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Immunisation

Annual report from the sentinel surveillance study of blood borne virus testing in England: data for January to December 2015

This report provides summary data for individuals who were first reported to the sentinel surveillance programme during 2015. Sections 1 to 7 describes testing and demographic information for individuals tested by venepuncture for hepatitis A to E, HIV, and HTLV.

The sentinel surveillance of blood borne virus testing began in 2002, with the aim of supplementing the routine surveillance of hepatitis. Information on the testing carried out in participating centres is collected irrespective of test result and can therefore also be used as a basis for estimating prevalence among those tested. These data have enhanced our knowledge and understanding of hepatitis testing, in terms of who is being tested and from which service types individuals are accessing testing, and also in interpreting trends in the number of positive individuals identified over time. In 2015, sentinel surveillance captured front-line testing for hepatitis A, B, C and HIV among all PHECs in England, covering approximately 40% of the population, and over 80% of the population from all 15 PHECs tested for hepatitis D, E and HTLV.

The supplementary tables referred to in this report are available on the GOV.UK website page "Sentinel surveillance of blood borne virus testing in England: 2015".

1. Hepatitis A IgM testing

In 2015, 21 participating centres supplied hepatitis A-specific IgM antibody (anti-HAV IgM) testing data (a marker of acute infection). Overall 28,235 individuals were tested for anti-HAV IgM, of whom 134 (0.5%) tested positive (Supplementary Table 1). The age and gender of individuals tested was well reported (>99.7% complete). Where known, a similar number of males (53.9%) and females were tested. Half of all individuals tested and one-third of those who tested positive were aged between 25 and 54 years old (Supplementary Table 2). The median age of individuals undergoing testing was 47 years (IQR 31 – 63) whereas the median age of individuals testing positive was 31 years (IQR 17 – 63). As seen in previous years, the greatest proportion positive was among children aged 1-14 years (4.2%).

The type of service which requested the hepatitis test was identified using the record location of the requestor (Table 1). Where known (n=28,144), general practice tested the greatest proportion of individuals for anti-HAV IgM (54.5%), with a further 17.7% tested in other known hospital wards, and 11.1% tested in general medical surgical wards. The highest proportion of positive tests were from unspecified wards (6.1%), paediatric services (2.8%), and accident and emergency (1.6%).

A combination of self-reported ethnicity and name analysis software was used to classify most individuals tested for anti-HAV IgM as belonging to one of four broad ethnic groups (n=27,609) (Supplementary table 3). Where known, the majority of individuals were classified as being of white or white British ethnic origin (83.8%), a further 11.9% were classified as Asian or Asian British origin, 2.7% were classified as other and/or mixed ethnic origin, and 1.6% were classified as black or black British origin. The greatest proportion positive was among individuals of Asian or Asian British origin (1.0%).

Table 1. Number of individuals tested, and testing positive for anti-HAV IgM in participating centres by service type, January – December 2015*

Service type	Number tested	Number positive (%)
Primary Care		
Accident and emergency	1,089	17 (1.6)
Drug dependency services	66	0 (0.0)
General practitioner	15,336	38 (0.2)
GUM clinic	228	0 (0.0)
Occupational health	31	0 (0.0)
Prison services	115	0 (0.0)
Total primary care	16,865	55 (0.3)
Secondary Care		
Antenatal	473	2 (0.4)
Fertility services	14	0 (0.0)
General medical / surgical departments	3,117	18 (0.6)
Obstetrics and gynaecology	229	1 (0.4)
Other ward type (known service)†	4,980	12 (0.2)
Paediatric services	747	21 (2.8)
Renal	237	2 (0.8)
HIV	30	0 (0.0)
Specialist infectious disease services	1,159	4 (0.3)
Unspecified ward§	293	18 (6.1)
Total secondary care	11,279	78 (0.7)
Unknown#	91	1 (1.1)
Total	**28,235**	**134 (0.5)**

* Excludes reference testing and testing from hospitals referring all samples. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

† Other ward types includes cardiology, coroner, dermatology, haematology, ultrasound, x-ray.

§ These are hospital services which are currently being investigated to identify specific service type, and may include any of the secondary care services mentioned above.

These services are currently being investigated to identify specific service type, where possible.

2. Hepatitis B surface antigen testing

Sentinel surveillance collects data on testing for hepatitis B surface antigen (HBsAg). All pregnant women in the UK are offered hepatitis B screening as part of their antenatal care. Data from the test request location and freetext clinical details field accompanying the test request were reviewed to distinguish individuals tested for HBsAg as part of routine antenatal screening (section 2a) from those tested in other settings and for other reasons (section 2b). It is possible that some women undergoing antenatal screening may not be identified as such and may therefore be included in section 2b as non-antenatal testing.

a. Antenatal HBsAg screening

In 2015, 90,967 women aged between 12 and 49 years old were identified as undergoing antenatal screening for HBsAg, representing 30.4% of all individuals tested for HBsAg in participating sentinel centres (Supplementary Table 4). Overall 315 (0.3%) of these women tested positive. The median age of women tested was 29 years (IQR 25– 33) and the median age of women testing positive was 28 years (IQR 26 – 33). A HBeAg result was available for all HBsAg positive women (305), and of these, 8.5% were HBeAg positive (Table 2).

Most women who underwent antenatal screening were classified as belonging to one of four broad ethnic groups (n= 88,882) (Table 2). The majority of individuals were classified as being of white or white British ethnic origin (77.7%), a further 16.2% were classified as Asian or Asian British origin, 3.9% were classified as other and/or mixed ethnic origin, and 2.1% were classified as black or black British origin. The proportion testing positive was higher among women of black or black British origin and other and/or

mixed origin (1.5% and 1.3% respectively) than women of Asian or Asian British origin and white or white British origin (0.4% and 0.2% respectively).

The proportion of HBeAg positive women also differed by ethnic group with 25.0% of other and/or mixed ethnic origin women testing positive, 12.5% of Asian or Asian British women, 6.9% of black or black British women and 2.9% of white or white British women.

Table 2. Number of antenatal women tested and testing positive for HBsAg, and number of HBsAg positive women tested and testing positive for HBeAg by ethnic group, January – December 2015*

Ethnic group	Number tested HBsAg	Number positive (%)	Number HBsAg positive tested for HBeAg	% HBsAg positive tested	Number HBeAg positive (%)
Asian or Asian British origin	14,438	64 (0.4)	64	100.0	8 (12.5)
Black or black British origin	1,884	29 (1.5)	29	100.0	2 (6.9)
Other and/or mixed origin	3.495	45 (1.3)	44	97.8	11 (25.0)
White or white British origin	69,065	143 (0.2)	136	95.8	4 (2.9)
Unknown ethnic origin	2,085	34 (1.6)	32	94.1	1 (3.1)
Total	**90,967**	**315 (0.3)**	**305**	97.1	**26 (8.5)**

* Excludes dried blood spot testing, oral fluid testing, reference testing and testing from hospitals referring all samples. Only women aged 12-49 years old are included. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

b. Non-antenatal HBsAg testing

In 2015, 208,375 individuals were tested at least once for HBsAg, excluding antenatal screening, in 21 participating sentinel centres. Overall, 2,363 (1.1%) of individuals tested positive, with the highest proportion of positive tests in the West Midlands (3.0%) (Supplementary Table 5). This may reflect more targeted testing of risk groups and/or genuinely higher prevalence of hepatitis B in people being tested in this PHEC.

The age and gender of individuals tested for HBsAg was well reported (>99.4% complete). Where known, an equal numbers of males (50.1%) and females were tested (Supplementary Table 6). The number of females tested may include some undergoing routine antenatal screening who could not be identified as such from the information provided. Males had a greater proportion testing positive compared to females (1.5% vs 0.8% $p<0.001$). More than two fifths of all individuals tested and three fifths of individuals testing positive were aged between 25 and 44 years old. The median age of individuals tested and positive were similar with 36 years (IQR 26 – 52) and 35 years (IQR 28 – 46) respectively.

Where known (n=208,027), general practice tested the greatest proportion of individuals for HBsAg (33.1%), with a further 17.5% tested in GUM clinics, and 17.0% tested in other known hospital wards (Table 3). The highest proportion of positive tests were among unspecified wards, HIV specialist services and in specialist liver services (5.9%, 2.3% and 1.8% respectively).

Over three-quarters of individuals tested for HBsAg were classified as belonging to one of four broad ethnic groups (n=166,481) (Table 4). The majority of individuals were classified as being of white or white British ethnic origin (78.5%), a further 15.2% were classified as Asian or Asian British origin, 3.8% were classified as other and/or mixed ethnic origin, and 2.5% were classified as black or black British origin. Most individuals of unknown ethnic origin were tested by GUM clinics, from which only minimal demographic data are available, resulting in poor ethnic classification. The proportion positive varied by ethnic group; 5.3% of individuals of other and/or mixed ethnicity tested positive compared to 5.1% of black or black British origin individuals, 1.7% of Asian or Asian British origin individuals and 0.6% of white or white British origin individuals.

Table 3. Number of individuals tested, and testing positive for HBsAg in participating centres by service type (excluding antenatal testing), January – December 2015*

Service type	Number tested	Number positive (%)
Primary Care		
Accident and emergency	3,891	45 (1.2)
Drug dependency services	723	1 (0.1)
General practitioner	68,754	1,020 (1.5)
GUM clinic	36,477	438 (1.2)
Occupational health	12,107	50 (0.4)
Prison services	2,318	30 (1.3)
Total primary care	124,270	1,584 (1.3)
Secondary Care		
Fertility services	9,161	46 (0.5)
General medical / surgical departments	9,938	93 (0.9)
Obstetrics and gynaecology	11,467	27 (0.2)
Other ward type (known service)†	35,385	266 (0.8)
Paediatric services	3,020	12 (0.4)
Renal	4,966	28 (0.6)
Specialist HIV services	438	10 (2.3)
Specialist liver services	6,348	116 (1.8)
Unspecified ward§	3,034	179 (5.9)
Total secondary care	83,757	777 (0.9)
Unknown#	348	2 (0.6)
Total	**208,375**	**2,363 (1.1)**

* Excludes dried blood spot, oral fluid, reference testing and testing from hospitals referring all samples. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

† Other ward types includes cardiology, coroner, dermatology haematology, ultrasound, x-ray.

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These services are currently being investigated to identify specific service type, where possible

Table 4. Number of individuals tested, and testing positive for HBsAg in participating centres by ethnic group (excluding antenatal testing), January – December 2015*

Ethnic group	Number tested	Number positive (%)
Asian or Asian British origin	25,283	433 (1.7)
Black or black British origin	4,176	214 (5.1)
Other and/or mixed origin	6,368	339 (5.3)
White or white British origin	130,654	775 (0.6)
Unknown ethnic origin	41,894	602 (1.4)
Total	**208,375**	**2,363 (1.3)**

* Excludes dried blood spot, oral fluid, reference testing and testing from hospitals referring all samples. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

3. Hepatitis C antibody testing

Sentinel surveillance collects data on testing for hepatitis C-specific antibodies (anti-HCV). It is important to note that no laboratory methods are currently available to distinguish between acute or chronic hepatitis C virus infections. Therefore, positive anti-HCV results do not therefore necessarily represent incident infections.

In 2015, 176,471 individuals were tested at least once for anti-HCV in 21 participating sentinel centres. Overall, 3,035 (1.7%) of individuals tested positive. This varied by PHEC with the highest proportion of positive tests were from the West Midlands (3.7%) (Supplementary Table 7). This may reflect more targeted testing of risk groups and/or genuinely higher prevalence of hepatitis C in people being tested in this PHEC. Of those individuals testing positive for anti-HCV 75.3% were tested for HCV RNA by PCR, of whom 64.5% tested positive (n=1,473). Of the PCR positive individuals 52.7% had a HCV genotype recorded; 45.5% were genotype 1, with a further 45.2% genotype 3.

Age and gender were well reported (>99.4% complete). Where known, more males (55.3%) were tested than females (Supplementary Table 8). More than two fifths of all individuals tested and around half testing positive were aged between 25 and 44 years old. A greater proportion of males tested positive compared to females (2.1% vs 1.2% respectively, p<0.001). The median age of those tested was 38 years (IQR 28 – 54 years), whereas the median age of those tested positive was 42 years (IQR 33 – 52 years).

Where known (n=176,245), general practice tested the greatest proportion of individuals for anti-HCV (32.3%), with a further 18.7% tested in other known hospital wards and 16.5% tested in GUM clinics (Table 5). The highest proportion of positive tests were among unspecified wards (14.3%), specialist drug (10.0%) and prison services (6.7%).

Table 5. Number of individuals tested, and testing positive for anti-HCV in participating centres by service type, January – December 2015*

Service type	Number tested	Number positive (%)
Primary Care		
Accident and emergency	3,934	78 (2.2)
Drug dependency services	743	74 (10.0)
General practitioner	56,982	936 (1.6)
GUM clinic	29,077	484 (1.7)
Occupational health	10,053	19 (0.2)
Prison services	3,265	220 (6.7)
Total primary care	104,054	1,811 (1.7)
Secondary Care		
Antenatal	1,563	32 (2.0)
Fertility services	9,240	33 (0.4)
General medical / surgical departments	9,380	166 (1.8)
Obstetrics and gynaecology	2,357	13 (0.6)
Other ward type (known service)†	33,034	378 (1.1)
Paediatric services	2,241	21 (0.9)
Renal	4,913	41 (0.8)
Specialist HIV services	397	15 (3.8)
Specialist liver services	6,278	113 (1.8)
Unspecified ward§	2,788	399 (14.3)
Total secondary care	72,191	1,211 (1.7)
Unknown#	226	13 (5.8)
Total	**176,471**	**3,035 (1.7)**

* Excludes dried blood spot, oral fluid, reference testing and testing from hospitals referring all samples. Individuals aged less than one year are excluded since positive tests in this age group may reflect the presence of passively-acquired maternal antibody rather than true infection. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

† Other ward types includes cardiology, coroner, dermatology haematology, ultrasound, x-ray

§ These are hospital services which are currently being investigated to identify specific service type, and may include any of the secondary care services mentioned above.

These services are currently being investigated to identify specific service type, where possible

Most individuals tested for anti-HCV were classified as belonging to one of four broad ethnic groups (n=142,268) (Table 6). The majority of individuals were classified as being of white or white British ethnic origin (80.1 %), a further 14.2% were classified as Asian or Asian British origin, 3.4% were classified as other and/or mixed ethnic origin, and 2.3% were classified as black or black British origin. The proportion positive varied slightly by ethnic group: 1.6% of individuals of Asian or Asian British origin and white or white British origin tested positive, compared to 1.2% of other or mixed ethnic origin individuals and 0.7% of black or black British origin individuals.

Table 6. Number of individuals tested, and testing positive for anti-HCV in participating centres by ethnic group, January – December 2015*

Ethnic group	Number tested	Number positive (%)
Asian or Asian British origin	20,154	326 (1.6)
Black or black British origin	3,343	25 (0.7)
Other and/or mixed origin	4,863	58 (1.2)
White or white British origin	113,908	1,857 (1.6)
Unknown ethnic origin	34,203	769 (2.2)
Total	**176,471**	**3,035 (1.7)**

* Excludes dried blood spot testing, oral fluid testing, reference testing and testing from hospitals referring all samples. Excludes individuals aged less than one year, in whom positive tests may reflect the presence of passively-acquired maternal antibody rather than true infection. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

4. Hepatitis D total antibody testing

Sentinel surveillance collects data on testing for hepatitis D-specific total antibody (HDV TA) and A-specific IgM antibody (anti-HAV IgM), a marker of acute hepatitis D infection. Six sentinel laboratories provide hepatitis D testing facilities. Given the small number of tests individuals tested for HDV TA and/or HDV IgM are aggregated, and therefore do not necessarily represent incident infections, and should be interpreted accordingly. Data are shown by region of the requesting service.

In 2015, 2,515 individuals were tested at least once for HDV TA and/or HDV IgM in six participating sentinel centres (Supplementary Table 9). Overall 100 (4.0%) of individuals tested positive, although this varied by PHEC.

The age and gender of individuals tested for hepatitis D was well reported (>98.3% complete). Where known, more males were tested than females (56.4% male). The proportion of males testing positive was significantly greater when compared to females (4.7% vs 2.8%, p=0.01). Three-fifths of all individuals tested and testing positive were aged between 25 and 44 years old. The median age of individuals tested was 35 years (IQR 28 – 45) and the median age of individuals testing positive was 37 years (IQR 29 – 46).

Where known (n=2,513), almost two-thirds (63.1%) of individuals were tested by a hospital which referred all hepatitis D samples to a sentinel centre. In these cases the original service that initially requested the test could not be determined.

Most individuals tested for hepatitis D were classified as belonging to one of four broad ethnic groups (n=2,071). Almost a half of individuals were classified as being of white or white British ethnic origin (47.0%), a further 23.5% were classified as Asian or Asian British ethnic origin, 19.3% were classified as other and/or mixed origin, and 10.2% were classified as black or black British origin (Table 7). The proportion positive varied by ethnic group; 4.9% of Asian or Asian British origin tested positive compared to 3.8% of individuals of black or black British ethnic origin individuals and white or white British origin individuals and 2.5% of other or mixed ethnic origin individuals.

Table 7. Number of individuals tested, and testing positive, for HDV-TA and/or HDV IgM in participating centres by ethnic group, January – December 2015*

Ethnic group	Number tested	Number positive (%)
Asian or Asian British origin	487	24 (4.9)
Black or black British origin	211	8 (3.8)
Other and/or mixed origin	400	10 (2.5)
White or white British origin	973	37 (3.8)
Unknown ethnic origin	444	21 (4.7)
Total	**2,515**	**100 (4.0)**

* Excludes reference testing. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

5. Hepatitis E IgM testing

Sentinel surveillance collects data on testing for hepatitis E-specific IgM antibody (anti-HEV IgM), a marker of acute hepatitis A infection. Six sentinel laboratories provide anti-HEV IgM testing facilities.

In 2015, 12,396 individuals were tested at least once for anti-HEV IgM in six participating sentinel centres (Supplementary Table 10). This represents a 8.9% increase in the number of individuals tested in 2015 compared to that reported in 2014. This increase in testing is likely to reflect a substantial increase in confirmed HEV cases since 2010. Overall, 831 (6.7%) of individuals tested positive, although this varied by PHEC with the highest proportion of positive tests in the North West (14.6%).

The age and gender of individuals tested for anti-HEV IgM was well reported (>99.5% complete). Where known, a similar number of males and females were tested (53.0% male). A greater proportion of males tested positive compared to females (7.7 % vs. 5.6% respectively, $p<0.001$). Over two-fifths of all individuals tested and a third of individuals testing positive were aged between 25 and 54 years old. The median age of individuals tested was 51 years (IQR 34 – 65) and the median age of individuals testing positive was 59 years (IQR 46 – 69).

Overall 10.4% (353/3,397) of males aged 50 or over tested positive for HEV, compared to 4.9% (153/3,144) among those under the age of 50. A similar pattern was seen among females, where 7.2% (220/3,043) of females aged 50 or over tested positive compared to 3.8% (104/2,755) among those under the age of 50.

Where known (n=12,373), most individuals were tested by a hospital which referred all anti-HEV IgM samples to a sentinel centre (60.1%). In these cases the original service that initially requested the test could not be determined. Where the test was not a referral, the highest proportion of positives tested through general medical surgical (9.9%) and specialist renal services (9.7%).

Most individuals tested for anti-HEV IgM were classified as belonging to one of four broad ethnic groups (n=11,822). The majority of individuals were classified as being of white or white British ethnic origin (83.0%), a further 13.5% were classified as Asian or Asian British origin, 2.1% were classified as other and/or mixed ethnic origin, and 1.3% were classified as black or black British origin (Table 8). The proportion positive varied by ethnic group; 7.3% of individuals of white or white British origin tested positive compared to 4.5% of Asian or Asian British origin individuals and 2.0% of other or mixed ethnic origin individuals and 0.7% of black or black British origin individuals.

Table 8. Number of individuals tested, and testing positive, HEV IgM in participating centres by ethnic group, January – December 2015

Ethnic group	Number tested	Number positive (%)
Asian or Asian British origin	1,600	72 (4.5)
Black or black British origin	153	1 (0.7)
Other and/or mixed origin	254	5 (2.0)
White or white British origin	9,815	721 (7.3)
Unknown ethnic origin	574	32 (5.6)
Total	**12,396**	**831 (6.7)**

6. HIV testing

Sentinel surveillance collects data on testing for HIV. All pregnant women in the UK are offered HIV screening as part of their antenatal care. Data from the test request location and free-text clinical details field accompanying the test request were reviewed to distinguish individuals tested for HIV as part of routine antenatal screening (section 6a) from those tested in other settings and for other reasons (section 6b). It is possible that some women undergoing antenatal screening may not be identified as such and may therefore be included in section 6b as non-antenatal testing.

a. Antenatal HIV screening

In 2015, 65,327 women aged between 16 and 49 years old were identified as undergoing antenatal screening for HIV, representing 21.3% of all individuals tested for HIV in participating sentinel centres (Supplementary Table 11). Overall, 101 (0.2%) of these women tested positive. The median age of women tested was 29 years (IQR 25 – 33) and the median age of women testing positive was 33 years (IQR 26 – 40).

b. Non-antenatal HIV testing

In 2015, 241,218 adults aged 16 years old and over were tested at least once for HIV, excluding antenatal screening, in 15 participating sentinel centres. Overall, 2,107 (0.9%) of individuals tested positive, although this varied by PHEC with the highest proportion of positive tests in the South West (8.3%) (Supplementary Table 12), although few individuals were tested from this PHEC.

The age and gender of adults tested for HIV was well reported (>99.1% complete). Where known, similar numbers of females (51.9%) were tested compared to males (Supplementary Table 13). The number of females tested may include some undergoing routine antenatal screening who could not be identified as such from the information provided. A greater proportion of males tested positive compared to females (1.4% vs 0.4% p<0.001). Half of all individuals tested and three-fifths of those testing positive were aged between 25 and 34 years old. The median age of individuals tested was 30 years (IQR 23 – 41) and the median age of individuals testing positive was 36 years (IQR 28 – 46).

Where known (n=240,757), GUM clinics tested the greatest proportion of individuals for HIV (49.3%), with a further 18.9% tested in general practice, and 10.8% tested in other known hospital wards (Table 9). The highest proportion of positive tests were among specialist HIV services, unspecified wards and specialist liver services (31.9%, 7.1% and 1.6% respectively).

Table 9. Number of adults (16+ years old) tested and testing positive for HIV in participating centres by service type (excluding antenatal testing), January – December 2015*†.

Service type	Number tested	Number positive (%)
Primary Care		
Accident and emergency	3,271	46 (1.4)
Drug dependency services	341	1 (0.3)
General practitioner	45,489	167 (0.4)
GUM clinic	118,620	1,287 (1.1)
Occupational health	8,411	11 (0.1)
Prison services	2,481	15 (0.6)
Pharmacy	2	0 (0.0)
Total primary care	178,613	1,527 (0.9)
Secondary Care		
Fertility services	8,932	21 (0.2)
General medical / surgical departments	8,729	81 (0.9)
Obstetrics and gynaecology	6,318	8 (0.1)
Other ward type (known service)†	26,115	148 (0.6)
Paediatric services	1,049	3 (0.3)
Renal	3,335	16 (0.5)
Specialist HIV services	138	44 (31.9)
Specialist liver services	5,026	78 (1.6)
Unspecified ward§	2,500	177 (7.1)
Total secondary care	62,142	576 (0.9)
Unknown#	461	4 (0.9)
Total	**241,218**	**2,107 (0.9)**

* Excludes individuals aged under 16, antenatal screening, dried blood spot testing, oral fluid testing, reference testing and testing from hospitals referring all samples. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

† Other ward types includes cardiology, coroner, dermatology haematology, ultrasound, x-ray.

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These services are currently being investigated to identify specific service type, where possible

Almost half of adults tested for HIV were classified as belonging to one of four broad ethnic groups (n=114,432) (Table 10). Where known, the majority of individuals were classified as being of white or white British ethnic origin (82.6%), a further 11.2% were classified as Asian or Asian British origin, 3.3% were classified as other and/or mixed ethnic origin, and 2.9% were classified as black or black British origin. Most individuals of unknown ethnic origin were tested in GUM clinics, hence the lack of demographic information. The proportion positive varied by ethnic group; 3.2% of individuals of black or black British origin tested positive compared to 0.7% of other and/or mixed origin individuals and 0.6% of white or white British origin and Asian or Asian British origin individuals.

Table 10. Number of adults (16+ years old) tested, and testing positive for HIV in participating centres by ethnic group (excluding antenatal testing), January – December 2015*

Ethnic group	Number tested	Number positive (%)
Asian or Asian British origin	12,865	73 (0.6)
Black or black British origin	3,264	106 (3.2)
Other and/or mixed origin	3,759	25 (0.7)
White or white British origin	94,544	594 (0.6)
Unknown ethnic origin	126,786	1,309 (1.0)
Total	**241,218**	**2,107 (0.9)**

* Excludes individuals aged under 16, antenatal screening, dried blood spot testing, oral fluid testing, reference testing and testing from hospitals referring all samples. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

7. HTLV testing

In 2015, 6,298 individuals were tested at least once for HTLV-1 specific antibodies in 11 participating sentinel centres (Supplementary Table 14). Overall, 82 (1.3%) of individuals tested positive, although this varied by PHEC with the highest proportion of positive tests in the East Midlands (10.3%), although few individuals were tested from this region.

The age and gender of individuals tested for HTLV-1 was well reported (>94.5% complete) (Supplementary Table 15). Where known, similar numbers of males and females were tested (51.7% male), with a higher proportion of females testing positive compared to males (1.9% vs. 0.8% respectively, p<0.001). Over half of all individuals tested and two-thirds of those testing positive, were aged 45 years and older. The median age of individuals tested was 48 years (IQR 33 – 60) and the median age of individuals testing positive was 55 years (IQR 37 – 69).

Where known (n=6,295), a quarter of individuals were tested by a hospital which referred all HTLV-1 samples to a sentinel centre (26.4%). In these cases the original service that initially requested the test could not be determined.

Most individuals tested for HTLV-1 were classified as belonging to one of four broad ethnic groups (n=5,537) (Table 11). The majority of individuals were classified as being of white or white British ethnic origin (86.3%), a further 9.2% were classified as Asian or Asian British origin, 2.6% were classified as black or black British origin, and 1.9% were classified as other and/or mixed ethnic origin (Table 11). The proportion positive varied by ethnic group; 2.8% of other and/or mixed origin individuals tested positive compared to 1.4% of individuals of black or black British origin, 1.1% of individuals of white or white British origin and 0.8% of Asian or Asian British origin individuals.

Table 11. Number of individuals tested, and testing positive for HTLV in participating centres by ethnic group, January – December 2015*

Ethnic group	Number tested	Number positive (%)
Asian or Asian British origin	512	4 (0.8)
Black or black British origin	142	2 (1.4)
Other and/or mixed origin	107	3 (2.8)
White or white British origin	4,776	54 (1.1)
Unknown ethnic origin	761	19 (2.5)
Total	**6,298**	**82 (1.3)**

* Excludes reference testing. Data are de-duplicated subject to availability of date of birth, soundex and first initial. All data are provisional.

8. Dried blood spot testing

Dried blood spot testing data are not yet complete for 2015.

Reference

1. Judd A, *et al* (2003). Evaluation of a modified commercial assay in detecting antibody to hepatitis C virus in oral fluids and dried blood spots. *J Med Virol.* **71**: 49-55.