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Immunisation

Quarterly report from the sentinel surveillance study of hepatitis, HIV and HTLV testing in England: data for April to June 2014

The sentinel surveillance study of hepatitis testing in England began in 2002 and provides information on trends in testing, individual risk exposures and clinical symptoms, as a supplement to the routine surveillance of hepatitis A, B and C. The study collects information on hepatitis A, B and C testing carried out in participating sentinel centres regardless of test result and therefore can also be used to estimate prevalence in those individuals tested. Data from 24 centres are detailed in this report. In the second quarter (April to June) 2014, sentinel surveillance captured front-line testing for hepatitis A, B, C and HIV among all Public Health England Centres (PHECs) in England.

1. Hepatitis A IgM testing

The sentinel surveillance study collects data on testing for hepatitis A specific IgM antibody (anti-HAV IgM), a marker of acute hepatitis A infection. During the second quarter of 2014, 7,065 individuals were tested at least once for anti-HAV IgM. Overall, 0.3% (n=23) of individuals tested positive, which varied by region. The highest proportion of positive tests were from Cheshire and Merseyside PHEC (1.3%) although few individuals were tested in this region.

Table 1 shows the age group and gender of individuals tested, and testing positive, for anti-HAV IgM. Gender and age were reported for the majority of individuals (>99.8%). As in previous quarters, where available, a higher proportion of males were tested than females (57.1% vs. 42.9%). The mean age of individuals tested was 47.6 years (range 0.01-98.7 years), whereas the mean age of those testing positive was 34.7 years (range 1.9-80.1 years). The largest age group tested were aged 65 and over. The highest overall percentage of individuals testing positive was among those of 1-14 years, although few were tested in this age group.

Table 1. Number of individuals tested, and testing positive, for anti-HAV IgM in participating centres, April - June 2014*.

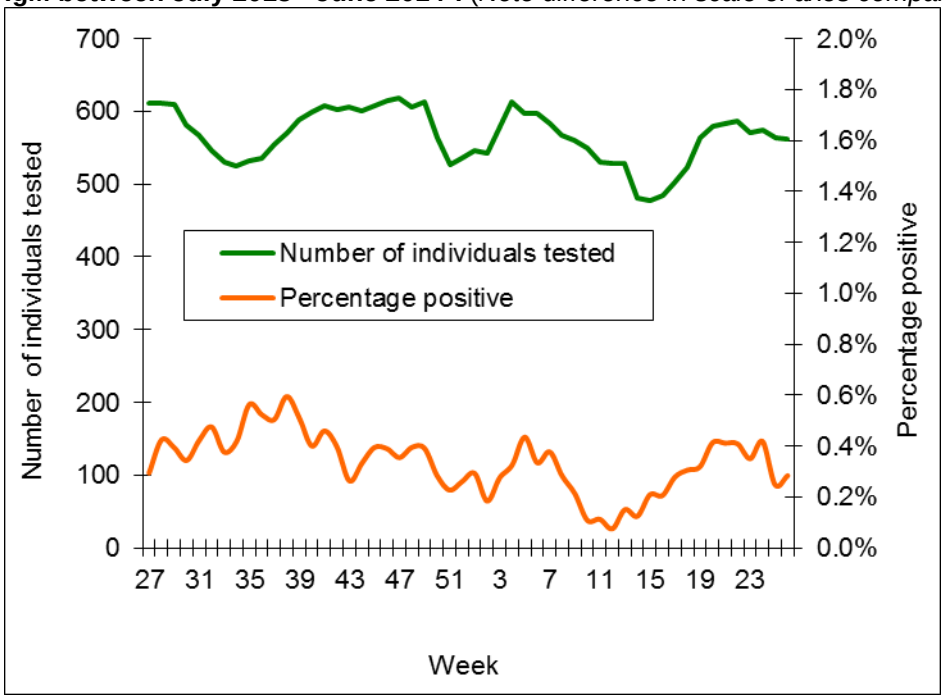
Age group	Female		Male		Unknown		Total	
	Number tested	Number positive (%)	Number tested	Number positive (%)	Number tested	Number positive (%)	Number tested	Number positive (%)
Under 1 year	15	0 (0.0)	32	0 (0.0)	0	0 (0.0)	47	0 (0.0)
1-14 years	88	2 (2.3)	101	3 (3.0)	1	0 (0.0)	190	5 (2.6)
15-24 years	344	2 (0.6)	425	1 (0.2)	3	0 (0.0)	772	3 (0.4)
25-34 years	402	2 (0.5)	782	4 (0.5)	3	0 (0.0)	1,187	6 (0.5)
35-44 years	391	0 (0.0)	722	1 (0.1)	5	0 (0.0)	1,118	1 (0.1)
45-54 years	508	0 (0.0)	627	3 (0.5)	2	0 (0.0)	1,137	3 (0.3)
55-64 years	491	1 (0.2)	501	1 (0.2)	0	0 (0.0)	992	2 (0.2)
≥65 years	783	3 (0.4)	820	0 (0.0)	2	0 (0.0)	1,605	3 (0.2)
Unknown	5	0 (0.0)	12	0 (0.0)	0	0 (0.0)	17	0 (0.0)
Total, all age groups	**3,027**	**10 (0.3)**	**4,022**	**13 (0.3)**	**16**	**0 (0.0)**	**7,065**	**23 (0.3)**

* 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.

To provide an indication of trends in testing, data for the period April to June 2014 (0.3%; 23/6,883) were compared to data received for the same time periods of 2013 and 2012. These show a reduction in the number of people tested in 2014 compared to 2013 and a reduction in the proportion tested positive in both 2013 (0.4%; 31/7,236) and 2012 (0.5%; 34/6,837).

Figure 1 shows the five-weekly moving average for number of people tested for anti-HAV IgM and percentage positive between April and June 2014, inclusive, for 24 participating sentinel centres.

Figure 1. Five-weekly moving average of number of people tested, and percentage positive, for anti-HAV IgM between July 2013 - June 2014*. (*Note difference in scale of axes compared with figures 2 and 3.)*



* 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.

2. Hepatitis B surface antigen (HBsAg) testing

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

During the second quarter of 2014, a total of 23,129 women were identified as undergoing antenatal screening for HBsAg, representing 31.2% (23,129/74,123) of all individuals tested in participating sentinel centres. Overall 0.5% (n=115) of women tested positive. Among the 115 HBsAg positive women identified, 110 (95.7%) had HBeAg results available, and of these, 6.4% were HBeAg positive.

b) Non-antenatal HBsAg testing

During the second quarter of 2014, excluding dried blood-spot and antenatal testing, 50,994 individuals were tested for HBsAg in participating sentinel centres. Overall, 1.2% (n=619) of individuals tested positive. Unknown PHECs had the highest proportion of individuals testing positive (2.3%). The West Midlands and London also had a high proportion of individuals testing positive (1.7% and 1.6%, respectively). This may reflect more targeted testing of risk groups and/or genuinely higher prevalence in people being tested in these regions.

Table 2 shows the age group and gender of individuals tested, and testing positive, for HBsAg. Gender and age group were reported for the majority of individuals (>99.1%), and where available, slightly more males were tested compared to females (53.0% and 47.0% respectively. As reported previously the proportion testing positive for HBsAg was higher among males than females (0.9% v 1.5%). The greatest number of tests performed were among those aged 25-34 years where as the highest percentage of individuals testing positive were those aged 35-44 years. The mean age of individuals tested was 40.3 years (range 0.0-98.7 years) and of those testing positive was 38.3 years (range 1.8-84.1 years). The prevalence of HBsAg among tested individuals of unknown gender (3.1%) is higher than both males and females (1.5% and 0.9% respectively). This may reflect a change to the testing of individuals in settings such as prisons, drug services and GUM clinics where few demographic details on patients (such as gender) were available and where service users may be at higher risk of hepatitis B infection.

Table 2. Age and gender of individuals tested for HBsAg in participating centres (excluding antenatal testing), April - June 2014*.

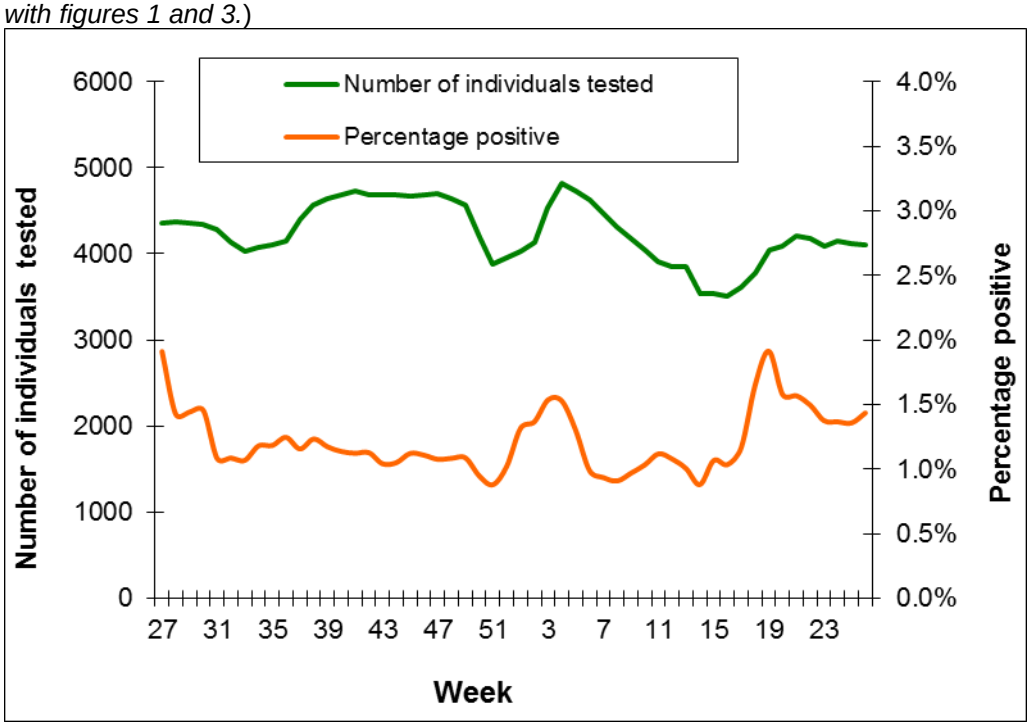
Age group	Female		Male		Unknown		Total	
	Number tested	Number positive (%)	Number tested	Number positive (%)	Number tested	Number positive (%)	Number tested	Number positive (%)
Under 1 year	65	0 (0.0)	82	0 (0.0)	2	0 (0.0)	149	0 (0.0)
1-14 years	406	4 (1.0)	457	4 (0.9)	10	0 (0.0)	873	8 (0.9)
15-24 years	4,376	21 (0.5)	4,135	37 (0.9)	126	4 (3.2)	8,637	62 (0.7)
25-34 years	7,042	64 (0.9)	7,359	142 (1.9)	99	5 (5.1)	14,500	211 (1.5)
35-44 years	4,011	59 (1.5)	5,457	117 (2.1)	65	3 (4.6)	9,525	179 (1.9)
45-54 years	2,931	32 (1.1)	3,709	67 (1.8)	24	1 (4.2)	6,664	100 (1.5)
55-64 years	2,125	12 (0.6)	2,436	22 (0.9)	7	0 (0.0)	4,568	34 (0.7)
≥65 years	2,753	9 (0.3)	3,132	15 (0.5)	11	0 (0.0)	5,896	24 (0.4)
Unknown	41	1 (2.4)	72	0 (0.0)	69	0 (0.0)	182	1 (0.5)
Total, all age groups	**23,750**	**202 (0.9)**	**26,831**	**404 (1.5)**	**413**	**13 (3.1)**	**50,994**	**619 (1.2)**

* 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.

To provide an indication of trends in testing, data for the period April to June 2014 (1.1%; 554/48,617) were compared to data received for the same time periods of 2013 and 2012. This indicated a slight decrease in the number of individuals tested and a slight increase in the proportion of individuals testing positive for HBsAg in 2014 when compared to 2013 (1.0%; 539/51,474) and an increase in the number of individuals tested and a slight decrease in the proportion of individuals testing positive in 2012 (1.4%; 616/42,875).

Figure 2 shows the five-weekly moving average for number of people tested for HBsAg and percentage positive between July 2013 and June 2014 inclusive, for 24 participating sentinel centres.

Figure 2. Five-weekly moving average of number of individuals tested, and percentage positive, for HBsAg between July 2013 - June 2014*. (excluding antenatal testing)*. (*Note difference in scale of axes compared with figures 1 and 3.*)



* 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.

3. Hepatitis C testing

During the second quarter of 2014, excluding dried blood spot testing, a total of 44,109 individuals were tested at least once for hepatitis C specific antibodies (anti-HCV). Overall, 1.9% (n=822) of individuals tested positive, although this varied by region. The highest proportion of positive tests in England were from the South Midlands and Hertfordshire PHECs (13.0%) although few individuals were tested in this region and Cumbria and Lancashire (3.2%). This may reflect changes in testing patterns and/or in the prevalence of hepatitis C in people being tested in these regions. Of the 822 individuals testing positive for anti-HCV during the second quarter of 2014, 534 (65.0%) were also tested for HCV RNA by PCR (qualitative and/or quantitative), of whom 352 were PCR positive (65.9%).

Table 3 shows the age group and gender of individuals tested, and testing positive, for anti-HCV. Gender and age were reported for the majority of individuals (>99.1%), and where available, there was a slightly higher proportion males tested (57.0%) compared to females (43.0%). As reported previously the proportion testing positive was also higher among males than among females (2.2% vs.1.3%). The mean age of individuals tested was 41.9 years (range 1.0-98.7 years) and of those testing positive was 43.1 years (range 6.8-86.3 years). As with the previous quarter the largest group tested were aged 25-34 years. The percentage of individuals testing positive was highest among the unknown age group (3.6%). As with HBsAg testing, individuals with unknown gender and age have a higher proportion testing positive when compared to those of known gender and age. This may reflect a change in testing of individuals in settings such as prisons, drug services and GUM clinics where fewer demographic details on patients are routinely available.

Table 3. Age and gender of individuals tested for anti-HCV in participating centres, April - June 2014*.

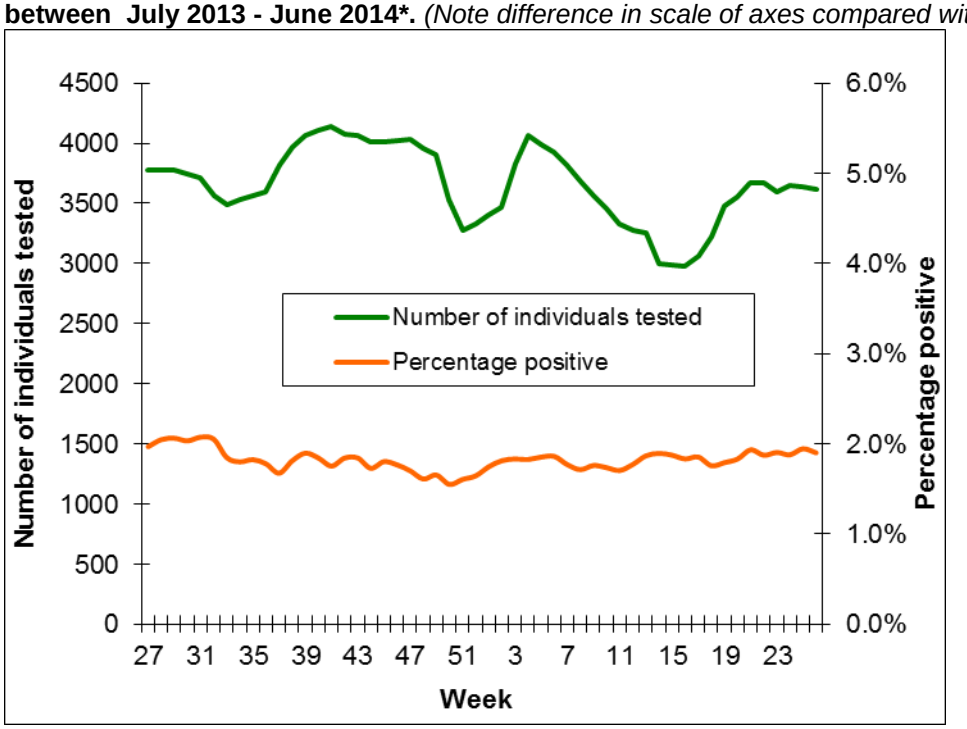
Age group	Female		Male		Unknown		Total	
	Number tested	Number positive (%)	Number tested	Number positive (%)	Number tested	Number positive (%)	Number tested	Number positive (%)
1-14	323	0 (0.0)	342	3 (0.9)	8	0 (0.0)	673	3 (0.4)
15-24	2,966	9 (0.3)	3,529	38 (1.1)	124	3 (2.4)	6,619	50 (0.8)
25-34	4,801	61 (1.3)	6,758	139 (2.1)	96	2 (2.1)	11,655	202 (1.7)
35-44	3,308	65 (2.0)	5,241	157 (3.0)	56	0 (0.0)	8,605	222 (2.6)
45-54	2,657	62 (2.3)	3,625	123 (3.4)	22	2 (9.1)	6,304	187 (3.0)
55-64	2,020	34 (1.7)	2,353	67 (2.8)	7	1 (14.3)	4,380	102 (2.3)
≥65	2,689	21 (0.8)	3,003	27 (0.9)	12	2 (16.7)	5,704	50 (0.9)
Unknown	38	1 (2.6)	63	5 (7.9)	68	0 (0.0)	169	6 (3.6)
Total, all age groups	**18,802**	**253 (1.3)**	**24,914**	**559 (2.2)**	**393**	**10 (2.5)**	**44,109**	**822 (1.9)**

* Excludes dried blood spot, oral fluid, reference testing and testing, hospitals referring all samples and individuals aged less than one year (as positive tests may reflect 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.

To provide an indication of trends in testing, data for the period April to June 2014 (1.9%; 779/41,050) were compared to data received for the same time periods of 2013 and 2012. These show an increase in the number of people tested over time, when compared to both 2013 (1.9%; 772/40,905) and 2012 (2.4%; 862/36,091).

Figure 3 shows the five-weekly moving average for number of people tested for anti-HCV and percentage positive between April and June 2014 inclusive, for 24 participating sentinel centres. Overall a slight decline in the proportion positive overtime is apparent.

Figure 3. Five-weekly moving average of number of people tested, and percentage positive, for anti-HCV between July 2013 - June 2014*. *(Note difference in scale of axes compared with figures 1 and 2.)*



* Excludes dried blood spot, oral fluid, reference testing and testing, hospitals referring all samples and individuals aged less than one year (as positive tests may reflect 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 testing

The sentinel surveillance study collects data on testing for hepatitis D-specific total antibody (HDV-TA). A positive HDV results does not necessarily represent an incident infection and these data should be interpreted accordingly.

During the second quarter of 2014, a total of 526 individuals were tested at least once for HDV TA. Overall 3.8% (n=20) of individuals tested positive, although this varied by region. Where gender was available (>97.3%), a higher proportion of males tested (56.4%) than females. The mean age of individuals tested was 38.1 years (range 0.7-92.7 years), whereas the mean age of those testing positive was 40.0 years (range 20.7-66.6 years).

5. Hepatitis E IgM testing

The sentinel surveillance study collects data on testing for hepatitis E-specific IgM antibody (anti-HEV IgM), a marker of acute hepatitis E infection. Thirteen sentinel laboratories provided anti-HEV IgM testing during the second quarter of 2014. A total of 2,573 individuals were tested at least once for anti-HEV IgM. Overall, 8.2% (n=211) of individuals tested positive, although this varied by region. Where gender was available (>98.4%), a higher proportion of males (52.3%) were tested than females. The mean age of individuals tested was 50.4 years (range 0.0-99.4 years), whereas the mean age of those testing positive was 57.4 years (range 15.4-93.2 years).

6. HIV testing

All pregnant women in the UK are offered HIV 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 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

During the second quarter of 2014, a total of 13,358 women were identified as undergoing antenatal screening for HIV, representing 16.8.% (13,358/79,330) of all individuals tested in participating sentinel centres. Overall 0.1% (n=18) of women tested positive.

b) Non-antenatal HIV testing

The sentinel surveillance study collects data on testing for HIV excluding dried blood-spot and antenatal testing, 22 sentinel laboratories provide HIV testing facilities.

During the second quarter of 2014, a total of 65,972 individuals were tested at least once for HIV. Overall, 0.9% (n=586) of individuals tested positive, although this varied by region. Sussex, Surrey and Kent and Greater Manchester PHECs had the highest proportion of individuals testing positive (1.2%), London also had a high proportion of individuals testing positive (1.0%). This may reflect more targeted testing of risk groups and/or genuinely higher prevalence in people being tested in these regions.

Table 4 shows the age group and gender of individuals tested, and testing positive, for HIV. Gender and age were reported for the majority of individuals (>95.1%), and a slightly higher proportion of females (50.5%) were tested than males, although the proportion testing positive was higher among males than among females (1.4% vs.0.4%). The mean age of individuals tested was 34.3 years (range 16.0-98.4 years), whereas the mean age of those testing positive was 38.7 years (range 16.1-77.8 years).The largest group tested were aged 25-34 years. The percentage of individuals testing positive was highest among 45-54 year olds (1.7%).

Table 4. Age and gender of individuals tested for HIV in participating centres (excluding antenatal testing), April - June 2014*.

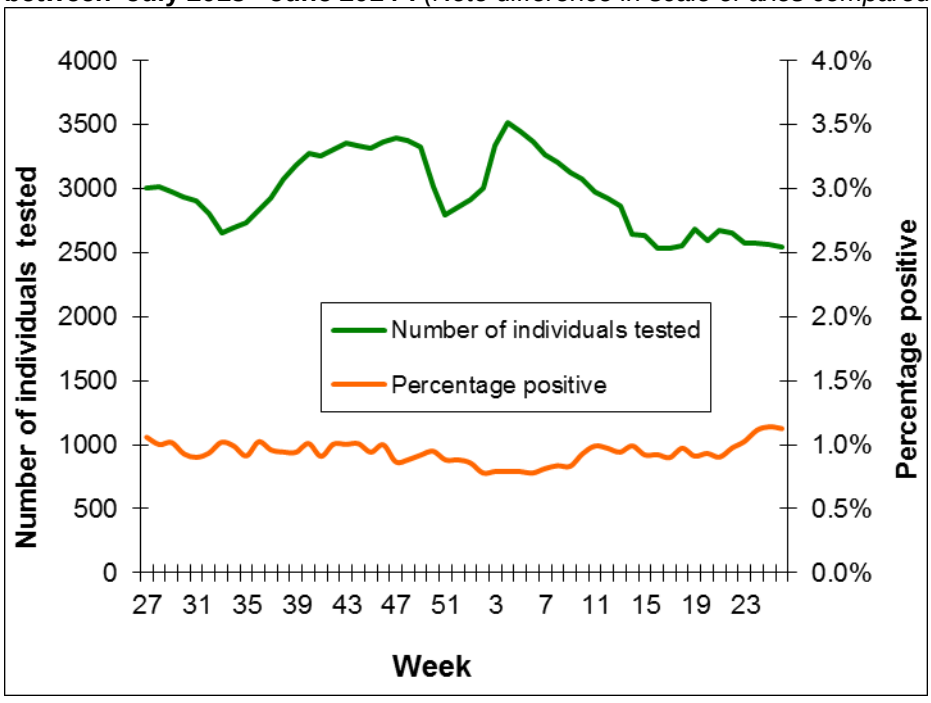
Age group	Female		Male		Unknown		Total	
	Number tested	Number positive (%)	Number tested	Number positive (%)	Number tested	Number positive (%)	Number tested	Number positive (%)
16-24 years	11,076	17 (0.2)	8,182	43 (0.5)	236	3 (1.3)	19,494	63 (0.3)
25-34 years	11,620	37 (0.3)	11,109	164 (1.5)	221	1 (0.5)	22,950	202 (0.9)
35-44 years	5,011	39 (0.8)	5,787	120 (2.1)	87	0 (0.0)	10,885	159 (1.5)
45-54 years	2,636	23 (0.9)	3,419	81 (2.4)	36	1 (2.8)	6,091	105 (1.7)
55-64 years	1,257	7 (0.6)	1,860	29 (1.6)	9	0 (0.0)	3,126	36 (1.2)
≥65 years	1,315	3 (0.2)	1,925	18 (0.9)	7	0 (0.0)	3,247	21 (0.6)
Unknown	42	0 (0.0)	65	0 (0.0)	72	0 (0.0)	179	0 (0.0)
Total, all age groups	**32,957**	**126 (0.4)**	**32,347**	**455 (1.4)**	**668**	**5 (0.7)**	**65,972**	**586 (0.9)**

* 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.

To provide an indication of trends in testing, data for the period April to June 2014 (1.0%; 456/46,594) were compared to data received for the same time periods of 2013 and 2012. These show a increase in the number of people tested over time, when compared to both 2013 (0.9%; 421/44,452) and 2012 (1.2%; 491/41,806).

Figure 4 shows the five-weekly moving average for number of people tested for HIV and percentage positive between April and June 2014 inclusive, for 22 participating sentinel centres.

Figure 4. Five-weekly moving average of number of people tested, and percentage positive, for HIV between July 2013 - June 2014*. *(Note difference in scale of axes compared with figures 1 and 2.)*



* Excludes dried blood spot, oral fluid, reference testing and testing, 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

The sentinel surveillance study collects data on testing for HTLV. Twelve sentinel laboratories provided HTLV testing facilities during the second quarter of 2014. A total of 1,739 individuals were tested at least once for HTLV. Overall, 1.7% (n=29) of individuals tested positive, although this varied by region. Where gender was available (>93.0%), a slightly higher proportion of males (50.2%) were tested than females. The mean age of individuals tested was 45.6 years (range 0.0-93.8 years), whereas the mean age of those testing positive was 52.7 years (range 0.6-81.3 years).

8. Dried blood spot testing

Three sentinel laboratories provide dried blood spot testing facilities. Anti-HCV dried blood spot testing data have also been made available by Alere Toxicology Plc[†].

[†] Please note that testing data provided by Alere Toxicology Plc represent indicative results only and are not intended to be used for diagnosis

a) HBsAg testing

During the second quarter of 2014, a total of 1,647 individuals were tested at least once for HBsAg by dried blood spot testing. Overall, 0.5% (n=9) of individuals tested positive, although this varied by region.

b) Anti-HCV testing

During the second quarter of 2014, 12,324 individuals were tested at least once for hepatitis C-specific antibodies (anti-HCV) by dried blood spot testing. Alere Toxicology Plc tested 10,391 individuals of whom 7.0% (n=732) has a reactive test result. A further 1,933 individuals were tested by sentinel laboratories, of whom 12.0% (n=232) tested positive. The comparatively lower proportion of positive test results among individuals who were tested by sentinel laboratories may reflect differences in testing; for example dried blood spot testing has been trialled in pharmacies and other primary care settings as well as by specialist drug services. Samples tested by DBS by Alere Toxicology Plc include, but not limited to, those taken in/by drug action teams and prison services

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