



HIV and AIDS statistics

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This note summarises recent statistics on Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS). Section 1 describes how the numbers of those diagnosed with and those dying from HIV/AIDS in the UK have changed over time. The characteristics that put people most at risk of HIV are considered in Sections 2 and the manner and place in which individuals with HIV acquire their infection is examined in Section 3. The general prevalence of HIV, and levels of awareness of infection, are examined in Section 4. International statistics on HIV and AIDS are briefly considered in Section 5, while Section 6 looks at public knowledge and attitudes to the disease.

Contents

| | |
|---|-----------|
| POSTBOX information on HIV Infection and Treatment | ii |
| 1 Diagnoses of HIV and AIDS in the UK | 1 |
| 1.1 Trends, 1996-2011 | 1 |
| 1.2 A warning on the interpretation of diagnosis data | 1 |
| 2 Characteristics of those diagnosed | 2 |
| 2.1 Age | 2 |
| 2.2 Ethnicity | 2 |
| 2.3 Region | 3 |
| 3 Exposure to HIV | 4 |
| 3.1 Transmission routes | 4 |
| 3.2 Exposure abroad | 5 |
| 4 Prevalence of HIV | 6 |
| 4.1 Diagnosed HIV prevalence | 6 |
| 4.2 Total and undiagnosed HIV prevalence | 6 |
| 5 International data. | 7 |
| 6 Public awareness and opinion in the UK | 9 |
| 6.1 Knowledge of how HIV is transmitted | 9 |
| 6.2 Attitudes to HIV sufferers | 9 |



HIV Infection and Treatment

Clinical Features of HIV Infection

A virus is an infectious particle consisting of genetic material and a protein or lipid coat. Viruses lack the chemical machinery to survive independently, so use host cells of living organisms to live and replicate. The HIV virus targets specialised white blood cells of the immune system (called T-helper cells) which play a key role in co-ordinating the immune response to fight infections. HIV infection has clinically-defined stages. An infected person can transmit the virus at any point.

Primary Infection

People infected with HIV may experience symptoms as their immune system reacts to the presence of the virus in blood. Symptoms may be in the form of a fever, rash or sore throat but many (around 50%) have a short-lived flu-like illness lasting 2-4 weeks. This is called sero-conversion illness, characterised by the production of HIV antibodies. If an HIV test to detect the presence of HIV antibodies is performed before seroconversion is complete, the result may be negative. Other types of test can be used to detect HIV during this early stage. During this stage, the virus usually reproduces quickly, reaching very high levels. HIV levels in the blood can be greater than at any other stage in the course of infection and so the risk of transmitting the virus via unprotected sex is very high.

Symptom-Free and Symptomatic Stages of HIV

Asymptomatic Stage

Following the primary stage, the next phase is characterised by the absence of symptoms. This varies in duration depending on the rate at which the virus replicates and the strength of an individual's immune response. If HIV status remains undiagnosed and therefore untreated, it can take up to a decade before symptoms appear. This means that many people may be unaware that they are HIV-positive. However, HIV antibodies in the blood can be detected with a test.

Symptomatic HIV Infection

Chronic damage to the immune system leaves the body less able to fight common opportunistic infections and symptoms appear. Common symptoms in this stage are night sweats, weight loss, oral thrush, increased outbreaks of herpes (often cold sores), swollen glands in the neck, groin or armpit, tiredness and persistent diarrhoea. However, some of these symptoms are very common in people who do not have HIV and so those who are HIV-positive may continue to be unaware of their infection. If left untreated, the immune system continues to deteriorate and symptoms get worse.

Progression to Acquired Immunodeficiency Syndrome (AIDS)

The immune system is not functioning properly at this stage, the most advanced phase of HIV infection, characterised by serious infections (such as tuberculosis and pneumonia) and cancers (such as Non-Hodgkin's lymphoma and Kaposi's sarcoma). Without treatment, a patient would expect to live for 1-2 years.

Treating HIV: Antiretroviral Therapy

Antiretroviral drugs (ARTs) allow the immune system to recover by preventing the virus from entering cells or by interfering with the virus's life cycle. They are not a cure, but with early diagnosis and appropriate treatment, they can give a person with HIV a near-normal life expectancy, although there can be some side-effects. There are five main classes of drugs which vary in their mode of action.

When a virus reproduces in spite of the presence of a drug this is termed *acquired resistance*, usually caused by patients not taking drugs on time. Newly-diagnosed people may also carry drug-resistant forms of HIV, passed from the person that infected them, called *transmitted resistance*. To minimise the development of resistance to specific drugs and to ensure that a patient's treatment will be effective, ARTs from at least two different classes are combined into one or more pills taken daily, known as combination antiretroviral therapy or Highly Active Antiretroviral Therapy (HAART). Short-term side-effects are common in the early days of treatment and are self-resolving in the vast majority of cases (~90%) but they can be improved by changing the combination of drugs if necessary. Combination antiretroviral therapy has dramatically reduced AIDS-related mortality and significantly improved the health of those living with HIV.

Early Diagnosis and Treatment

As the early stages of HIV infection can be largely asymptomatic, it is particularly important to offer to test those who are at most risk of becoming infected (in the UK, men who have sex with men and people of sub-Saharan African origin) so that timely treatment can be offered. If they are unaware of their HIV status they will not know they are transmitting the virus (through unprotected sex for example) and without diagnosis and appropriate treatment their health will eventually deteriorate to a point at which they develop AIDS. Furthermore, data shows that people who receive a late diagnosis are five times more likely to develop AIDS or die compared with those who are diagnosed and treated early.

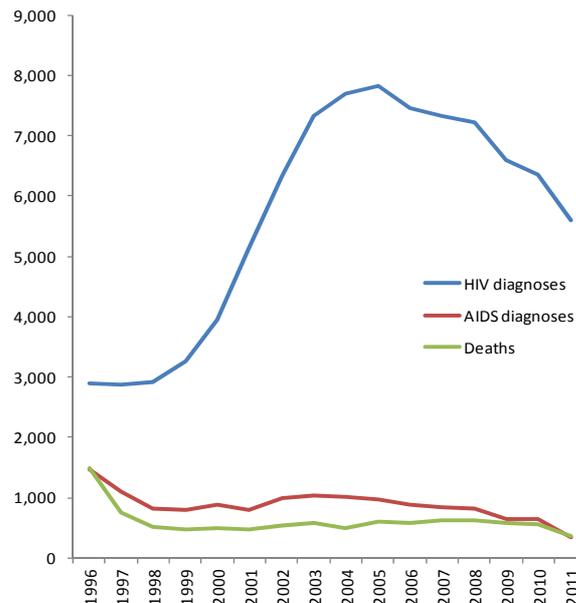
1 Diagnoses of HIV and AIDS in the UK¹

1.1 Trends, 1996-2011

Up to the end of 2011, 120,756 people in the UK had been diagnosed with HIV, 27,361 had been diagnosed with AIDS and 20,335 HIV-diagnosed individuals had died.

Chart 1 highlights trends in annual HIV and AIDS diagnoses since 1996. The lowest number of AIDS diagnoses ever recorded was observed in 2011. HIV diagnoses have also fallen recently, but remain almost twice as high as those seen at the end of the 1990s.

Chart 1: HIV and AIDS diagnoses and deaths, 1996-2011



Annual numbers of HIV diagnoses in the UK doubled between 2000 and 2005 and remained above 7,000 in each year until 2009. AIDS diagnoses halved between 1996 and 1998, and have fallen year-on-year since 2003 and HIV-related deaths have followed a similar pattern. These trends are largely due to the effectiveness of highly active anti retroviral therapies² (HAARTs) in delaying the progression of HIV to AIDS, and reducing HIV-associated morbidity and mortality.

1.2 A warning on the interpretation of diagnosis data

Due to the clinical course of infection, HIV diagnosis data cannot be used to measure either prevalence (number of cases in the population) or incidence (number of new cases in a given time period) of HIV. Prevalence estimates are produced by the HPA from survey data, and are analysed in Section 3.

In addition, the HPA offers the following advice on interpreting data on HIV diagnoses:

“Apparent trends over time in these reports must be interpreted with care, as each data source is subject to reporting delay which varies over time. We used statistical methods to adjust for these delays for data received from 2004-2008. ... Furthermore, the diagnosis of infection in an asymptomatic person depends upon risk recognition, willingness to have an HIV test and test accessibility.” *Source: HPA New Diagnoses report, p.7*

¹ All UK data in sections 1-4 is sourced from the [Health Protection Agency \(HPA\)](#)

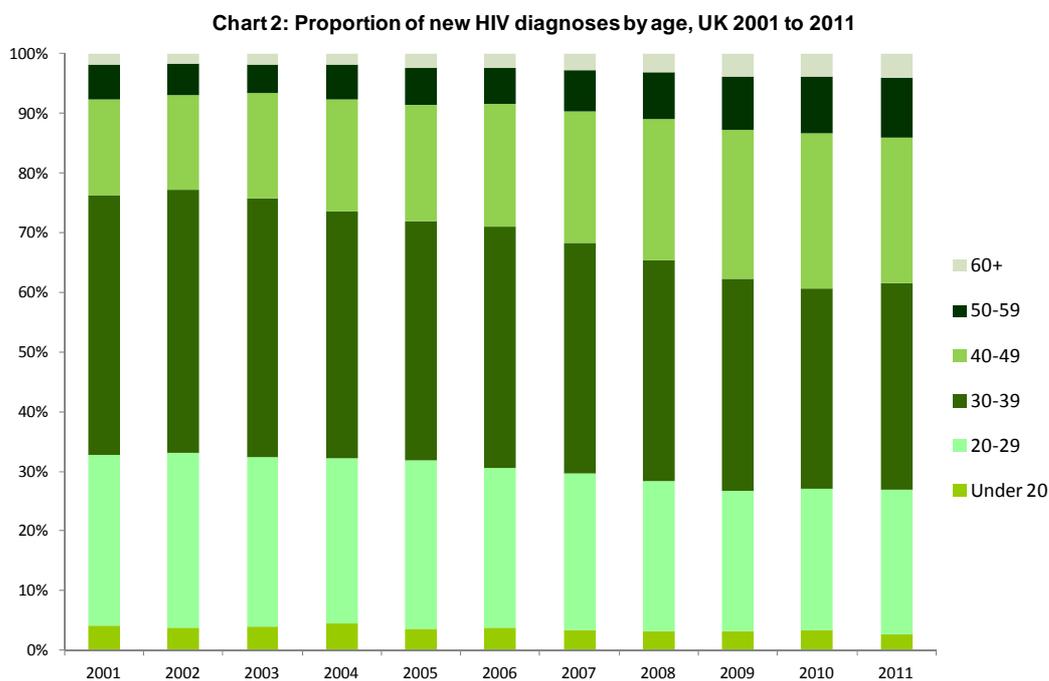
² A regime whereby several antiretroviral drugs are taken in combination. It was first introduced in 1996.

In effect, because HIV typically has a prolonged asymptomatic 'silent' period after an individual is first infected, changes in numbers of new diagnoses may be a reflection of changes in availability or attitudes towards HIV testing, rather than degree of prevalence or incidence.

2 Characteristics of those diagnosed

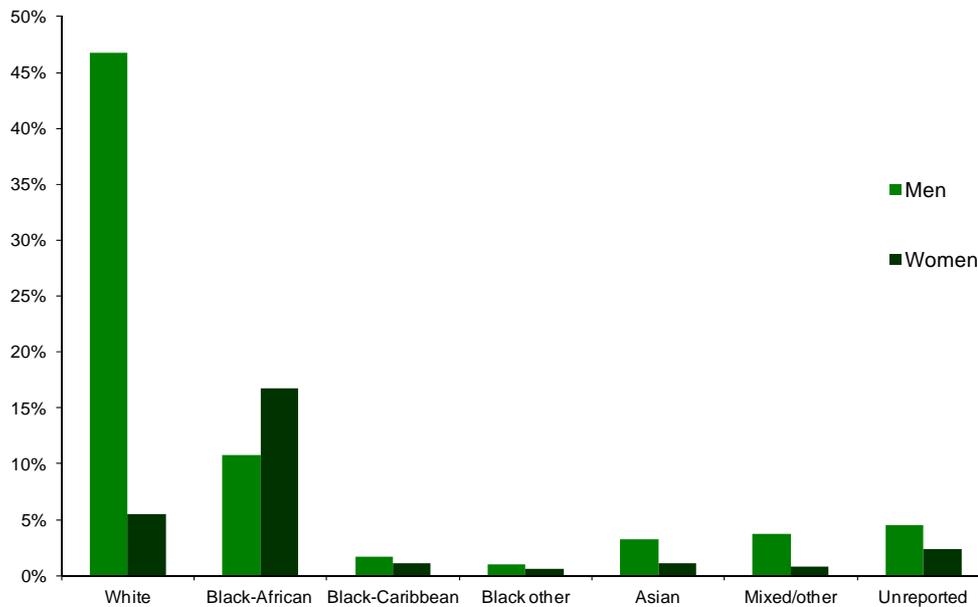
2.1 Age

In 2011, over half (59%) of new HIV diagnoses were among adults aged between 30 and 49, while adults in their twenties and under accounted for just over a quarter (27%) of diagnoses. As Chart 2 shows, the distribution of diagnoses by age has changed slightly over the past decade, with the distribution of diagnoses shifting more towards older age groups.



2.2 Ethnicity

Chart 3 shows the distribution of HIV diagnoses by ethnicity and gender. The most pronounced over-representation occurs among the Black African ethnic group. According to the Office for National Statistics, 1.8% of men and 1.7% of women are from Black African backgrounds, yet 10.8% of new HIV diagnoses in 2011 were attributed to Black African men and 16.7% to Black African women.

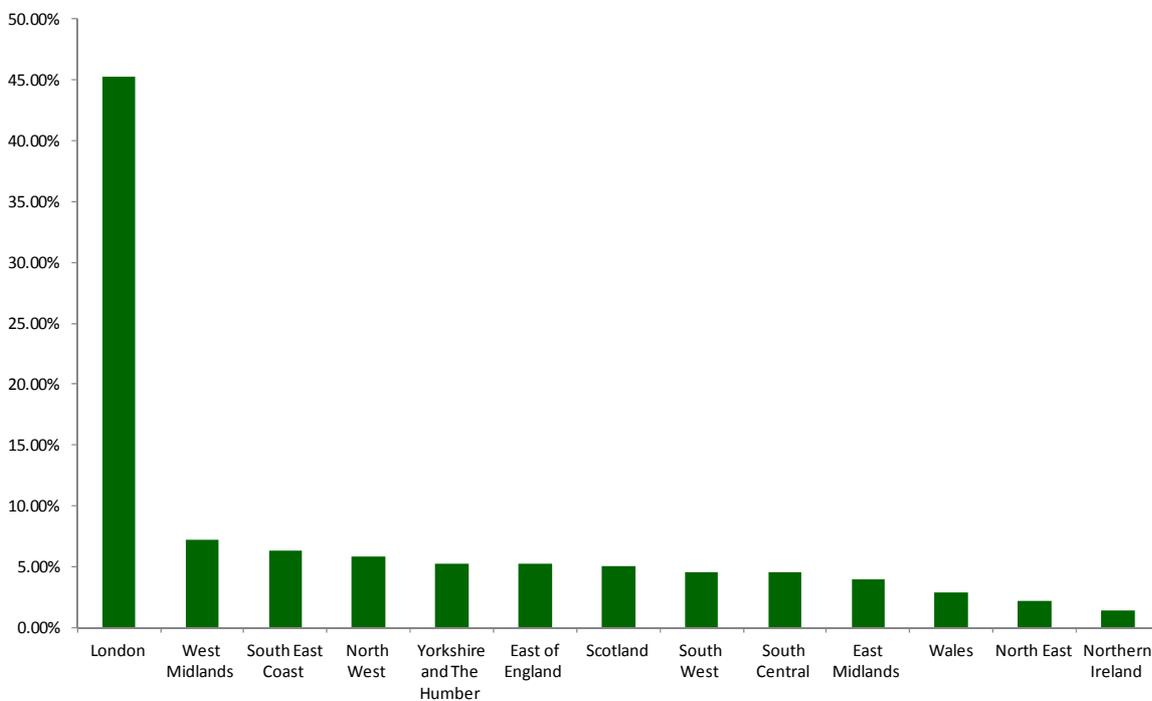
Chart 3 : Proportion of new HIV diagnoses by ethnicity and gender, UK 2011

The HPA has published a short report examining the issue of Black African communities in the UK being disproportionately affected by HIV. The report is available online:

http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1225441603957

2.3 Region

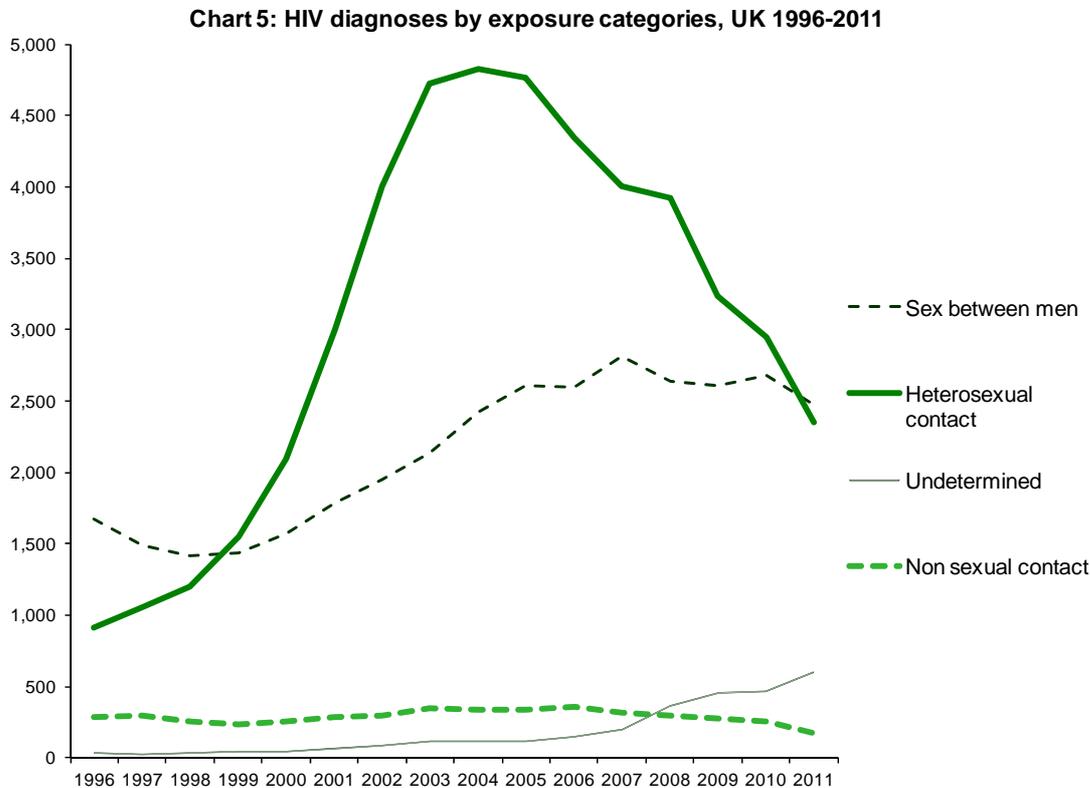
The distribution of HIV diagnoses by English region, and in the other UK countries is shown in chart 4. By a wide margin, London accounts for the largest proportion of HIV diagnoses.

Chart 4: Regional distribution of new HIV diagnoses, UK 2011

3 Exposure to HIV

3.1 Transmission routes

Sexual contact is by far the most common HIV transmission route: in 2011, 86% of newly diagnosed cases were acquired in this way. The chart below compares the number of HIV diagnoses arising from heterosexual, male homosexual, and non-sexual exposure.



Heterosexual sex was the most common cause of HIV infection in the UK between 1999 and 2010. HIV cases attributable to heterosexual contact peaked in 2004, at 4,829 representing 63% of all new diagnoses. Since then the number attributable to heterosexual contact has fallen to 2,359 cases in 2011, representing 42% of all diagnoses.

The highest number of HIV cases acquired through sex between men was recorded in 2007, but the proportion of cases attributed to male homosexual contact was still lower than that observed for heterosexual contact.

In 2011, although the number of cases acquired through sex between men fell slightly, the proportion of cases (44%) meant that male homosexual contact was the most common cause of HIV infection. This is the first time since 1999 that male homosexual sex was the most common cause of HIV infection in the UK.

Historically, the primary exposure risk for HIV was homosexual male contact: in years prior to 1995, heterosexual contact was the cause of just 18% of all HIV infections, whilst sex between men was the cause of 63% of cases.

The importance of injecting drug use as a means of HIV transmission has also declined since 1996, from 196 cases to 102.

Blood products in the UK have been routinely screened for HIV since 1985, and are destroyed if it is detected. All blood products (including US imports) in the UK have been 'virtually HIV-free' since 1988³ and HIV acquired in this manner is correspondingly extremely rare (around 1.5% of all diagnoses since 1996); it most commonly occurs in individuals treated with infected blood abroad.

3.2 Exposure abroad

A significant proportion of individuals diagnosed with HIV in the UK were originally infected abroad. The chart below shows trends in HIV diagnoses in the UK following presumed heterosexual exposure outside the UK. Reliable data are not available for other means of exposure.

**Chart 6: HIV diagnoses from heterosexual exposure abroad
1996-2011**



Adjusting for cases where origin of infection has not yet been determined, around two thirds of HIV cases from heterosexual exposure in 2011 were acquired abroad; this is a decline from a peak of over 85% between 1999 and 2004.

³ The Archer Inquiry on NHS Supplied Contaminated Blood and Blood Products

4 Prevalence of HIV

4.1 Diagnosed HIV prevalence

HIV prevalence is estimated using the Survey of Prevalent HIV Infections Diagnosed (SOPHID), a cross-sectional survey of all individuals with diagnosed HIV infection who attend HIV-related care within the NHS in England, Wales, and Northern Ireland (E, W & NI) within a calendar year.

In 2011, there were 73,659 individuals in the UK accessing HIV care. Risk factors for these existing cases are broadly similar to those for new diagnoses, with around 43% of individuals acquiring their infection through male homosexual sex, and 34% being of black African ethnicity.

As with the diagnosis statistics in Section 2, it is difficult to make inferences about *incidence* of HIV (the number of new cases in, say, a year) from the SOPHID data. In particular, prevalence over time may be observed to rise even as incidence remains the same for two reasons: firstly, the availability of HAART⁴ (drugs which slow down the rate at which HIV is able to reproduce) from the mid-1990s onwards has led to dramatic improvements in the life expectancy of people with HIV in the UK; secondly, since the SOPHID data deals only with *diagnosed* HIV, rising prevalence may reflect a fall in the number of undiagnosed cases.

4.2 Total and undiagnosed HIV prevalence

Some individuals infected with HIV and living in the UK have not yet been diagnosed. Overall prevalence of HIV must therefore take the form of an estimate. This is derived from a number of sources, including SOPHID, data on previously undiagnosed HIV infections seen at GUM clinics, and the National Survey of Sexual Attitudes and Lifestyles. In 2010, the HPA estimated that 91,500 individuals in the UK were living with HIV, a crude prevalence rate of 1.5 per 1,000 individuals. Given that there are 73,659 individuals accessing treatment, the implication of this estimate is that around 20% of individuals with HIV are unaware of their infection.

HIV prevalence is high among MSM in the UK. Assuming that 3.4% of the adult male population are MSM, one in 20 gay men are living with HIV nationally (47 per 1,000 population), and one in 11 in London (83 per 1,000).

Black African men and women living in the UK also have a high HIV prevalence, at 47 per 1,000 population (England and Wales only). Among black African men, HIV prevalence was 31 per 1,000 population, and among black African women it was 64 per 1,000 population.

⁴ Highly active anti-retroviral therapy

5 International data⁵.

Global surveillance of HIV and AIDS is undertaken jointly by UNAIDS and WHO. Detailed country-level epidemiological data is available

at:<http://www.unaids.org/en/KnowledgeCentre/HIVData/Epidemiology/epifactsheets.asp>

In addition, through their adoption of the 2001 Declaration of Commitment on HIV/AIDS, UN Member States committed themselves to regularly report on their progress in responding to HIV to the General Assembly. At the 2011 United Nations General Assembly High Level Meeting on AIDS that took place in June in New York, Member States adopted a new Political Declaration which contained new targets to effectively respond to the AIDS epidemic. Official reports submitted by countries to the UNAIDS Secretariat for the monitoring of progress towards the targets set in 2011 are available at:

<http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries/>

HIV and AIDS are both pandemic according to WHO definitions. HIV prevalence in the global population is estimated at 34.2 million (0.8% of all individuals), of whom 2 million are children. An estimated 1.7 million from died from AIDS in 2011

Globally, the percentage of people living with HIV has remained steady since 2000, although numbers of people living with HIV has increased due to the higher life expectancy offered by anti retroviral therapies.

The UK has an HIV prevalence similar to other Western European countries, such as Ireland (2 per 1,000), the Netherlands (2 per 1,000), and Germany (1 per 1,000), and lower than Eastern and Southern European countries such as Latvia (7 per 1,000), Portugal (6 per 1,000) and France and Spain (4 per 1,000), where the epidemic is driven primarily by injecting drug use.

The UK prevalence rate gives it a rank of 91 out of the 123 countries contained in the UN AIDSinfo database. A rank of 1 is assigned to the country with the highest prevalence, in 2011 this was Swaziland (259 per 1,000).

Table 1 summarizes HIV prevalence and AIDS mortality by world region for 2001 and 2009, with regions ranked by the percentage prevalence of HIV in adults in 2009. Just over two-thirds of HIV-infected individuals live in sub-Saharan Africa, where the prevalence rate is 5%, compared with 0.8% globally and 0.2% in the United Kingdom. Three-quarters of all AIDS-related deaths occurred in sub-Saharan Africa.

Finally, table 2 summarizes HIV and AIDS data from 2001 and 2009 for the 20 countries with the highest prevalence rates. All of these countries are in sub-Saharan Africa. Outside of this region, the Bahamas had the highest HIV prevalence in 2009, with a rate of 3%.

⁵ All figures in Section 5 taken from UNAIDS *AIDS info database*

Table 1: summary figures on HIV prevalence and AIDS mortality, world regions, 2001 and 2009

| Regions | | | | | | |
|---------------------------------|----------------------------------|----------------------------------|--|--|---|---|
| World Region | Estimated numbers with HIV, 2001 | Estimated numbers with HIV, 2009 | Adult (15-49) prevalence percent, 2001 | Adult (15-49) prevalence percent, 2009 | Deaths from AIDS in adults and children, 2001 | Deaths from AIDS in adults and children, 2009 |
| Sub-Saharan Africa | 20,300,000 | 22,500,000 | 5.9 | 5.0 | 1,400,000 | 1,300,000 |
| Caribbean | 240,000 | 240,000 | 1.1 | 1.0 | 19,000 | 12,000 |
| Eastern Europe and Central Asia | 760,000 | 1,400,000 | 0.4 | 0.8 | 18,000 | 76,000 |
| North America | 1,200,000 | 1,500,000 | 0.4 | 0.5 | 30,000 | 26,000 |
| Latin America | 1,100,000 | 1,400,000 | 0.5 | 0.5 | 53,000 | 58,000 |
| Oceania | 29,000 | 57,000 | 0.2 | 0.3 | <1000 | 1,400 |
| South and South-East Asia | 3,800,000 | 4,100,000 | 0.4 | 0.3 | 230,000 | 260,000 |
| Western and Central Europe | 630,000 | 820,000 | 0.2 | 0.2 | 7,300 | 8,500 |
| North Africa and Middle East | 180,000 | 460,000 | 0.1 | 0.2 | 8,300 | 24,000 |
| East Asia | 350,000 | 770,000 | 0.1 | 0.1 | 15,000 | 36,000 |
| Global | 28 600 000 | 33 300 000 | 0.8 | 0.8 | 2 000 000 | 1 700 000 |

Table 2: summary figures on HIV prevalence and AIDS mortality for the 20 most heavily HIV-infected countries, 2001 and 2009

| Countries | | | | | | |
|--------------------------|----------------------------------|----------------------------------|--|--|---|---|
| Country | Estimated numbers with HIV, 2001 | Estimated numbers with HIV, 2009 | Adult (15-49) prevalence percent, 2001 | Adult (15-49) prevalence percent, 2009 | Deaths from AIDS in adults and children, 2001 | Deaths from AIDS in adults and children, 2009 |
| Swaziland | 130,000 | 180,000 | 23.6 | 25.9 | 6,800 | 7,000 |
| Botswana | 270,000 | 320,000 | 26.3 | 24.8 | 15,000 | 5,800 |
| Lesotho | 240,000 | 290,000 | 24.5 | 23.6 | 14,000 | 14,000 |
| South Africa | 4,600,000 | 5,600,000 | 17.1 | 17.8 | 220,000 | 310,000 |
| Zimbabwe | 1,700,000 | 1,200,000 | 23.7 | 14.3 | 130,000 | 83,000 |
| Zambia | 830,000 | 980,000 | 14.3 | 13.5 | 68,000 | 45,000 |
| Namibia | 160,000 | 180,000 | 16.1 | 13.1 | 8,100 | 6,700 |
| Mozambique | 850,000 | 1,400,000 | 9.4 | 11.5 | 43,000 | 74,000 |
| Malawi | 860,000 | 920,000 | 13.8 | 11.0 | 68,000 | 51,000 |
| Uganda | 980,000 | 1,200,000 | 7 | 6.5 | 89,000 | 64,000 |
| Kenya | 1,500,000 | 1,500,000 | 8.4 | 6.3 | 120,000 | 80,000 |
| Tanzania | 1,400,000 | 1,400,000 | 7.1 | 5.6 | 110,000 | 86,000 |
| Cameroon | 480,000 | 610,000 | 5.5 | 5.3 | 31,000 | 37,000 |
| Gabon | 36,000 | 46,000 | 5.3 | 5.2 | 2,000 | 2,400 |
| Equatorial Guinea | 5,700 | 20,000 | 1.9 | 5.0 | <500 | <1000 |
| Central African Republic | 180,000 | 130,000 | 8.9 | 4.7 | 15,000 | 11,000 |
| Nigeria | 2,700,000 | 3,300,000 | 3.8 | 3.6 | 210,000 | 220,000 |
| Chad | 140,000 | 210,000 | 3.2 | 3.4 | 8,900 | 11,000 |
| Congo, Republic of | 69,000 | 77,000 | 3.8 | 3.4 | 5,800 | 5,100 |
| Côte d'Ivoire | 630,000 | 450,000 | 6.5 | 3.4 | 51,000 | 36,000 |

6 Public awareness and opinion in the UK

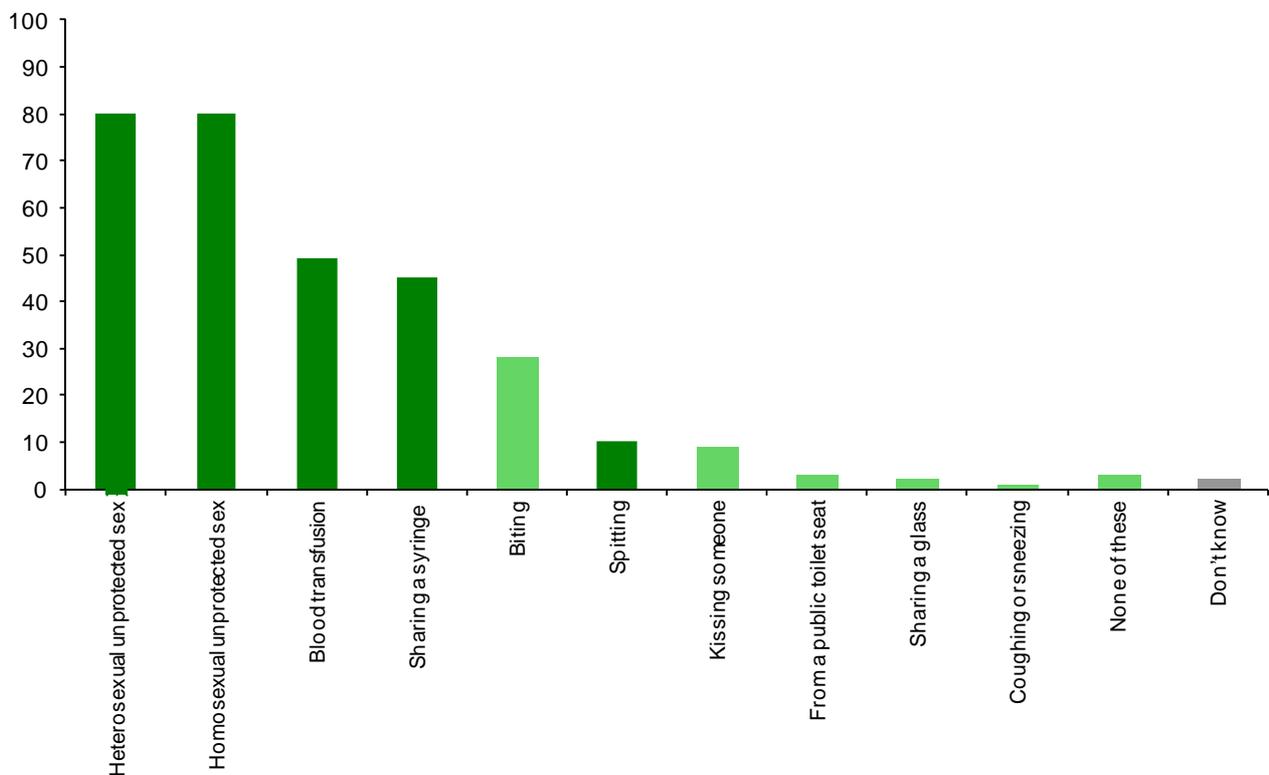
A 2010 Ipsos MORI survey commissioned by the National Aids Trust investigated the knowledge and attitudes of the British public towards HIV and AIDS⁶. The following section summarises some results from this

6.1 Knowledge of how HIV is transmitted

The chart below shows how respondents answered when asked to identify from a list the correct ways by which HIV can be transmitted. It was more typical for individuals to be ignorant of a viable transmission route, than to specify a non-viable one.

While four-fifths of the British public are aware of the main method of transmitting HIV - sex without a condom between- , almost a fifth mention at least one incorrect method of transmission (such as spitting, sharing a glass, or coughing/ sneezing).

Chart 7: Proportion of sample 'believing' in various transmission routes for HIV, 2007 survey data, UK



6.2 Attitudes to HIV sufferers

The Ipsos MORI survey also ran in 2007 and some changes were observed in 2010 in towards HIV and people living with HIV. In 2010, there was an increase in belief that people with HIV deserve the same level of support and respect as those with cancer (from 70% in 2007 to 74% in 2010) and in the belief that most people with HIV can work like anyone else: 71% in 2007 to 73% in 2010.

However, there was a decrease in the percentage of those would feel comfortable working with a colleague who was HIV positive (70% in 2007 to 67% in 2010) or who believe relationships with a family member or neighbour would not be damaged if they had HIV.

⁶ [Public Attitudes towards HIV, 2010](#)