35 and 49 years. 38% were aged 50 years and over (up from 17% in 2007). Males represented 58% of East of England residents living with diagnosed HIV in 2016 and females represented 42%.

In 2016, 47% of East of England residents living with diagnosed HIV were white and 42% were black Africans. However, due to the relative sizes of the white and black African populations, the rate per 1,000 population aged 15-59 years was much higher in black Africans (45.1 per 1,000) than in the white population (0.8 per 1,000).

#### Continuum of HIV care

In the East of England in 2016, 96% of residents with diagnosed HIV were receiving anti-retroviral treatment. Of these, 97% were virally suppressed (viral load <200) and were very unlikely to pass on HIV, even if having sex without condoms (untransmissible virus). This compares to 96% in England receiving ART and 97% of these virally suppressed.

For East of England residents diagnosed in 2016, the median time from diagnosis to treatment initiation was 24 days. This compares to 21 days in England.

#### People living with undiagnosed HIV

It is estimated that in 2016, 13% (Credible Interval (CrI) 10%-17%) of people living with HIV in England, excluding London, were undiagnosed. This equates to an estimated 6,700 (CrI 5,000-9,400) undiagnosed people.

It is estimated that 3,900 MSM in England, outside London, are undiagnosed (Crl 2,300-5,800) and 2,400 heterosexuals (Crl 1,600-4,500), including 1,000 black Africans.

The proportion undiagnosed varied by exposure group with the highest proportion undiagnosed among people living with HIV who inject drugs (25%, Crl 11%-56%), who are MSM (16%, Crl 10%-22%) and who are heterosexual men (14%, Crl 8%-28%).

#### **HIV testing**

A total of 81,666 HIV tests were conducted in specialist sexual health services (SHSs) in the East of England, an increase of 2% since 2012. The HIV testing coverage at specialist SHSs in the East of England was 76%, which compares to 68% across England. HIV testing coverage in specialist SHSs in the East of England is higher in heterosexual men (81%) than heterosexual women (71%), and highest in MSM (90%).

#### Public health implications

Free and effective antiretroviral therapy (ART) in the UK has transformed HIV from a fatal infection into a chronic, manageable condition. People living with HIV in the UK can now expect to live into old age if diagnosed promptly. For many people, treatment means one daily tablet with no or few side effects.

There are a number of approaches to the prevention of HIV transmission and continued funding in prevention activities remains critical to curb the HIV epidemic. Prevention should be targeted at MSM and black African people who are the population groups most at risk of HIV.

The UK is one of the first countries in Europe to witness a substantive decline in HIV diagnoses in gay and bisexual men. Combination prevention is working: the decline is driven by large increases in HIV tests among gay and bisexual men attending sexual health clinics, including repeat testing in higher risk men, as well as improvements in the uptake of anti-retroviral therapy (ART) following HIV diagnosis.<sup>1,2</sup> The largest declines in new HIV diagnoses were observed in areas of London with the highest testing rates and prompt access to treatment. Other factors, including condom use with casual partners and internet access of pre-exposure prophylaxis (PrEP), will also have contributed to the downturn in HIV diagnoses in this group.

Correct and consistent condom use remains an extremely effective way to prevent HIV transmission. Investment in HIV prevention has resulted in moderately high rates of condom use in key populations. Work to improve condom use should address underlying factors that lead to risk taking behaviour, especially among MSM. These are diverse and may include low self-esteem, 'chemsex' (the use of drugs before or during planned sexual activity to sustain, enhance, disinhibit or facilitate the experience) and sero-adaptive behaviour (modifying of sexual behaviour based on one's own HIV sero-status, the perceived HIV sero-status of a sexual partner, and/or differences in risk of transmission by different sexual acts).

While testing and treatment for HIV in the UK is free and available to all, large numbers of people living with HIV remain undiagnosed and rates of late diagnosis remain high. Late HIV diagnosis is associated with poorer health outcomes, including premature death. Furthermore, since the vast majority of people diagnosed with HIV are effectively treated, most new HIV infections are passed on from persons unaware of their infection.

Undiagnosed HIV infection and onward transmission can be reduced through further HIV testing. Due to the relatively high numbers of MSM and black Africans who remain undiagnosed, HIV testing is particularly important for these groups. In addition, incidence remains high in MSM.

Partner notification following the diagnosis of HIV infection is a highly effective way to detect undiagnosed HIV infections: in 2016 in England, 3.9% of partners of people diagnosed with HIV were also positive for HIV.

The 2017 PHE report on HIV testing in England includes recommendations that:<sup>3</sup>

<sup>3</sup> HIV testing in England: 2017 report. PHE.

<sup>&</sup>lt;sup>1</sup> Towards elimination of HIV transmission. AIDS and HIV-related deaths in the UK: 2017 report. PHE www.gov.uk/government/publications/hiv-in-the-united-kingdom

<sup>&</sup>lt;sup>2</sup> HIV in the United Kingdom: decline in new HIV diagnoses in gay and bisexual men in London, 2017 report. PHE www.gov.uk/government/statistics/hiv-annual-data-tables

www.gov.uk/government/publications/hiv-testing-in-england

- SHSs should consider how they can ensure:
  - o all MSM are offered and recommended regular (ie annual) HIV tests
  - all MSM at high risk of HIV acquisition (eg a recent anogenital STI diagnosis) are offered and recommended frequent (ie every 3 months) HIV tests
  - all black African men and women are offered and recommended regular HIV tests
  - HIV partner notification improves for heterosexuals and MSM
  - o all other attendees are offered and recommended to have HIV tests
- general practices and secondary care in high (2-5 people aged 15-59 years living with diagnosed HIV per 1,000 residents) and extremely high (>5 per 1,000) prevalence areas should consider how they can ensure that they offer and recommend HIV testing to patients in line with NICE recommendations<sup>4</sup>
- commissioners should consider how they can ensure that people at higher risk of HIV acquisition have access to a range of testing options including community testing and self-sampling
- providers of health services to patients with hepatitis B and C, TB and people who inject drugs should consider how they can ensure that all patients are offered and recommended to have HIV tests
- providers of HIV testing in prisons should consider how they can ensure that HIV testing is implemented and monitored effectively
- antenatal service providers and blood, tissue and organ donation services should continue to maintain current high levels of HIV testing

Symptoms due to HIV and AIDS may not appear for many years, and people who are unaware of their infection may not feel themselves to be at risk. However, anyone can acquire HIV regardless of age, gender, ethnicity, sexuality or religion and it is essential to challenge assumptions about who is at risk of HIV. As well as increasing awareness of HIV, efforts to reduce stigma and other socio-cultural barriers that prevent people from testing and seeking long-term care should be strengthened.

HIV Pre Exposure Prophylaxis (HIV–PrEP) is the use of antiretroviral agents by people who do not have HIV prior to a potential exposure to HIV to prevent acquisition of infection. Studies have shown that consistent use of HIV-PrEP can be an efficacious and effective prevention intervention. HIV–PrEP has the potential, within a combination prevention approach, to have a significant role in the control of HIV transmission.

<sup>&</sup>lt;sup>4</sup> HIV testing: increasing uptake among people who may have undiagnosed HIV. NICE. www.nice.org.uk/guidance/ng60

The first phase of implementation is the 3-year clinical trial of 10,000 participants, which launched in October 2017.<sup>5</sup> Although the evidence around the clinical effectiveness of PrEP is strong, advice from PHE has highlighted significant outstanding implementation questions that should be answered prior to using PrEP in a sustained way on a substantial scale in England. These questions will be answered by the clinical trial, paving the way for full roll-out. NHS England will fully fund the cost of the clinical trial phase and will work in partnership with local authorities, the Local Government Association and PHE to implement the findings as part of a wider national roll-out.

It has been demonstrated that the advantages of ART extend beyond personal clinical benefit. It is now widely understood that effective HIV treatment results in an 'undetectable' viral load which protects individuals living with HIV from passing on the virus to others. Revised guidelines from the British HIV Association and World Health Organization have been published, which recommend that patients start ART at diagnosis regardless of CD4 count both for clinical benefits and preventing onward transmission.

People living with HIV and their health care providers can discuss starting ART to reduce their risk of transmitting HIV to their sexual partners. A new policy of immediate anti-retroviral therapy at HIV diagnosis is currently being considered by NHS England, which would complement the current Treatment as Prevention policy.

As rates of other infections transmitted sexually such as gonorrhoea, syphilis, lymphogranuloma venereum, hepatitis C and *Shigella* have been shown to be higher in MSM who are HIV positive, it is important that MSM living with HIV are specifically made aware of the risks of these infections and how to prevent them.

As people with HIV continue to age, it is critical that HIV and other services continue to evolve to meet the needs of people living with HIV including the management of comorbidities and other complex health conditions.

With progressive strengthening of combination prevention (including condom use, expanded HIV testing, prompt ART and availability of pre-exposure prophylaxis (PrEP)), HIV transmission AIDS and HIV-related deaths could be eliminated in the UK. The recent encouraging changes are dependent upon sustained prevention efforts. The inconsistencies between groups and geographies demonstrate that combination prevention needs to be replicated for all those at risk of acquiring of HIV, whoever they are and wherever they live.

<sup>&</sup>lt;sup>5</sup> www.prepimpacttrial.org.uk

#### HIV risk reduction messages

Always use a condom correctly and consistently, and until all partners have had a sexual health screen.

Everybody who is offered an HIV test by their healthcare professional is advised to accept the test. So that if an HIV diagnosis is made, effective treatment can be started.

How to get an HIV test:

- go to a sexual health clinic or a community testing site (www.aidsmap.com/hiv-testfinder)
- ask your GP for an HIV test
- request a self-sampling kit online (www.freetesting.hiv) or obtain a self-testing kit

Gay, bisexual and other men who have sex with men are advised to test for HIV and other STIs at least annually and every 3 months if having sex with new or casual partners.

Black African men and women are advised to have an HIV test and a regular HIV and STI screen if having condomless sex with new or casual partners.

### 2. Charts, tables and maps





Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD).

The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.





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#### Figure 3: New HIV and deaths, reported from the East of England, 2007-2016

Please note that this chart is based on the Public Health of England centre (PHEC) from which the report originated (which is not necessarily the same as the PHEC of residence) as PHEC of residence is not available for death reports.



Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD). The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.

\*Numbers may rise as further reports are received. This will impact on interpretation of trends in more recent years.





Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD).

The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.

\*Numbers may rise as further reports are received and more information is obtained on area of residence of those diagnosed. This is more likely to affect more recent year, particularly **2016**. Please see important note on data earlier in this report. This will impact on interpretation of trends in more recent years.

#### Figure 5: Number of new HIV diagnoses by age group and gender (A) and probable route of infection in males (B), East of England residents, 2016



Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD).

The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.

#### Figure 6: Number of new HIV diagnoses by ethnic group (adjusted for missing ethnic group information), East of England residents, 2007-2016 (please see footnote on interpreting trends)\*



Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD).

The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.

\*Numbers may rise as further reports are received and more information is obtained on area of residence of those diagnosed. This is more likely to affect more recent year, particularly 2016. Please see important note on data earlier in this report. This will impact on interpretation of trends in more recent years.

# Figure 7: Number of new HIV diagnoses by world region of birth (adjusted for missing world region of birth information), East of England residents, 2007-2016 (please see footnote on interpreting trends)\*



Source: Public Health England, HIV & AIDS New Diagnoses and Deaths (HANDD).

The number of new diagnoses will depend on accessibility of testing as well as infection and transmission.

\*Numbers may rise as further reports are received and more information is obtained on area of residence of those diagnosed. This is more likely to affect more recent year, particularly **2016**. Please see important note on data earlier in this report. This will impact on interpretation of trends in more recent years.

### Figure 8: Percentage of new HIV diagnoses that were diagnosed late by upper tier local authority of residence, East of England, aged 15 years and over, 2014-2016 \*



Source: Public Health England, HIV and AIDS New Diagnosis Database/System, HIV & AIDS Reporting System (HARS).

\* Only includes new diagnoses for which CD4 count was reported within 91 days of diagnosis; late diagnosis defined as CD4 count <350 cells/mm<sup>3</sup>.

The underlying population will impact on the proportion diagnosed late, eg MSM are less likely to be diagnosed late.

# Figure 9: Percentage of new HIV diagnoses that were diagnosed late by probable route of infection (A) and ethnic group (B), East of England residents, ages 15 years and over, 2014-2016\*



Source: Public Health England, HIV and AIDS New Diagnosis Database/System, HIV & AIDS Reporting System (HARS). \* Only includes new diagnoses for which CD4 count was reported within 91 days of diagnosis; late diagnosis defined as CD4 count <350 cells/mm<sup>3</sup>.

### Figure 10: Diagnosed HIV prevalence per 1,000 residents aged 15-59 years by PHE Centre, 2016





### Figure 11: Number of residents living with diagnosed HIV and accessing care, the East of England, 2007-2016

Figure 12: Number of residents living with diagnosed HIV and accessing care by probable route of transmission (adjusted for missing information), the East of England, 2016







Source: Public Health England, HIV & AIDS Reporting System (HARS).









### Figure 16: Diagnosed HIV prevalence per 1,000 residents aged 15-59 years by local authority, the East of England, 2016



## Figure 17: Diagnosed HIV prevalence per 1,000 residents (all ages) by middle super output area of residence, the East of England, 2016





Figure 18: The continuum of HIV care, England excluding London, 2016

# 3. Information on data sources

HIV & AIDS New Diagnoses and Deaths (HANDD) collects information on new HIV diagnoses, AIDS at diagnosis and deaths among people diagnosed with HIV. Information is received from laboratories, specialist SHSs, GPs and other services where HIV testing takes place in England, Wales and Northern Ireland. The Recent Infection Testing Algorithm (RITA) and CD4 surveillance scheme are linked to HANDD to assess trends in recent and late diagnoses. Data is deduplicated across regions and therefore figures may differ from country-specific data.

The Survey of Prevalent HIV Infections Diagnosed (SOPHID) began in 1995 and was a cross-sectional survey of all adults living with diagnosed HIV infection who attend for HIV care in England, Wales and Northern Ireland. SOPHID collected information about the individual's place of residence along with epidemiological data including clinical stage and antiretroviral therapy (ART). In 2015, SOPHID reporting in England was replaced by the HIV & AIDS Reporting System (HARS), which captures information at every attendance for HIV care.

Date of data extract: October 2017. Updates to HANDD and SOPHID/HARS made after this date will not be reflected in this report.

Confidence intervals for rates in the figures have been calculated to the 95% level using the Byar's method; confidence intervals for percentages have been calculated to the 95% level using the Wilson Score method.

See: www.apho.org.uk/resource/item.aspx?RID=48457. Confidence intervals presented in the text are produced by Bayesian analysis.

ONS mid-year estimates for 2016 were used as a denominator for rates for 2016.

The data behind charts showing absolute numbers has been adjusted for missing information. However, unless stated otherwise, the numbers in the summary section are the numbers as reported, ie unadjusted counts. Where charts are displaying adjusted data, this is indicated in the chart title.

The denominators for all percentages exclude records for which information was unknown, ie the proportion of new diagnoses where probable route of infection was sex between men would be calculated using new diagnoses for which route of infection was known as the denominator. With the exception of Figure 3, all analyses in this report are residence-based. Information about a patient's place of residence is not collected by HANDD. Reports to this database are cross-linked to the database of people accessing care for HIV, HARS. If a report could not be linked to a corresponding HARS report, the patient's PHEC of residence (but not their LA of residence) was imputed using the location of the centre at which they were diagnosed where sufficient information about the latter was available.

Imputation was not used to supplement the linkage process in the HIV Spotlight report produced in 2014. This means that the numbers in the new diagnosis section of the report for that year cannot be compared directly with the numbers in this report.

Numbers may change as more information becomes available to assign area of residence to cases and historical data is refreshed accordingly.

# 4. Further information

Please access the online 'Sexual and Reproductive Health Profiles' for further information on a whole range of sexual health indicators: fingertips.phe.org.uk/profile/sexualhealth

For more information on local sexual health data sources please access the PHE guide: www.gov.uk/government/uploads/system/uploads/attachment\_data/file/576052/PHE\_S H\_data\_guide\_December\_2016\_FINALNB081216.pdf

Local authorities have access to LA HIV, sexual and reproductive health epidemiology reports (LASERs) and other HIV and STI intelligence via the HIV and STI portal. They should contact mail to: lynsey.emmett@phe.gov.uk if they do not have access to this information.

# 5. About the Field Epidemiology Service

The Field Epidemiology Service (FES) supports Public Health England Centres and partner organisations through the application of epidemiological methods to inform public health action.

FES does this in 2 main ways. Firstly, by providing a flexible expert resource available, as and when needed, to undertake epidemiological investigations for key health protection work. Secondly, through the expert analysis, interpretation and dissemination of surveillance information to PHE Centres, local health partners, service providers and commissioners of services.

Within the FES network, excellence and innovation is encouraged. We foster academic collaborations and take active part and lead in research, development and training.

You can contact your local FES team at: efeu@phe.gov.uk

Please contact: lynsey.emmett@phe.gov.uk if you have any comments or feedback regarding this report or the FES service.

# 6. Acknowledgements

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