NHS Blood and Transplant

Supplementary data tables and figures: 2018

NHS Blood and Transplant and Public Health England Epidemiology Unit

Contents

Summary

This document contains supplementary data to those presented in the NHS Blood and Transplant (NHSBT)/Public Health England (PHE) Epidemiology Unit Annual Review 2018, for the following surveillance schemes:

- surveillance of infections in blood donors
- surveillance of bacterial screening in blood donors
- surveillance of infections in tissue and cell donors
- surveillance of infection in deceased solid organ donors
- surveillance of transfusion-transmitted Infections

Donations from blood, tissue and cell donors found positive for markers of infections are removed from the supply.

The document is designed to be read in conjunction with the annual review and the data sources and methods document which provides more detailed information on how the data are collected and processed.

We are happy for data contained in this document to be used. Please use the suggested citation below and acknowledge the NHSBT/PHE Epidemiology Unit.

Safe Supplies: Monitor, inform, progress. Annual Review from the NHS Blood and Transplant / Public Health England Epidemiology Unit, 2018. London, August 2019.
https://hospital.blood.co.uk/diagnostic-services/microbiology-services/epidemiology/

The geographical areas covered by the blood services are as follows:
NHSBT – England and North Wales to 1 April 2016
WBS – rest of Wales
SNBTS – Scotland
NIBTS – Northern Ireland
IBTS – Republic of Ireland

1. Blood donor surveillance

Table 1.1: Summary of demographic characteristics of whole blood donors in England: 2018

	All donors		New donors		
Gender	**n**	***% all***	**n**	***% new***	***% category*** [1]
Male	352,418	*41.8*	59,889	*35.1*	*17.0*
Female	490,658	*58.2*	110,533	*64.9*	*22.5*
Age group					
17-24	90,984	*10.8*	39,582	*23.2*	*43.5*
25-34	179,509	*21.3*	56,605	*33.2*	*31.5*
35-44	154,092	*18.3*	37,395	*21.9*	*24.3*
45-54	178,414	*21.2*	24,810	*14.6*	*13.9*
55-64	149,156	*17.7*	10,822	*6.4*	*7.3*
65+	90,920	*10.8*	1,207	*0.7*	*1.3*
Ethnicity					
White	784,548	*93.1*	152,199	*89.3*	*19.4*
Asian/Asian British	24,419	*2.9*	8,556	*5.0*	*35.0*
Black/Black British	7,285	*0.9*	2,737	*1.6*	*37.6*
Mixed and other	15,966	*1.9*	5,543	*3.3*	*34.7*
Not known	10,858	*1.3*	1,387	*0.8*	*12.8*
Residence					
East Midlands	83,480	*9.9*	16,682	*9.8*	*20.0*
East of England	112,543	*13.3*	20,071	*11.8*	*17.8*
London	81,327	*9.6*	20,290	*11.9*	*24.9*
North East	37,428	*4.4*	8,303	*4.9*	*22.2*
North West	95,757	*11.4*	21,719	*12.7*	*22.7*
South Central	73,614	*8.7*	12,876	*7.6*	*17.5*
South East Coast	75,278	*8.9*	12,836	*7.5*	*17.1*
South West	104,663	*12.4*	19,494	*11.4*	*18.6*
West Midlands	68,410	*8.1*	13,710	*8.0*	*20.0*
Yorkshire and The Humber	83,624	*9.9*	16,974	*10.0*	*20.3*
Northern Ireland	97	*0.0*	43	*0.0*	*44.3*
Scotland	350	*0.0*	94	*0.1*	*26.9*
Wales	972	*0.1*	292	*0.2*	*30.0*
British Isles other	32	*0.0*	5	*0.0*	*15.6*
Unmatched to postcode	25,501	*3.0*	7,033	*4.1*	*27.6*
Total	**843,076**	-	**170,422**	-	*20.2*

1. Proportion of category that are new donors

Figure 1.1: Age groups of repeat and new whole blood donors in England: 2018

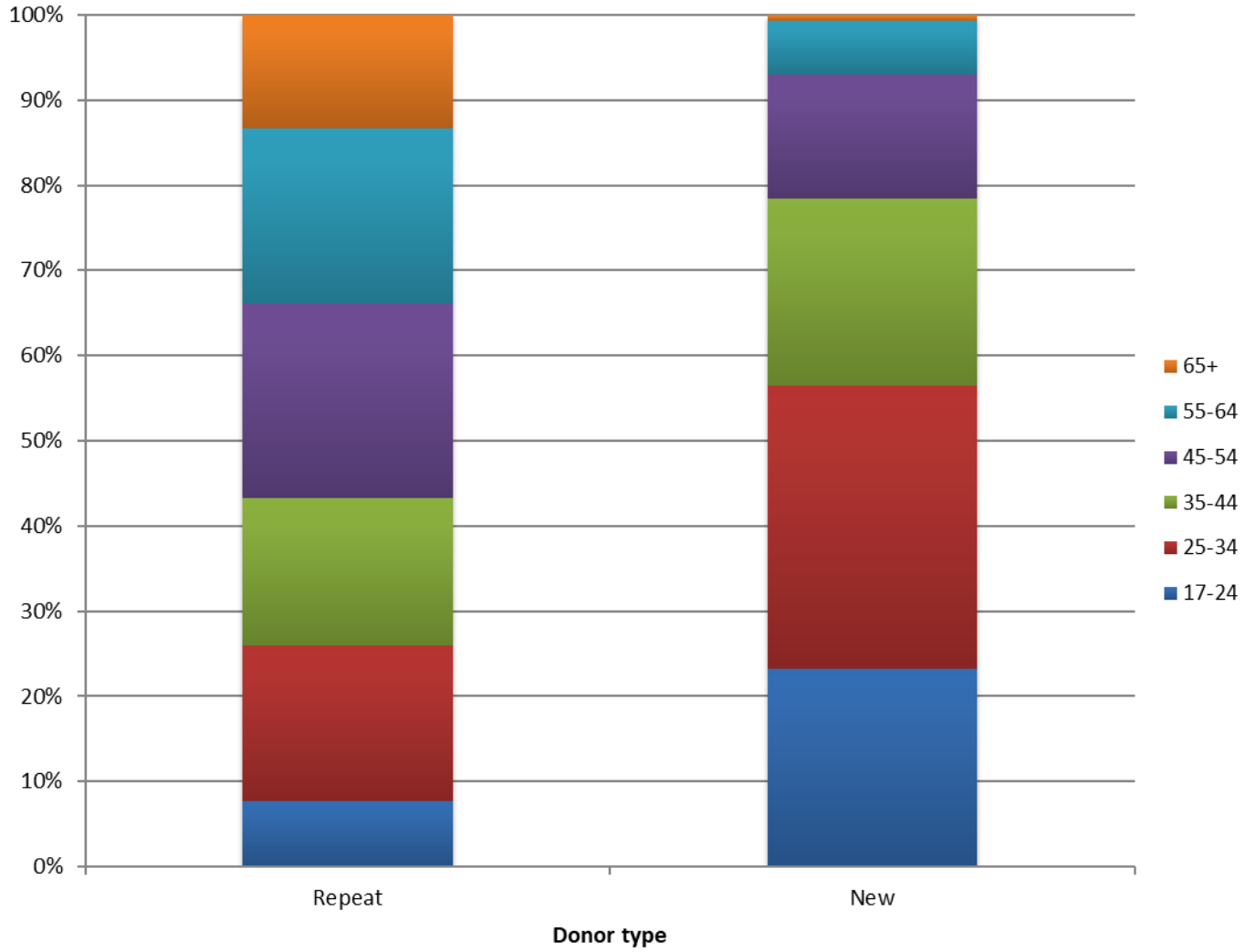


Table 1.2: The number and rate of markers of HBV, HCV, HIV, HTLV and syphilis identified among blood donations made to blood centres by new and repeat donors[2] and country of blood centres where donation was made: 2018

Country of blood centre	Donations tested			HBV			HCV			HIV			HTLV			Syphilis[1]			Total		
	New[2]	Repeat[2]	All	New[2]	Repeat[2]	All	New[2]	Repeat[2]	All	New[2]	Repeat[2]	All	New[2]	Repeat[2]	All	New[2]	Repeat[2]	All	New[2]	Repeat[2]	All
England	169,141	1,419,544	1,588,685	44	9	53	21	0	21	2	1	3	7	0	7	42	23	65	**116**	**33**	**149**
Rate[3]				*26.0*	*0.6*	*3.3*	*12.4*	*0.0*	*1.3*	*1.2*	*0.1*	*0.2*	*4.1*	*0.0*	*0.4*	*24.8*	*1.6*	*4.1*	***68.6***	***2.3***	***9.4***
Wales	11,509	89,925	101,434	3	0	3	1	0	1	0	1	1	0	0	0	1	0	1	**5**	**1**	**6**
Rate[3]				*26.1*	*0.0*	*3.0*	*8.7*	*0.0*	*1.0*	*0.0*	*1.1*	*1.0*	*0.0*	*0.0*	*0.0*	*8.7*	*0.0*	*1.0*	***43.4***	***1.1***	***5.9***
N. Ireland	5,196	44,506	49,702	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	**0**	**2**	**2**
Rate[3]				*0.0*	*2.2*	*2.0*	*0.0*	*0.0*	*0.0*	*0.0*	*2.2*	*2.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	***0.0***	***4.5***	***4.0***
Scotland	15,587	148,755	164,342	2	0	2	6	2	8	1	1	2	0	0	0	6	5	11	**15**	**8**	**23**
Rate[3]				*12.8*	*0.0*	*1.2*	*38.5*	*1.3*	*4.9*	*6.4*	*0.7*	*1.2*	*0.0*	*0.0*	*0.0*	*38.5*	*3.4*	*6.7*	***96.2***	***5.4***	***14.0***
Total UK	**201,433**	**1,702,730**	**1,904,163**	**49**	**10**	**59**	**28**	**2**	**30**	**3**	**4**	**7**	**7**	**0**	**7**	**49**	**28**	**77**	**136**	**44**	**180**
Rate[3]				***24.3***	***0.6***	***3.1***	***13.9***	***0.1***	***1.6***	***1.5***	***0.2***	***0.4***	***3.5***	***0.0***	***0.4***	***24.3***	***1.6***	***4.0***	***67.5***	***2.6***	***9.5***
Republic of Ireland	11,481	127,755	139,236	0	1	1	1	0	1	0	1	1	0	0	0	1	2	3	**2**	**4**	**6**
Rate[3]				*0.0*	*0.8*	*0.7*	*8.7*	*0.0*	*0.7*	*0.0*	*0.8*	*0.7*	*0.0*	*0.0*	*0.0*	*8.7*	*1.6*	*2.2*	***17.4***	***3.1***	***4.3***
Channel Isles & I. of Man	277	2,126	2,403	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**	**0**
Rate[3]				*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Total	**213,191**	**1,832,611**	**2,045,802**	**49**	**11**	**60**	**29**	**2**	**31**	**3**	**5**	**8**	**7**	**0**	**7**	**50**	**30**	**80**	**138**	**48**	**186**
Rate[3]				***23.0***	***0.6***	***2.9***	***13.6***	***0.1***	***1.5***	***1.4***	***0.3***	***0.4***	***3.3***	***0.0***	***0.3***	***23.5***	***1.6***	***3.9***	***64.7***	***2.6***	***9.1***

1. Treponema antibody testing detects both recent and past syphilis caused by the bacterium *T. pallidum*. It will also pick up diseases caused by other treponemes such as yaws caused by *T. pertenue* and pinta caused by *T. carateum*, endemic in some countries but both rare in the UK.
2. New and repeat donors classified according to records available to the blood centre and therefore new donors may include returning donors who have not donated within the previous three years for NHSBT. Numbers of donations reported here may differ slightly from new donors in Table 1.1 because different data sources were used.
3. Rate per 100,000 donations.

See 'Data Sources and Methods' document for details.

Note that there were 2 dual infections in the UK in 2018: HIV/Syphilis & HIV/ Syphilis.

For England, the New HBV category includes one donor with occult infection identified through additional testing after reporting history of jaundice and a HBV chronic infection where full donation was not taken and pack should not have been screened.

Table 1.3: Testing of blood and apheresis donations for HEV RNA: 2018

	2016		2017		2018		2016-2018		Rate per 100,000			
Country of blood centre[1]	Donations Tested	HEV No.	Donations Tested	HEV No.	Donations Tested	HEV No.	Donations Tested	HEV No.	2016	2017	2018	2016-2018
England[2]	482,758	198	1,330,925	281	1,559,517	376	3,373,200	855	41.0	21.1	24.1	25.3
Wales[3]	11,682	3	77,722	9	98,838	15	188,242	27	25.7	11.6	15.2	14.3
N. Ireland[4]	9,499	2	39,485	5	49,702	3	98,686	10	21.1	12.7	6.0	10.1
Scotland[5]	40,598	19	149,869	39	164,342	28	354,809	86	46.8	26.0	17.0	24.2
Total UK	**544,537**	**222**	**1,598,001**	**334**	**1,872,399**	**422**	**4,014,937**	**978**	**40.8**	**20.9**	**22.5**	**24.4**
Republic of Ireland	139,368	31	140,570	24	139236	23	419,174	78	22	17	16.5	18.6
Channel Isles & I. of Man	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total	**683,905**	**253**	**1,738,571**	**358**	**2,011,635**	**445**	**4,434,111**	**1,056**	**37.0**	**20.6**	**22.1**	**23.8**

UK Blood Services began testing blood and apheresis donations for HEV RNA in order to supply HEV screened components for selected patient groups from spring 2016 and became universal in 2017.

1. England data reported from 1st March 2016.
2. Confirmatory testing is not applied to HEV reactive samples detected by WBS.
3. Northern Ireland started 100% HEV screening on 30th May 2017 in pools of 24.
4. Universal testing for HEV began on 1st March 2017 in Scotland, 20th March 2017 in Wales, 10th April 2017 in England and 30th May 2017 in Northern Ireland.

Figure 1.2: The rate of markers of HBV, HCV, HIV, HTLV and syphillis in blood donations from new (a) and repeat (b) donors collected by blood centres in the UK: 1996-2018 (note different scales).

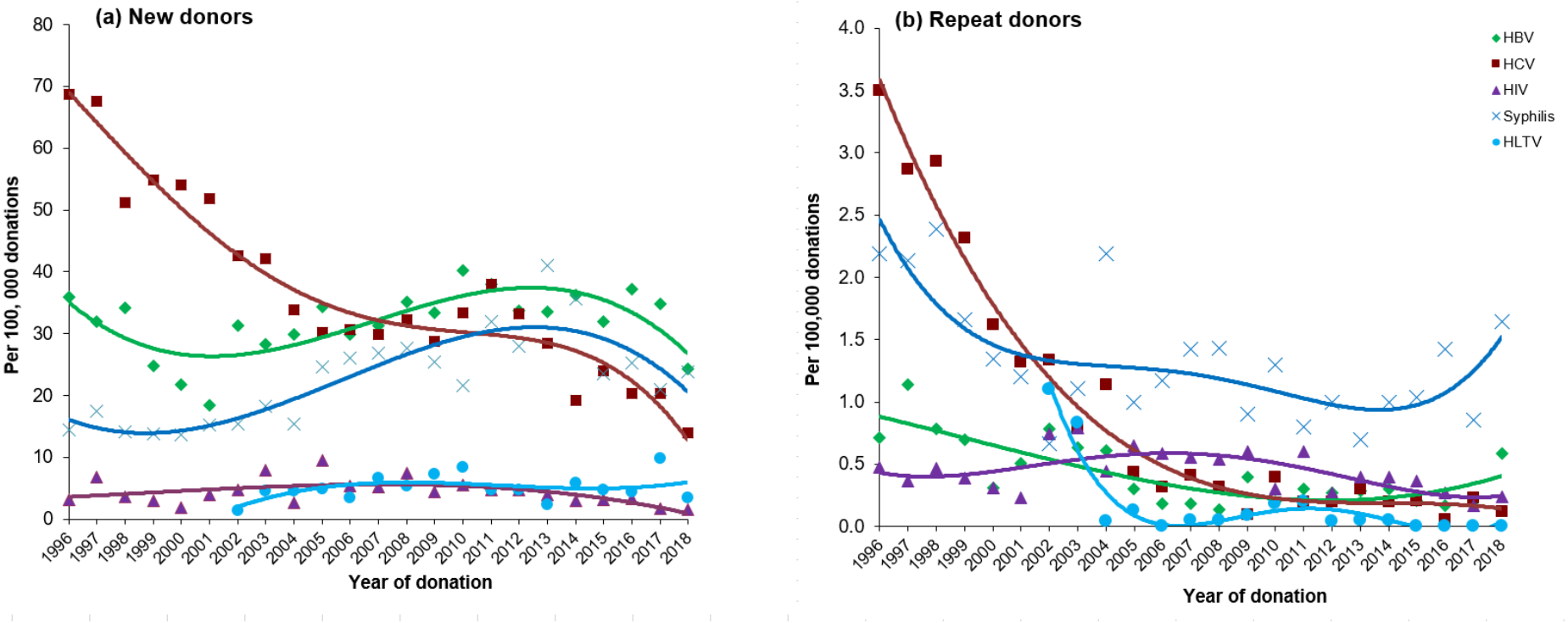


Figure 1.3: The rate (per 100,000) of markers in blood donations from new (a) and repeat (b) donors UK: 1996-2018 (note differences in scale).

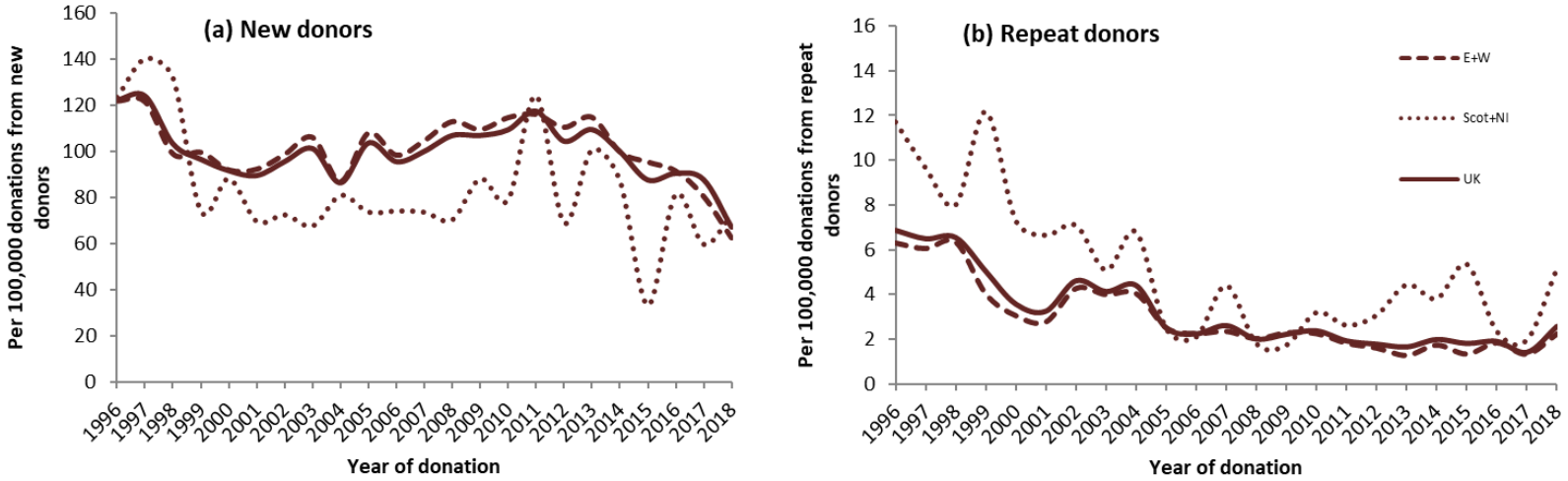


Figure 1.4: The rate (per 100,000) of HBV in blood donations from new (a) and repeat (b) donors UK: 1996-2018 (note differences in scale).

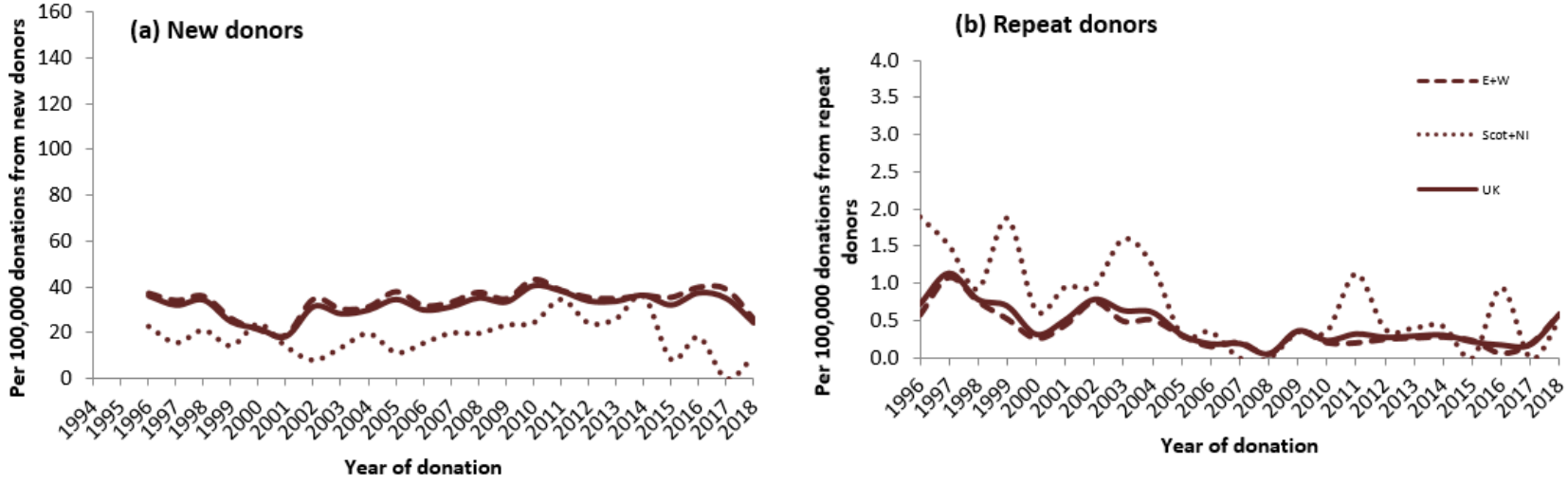


Figure 1.5: The rate (per 100,000) of HCV in blood donations from new (a) and repeat (b) donors UK: 1996-2018 (note differences in scale).

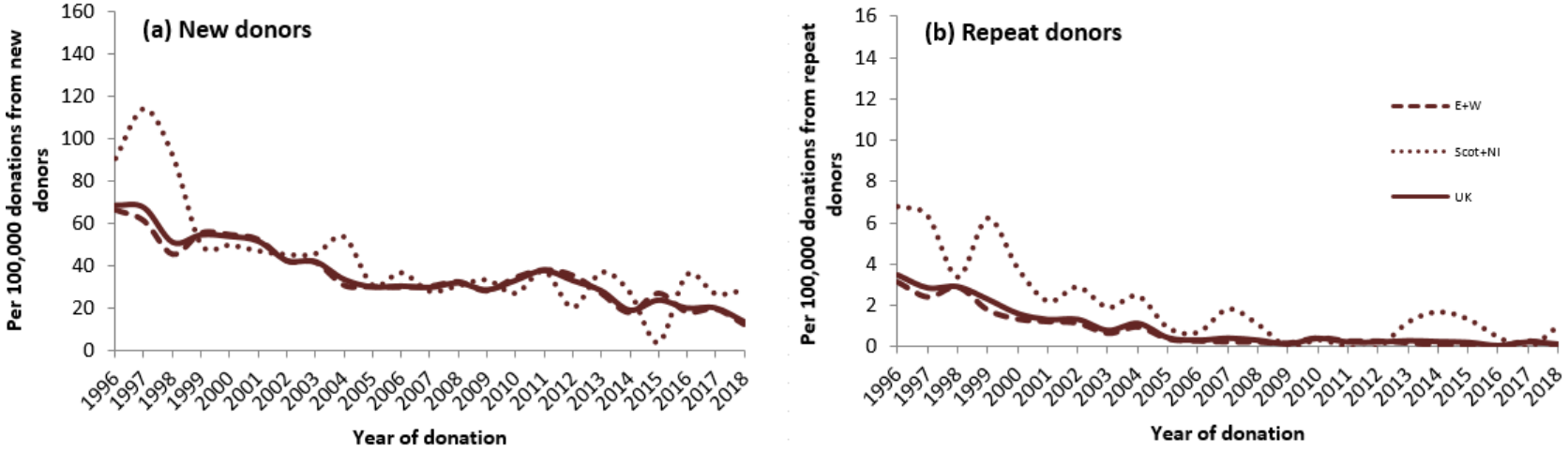


Figure 1.6: The rate (per 100,000) of HIV in blood donations from new (a) and repeat (b) donors UK: 1996-2018 (note differences in scale).

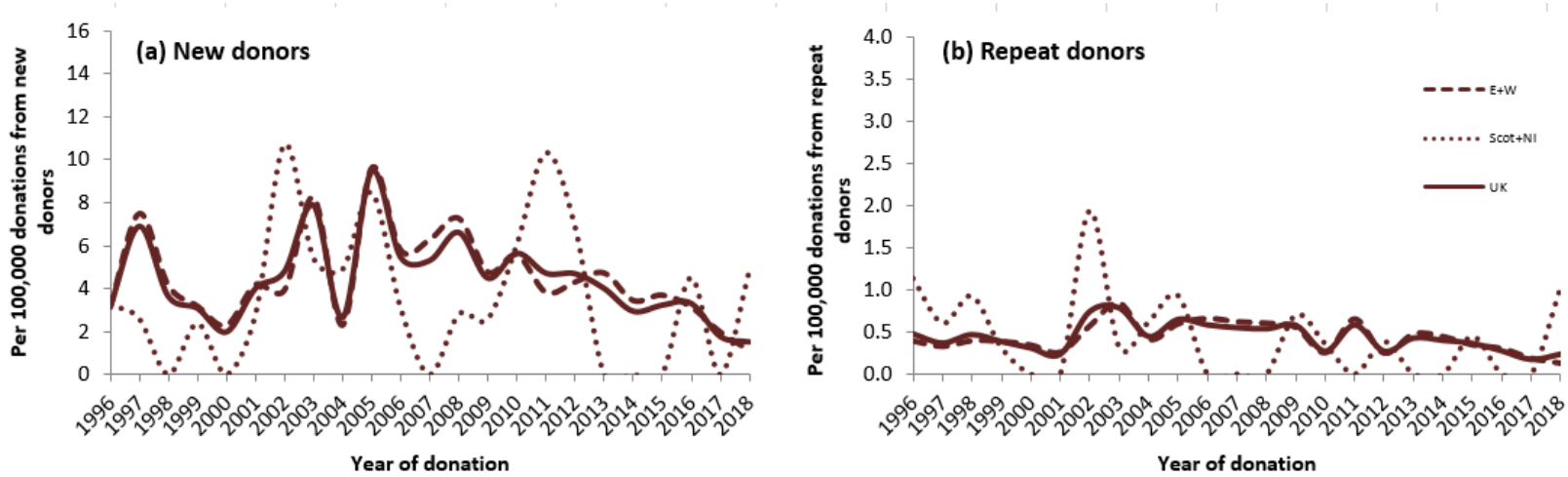


Figure 1.7: The rate (per 100,000) of HTLV in blood donations from new (a) and repeat (b) donors UK: 1996-2018 (note differences in scale).

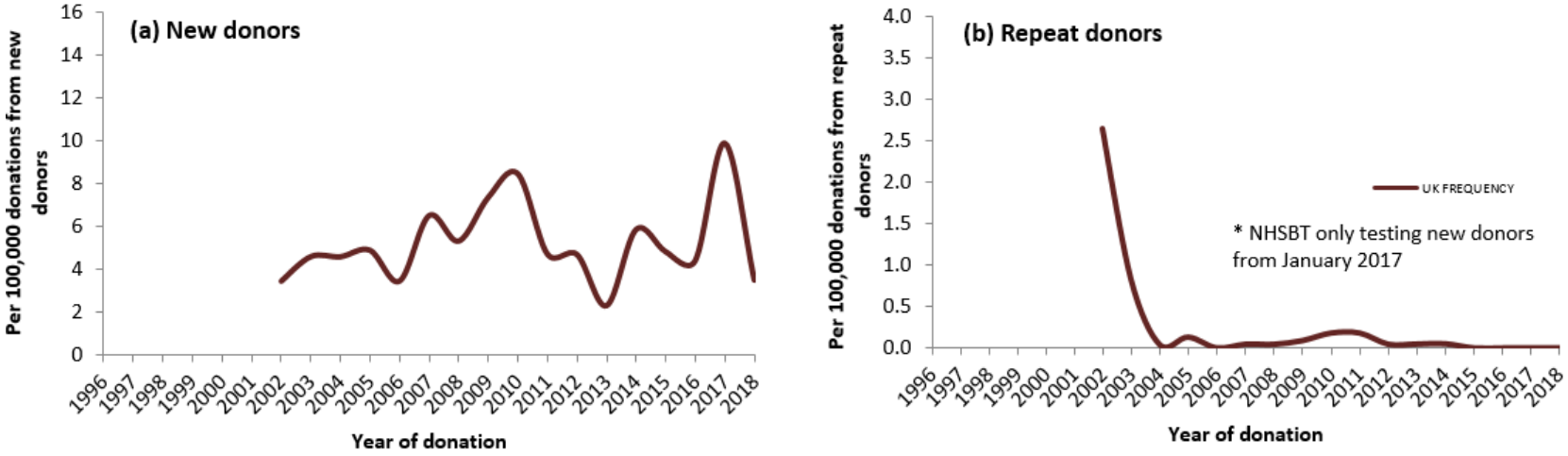


Figure 1.8: The rate (per 100,000) of syphilis in blood donations from new and repeat donors UK: 1996-2016 2018 (note differences in scale).

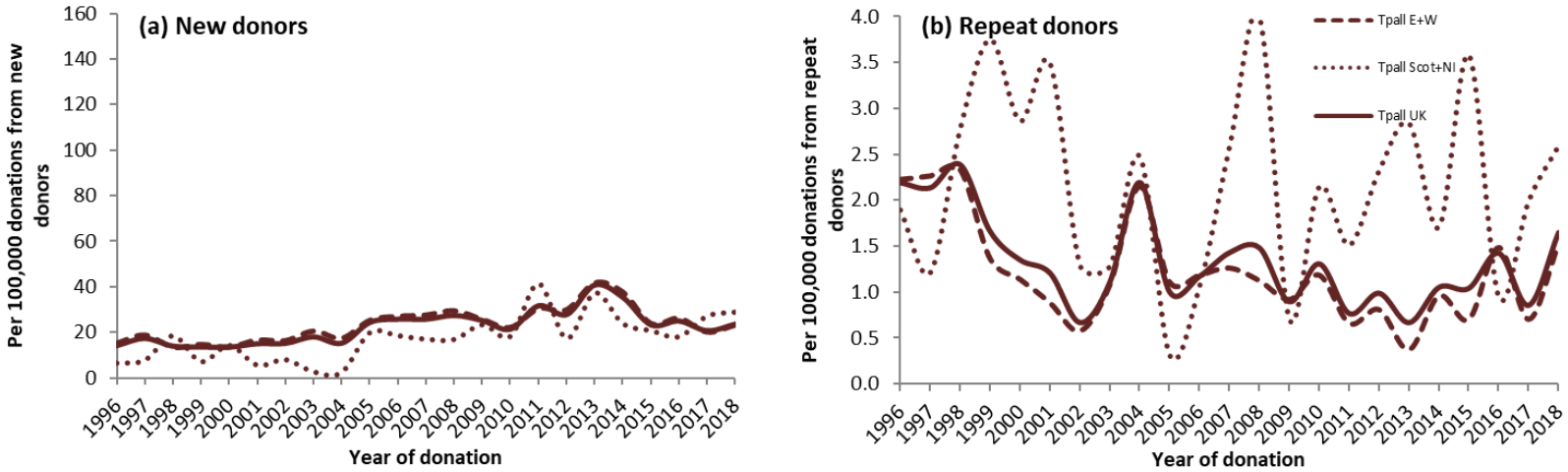
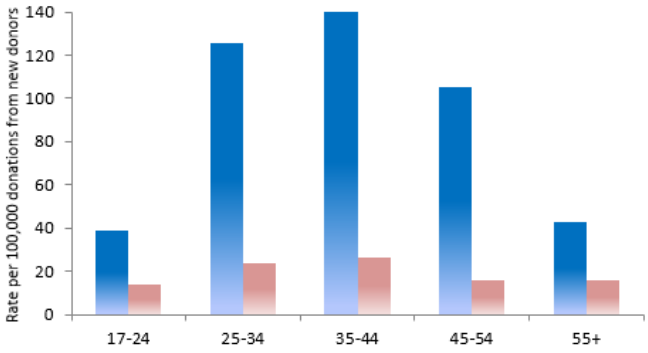
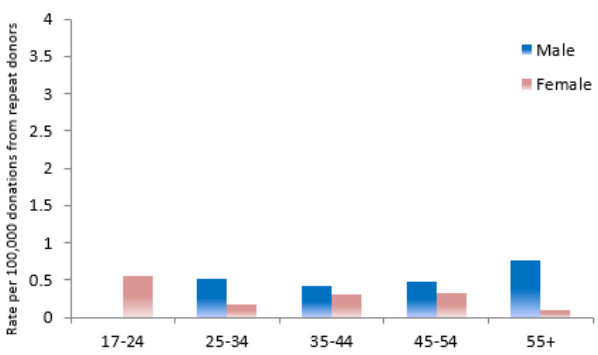


Figure 1.9: The rate (per 100,000) of markers of infection from new and repeat donors at blood centres UK by gender and age group: 2014-2018 (note different scales)

a) HBV in donations from new donors (n=295)



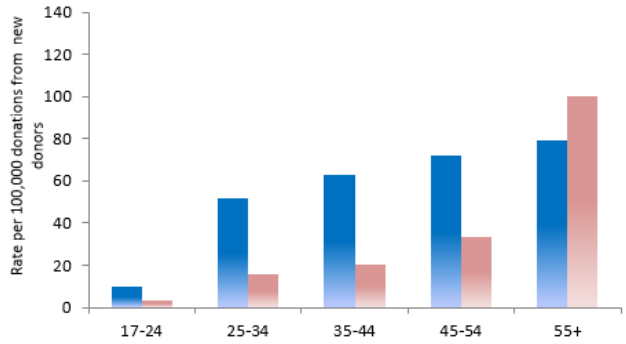
b) HBV in donations from repeat donors (n=26)



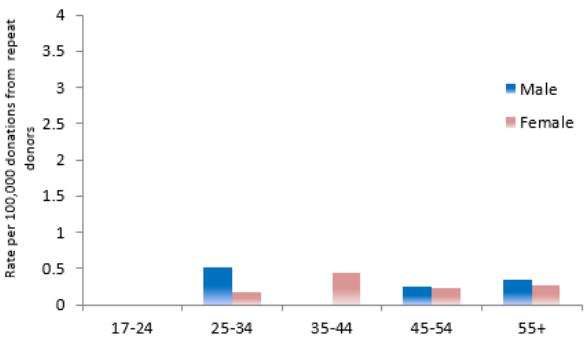
c) HCV in donations from new donors (n=177)

d) HCV in donations from repeat donors (n=17)

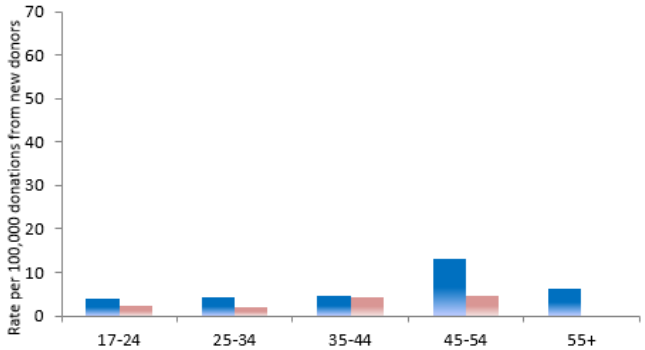
c) HCV in donations from new donors (n=177)



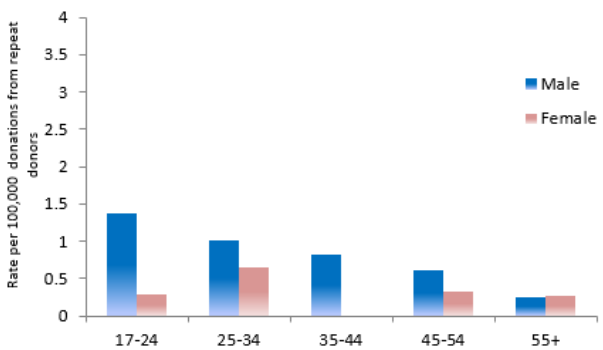
d) HCV in donations from repeat donors (n=17)



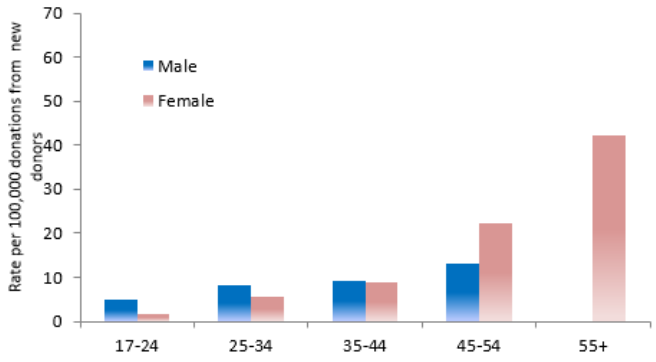
e) HIV in donations from new donors (n=23) *(note lower scale)*



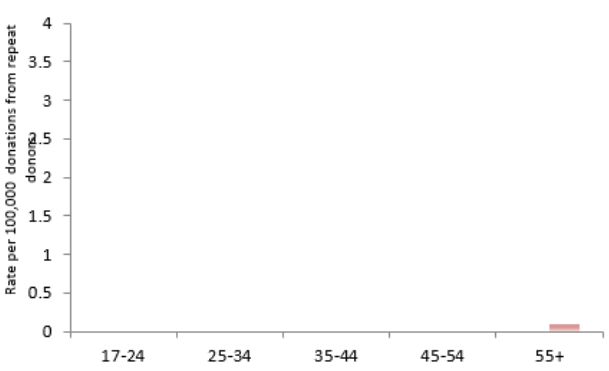
f) HIV in donations from repeat donors (n=30)



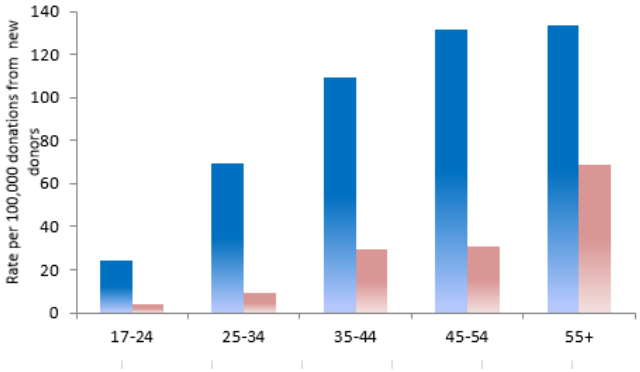
g) HTLV in donations from new donors (n=50) *(note lower scale)*



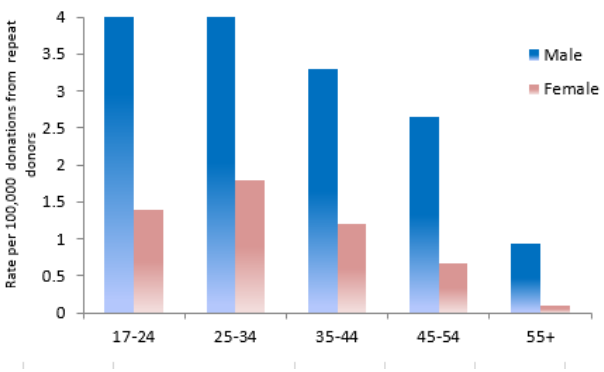
h) HTLV in donations from repeat donors (n=1)



i) Syphilis in donations from new donors (n=241)

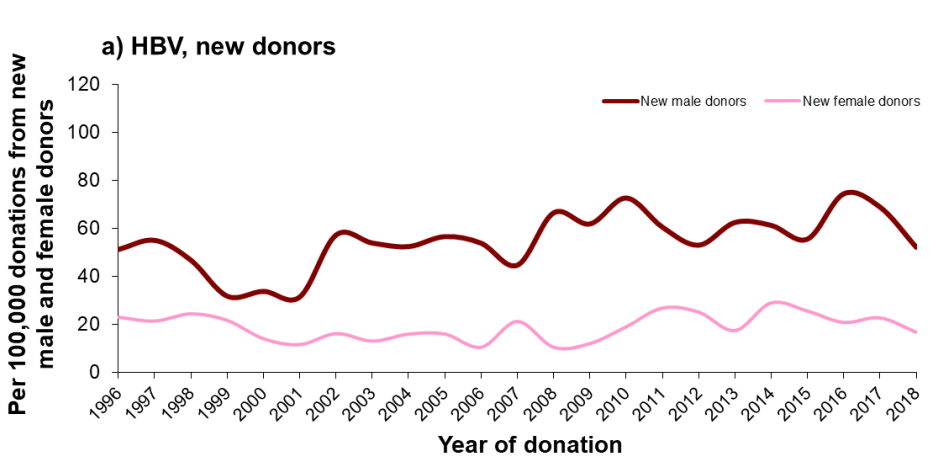


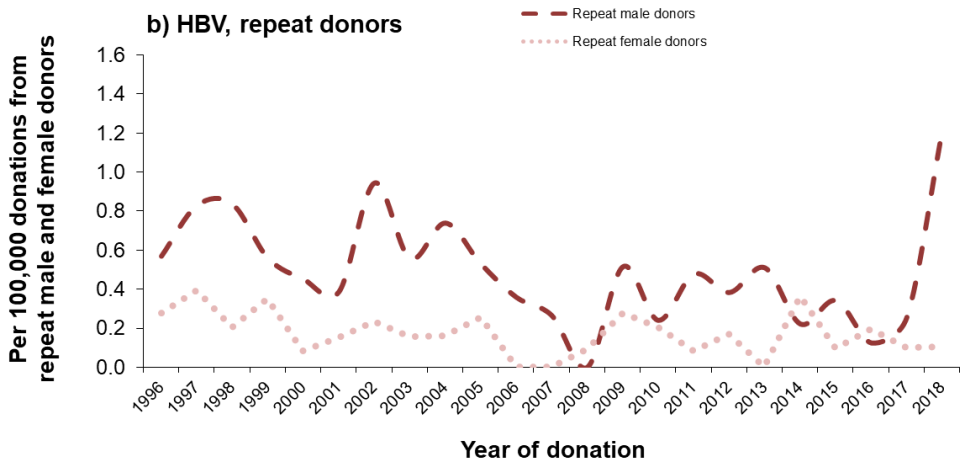
j) Syphilis in donations from repeat donors (n=109)

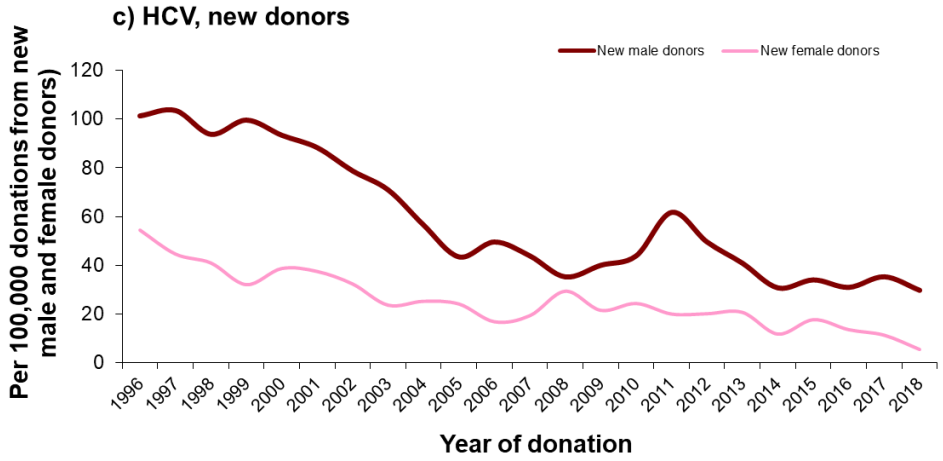


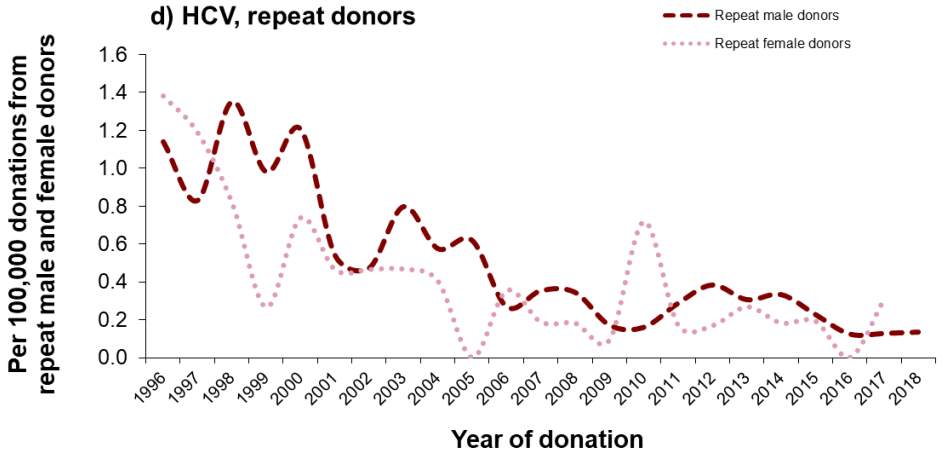
Please note: Syphilis graphs show past treated infections as well as current infections.

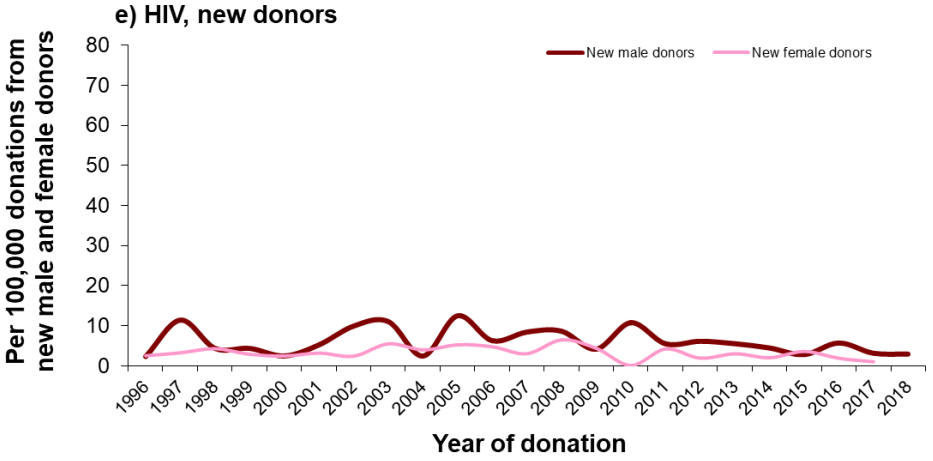
Fig 1.10: The rate (per 100,000) of markers in blood donations made from new (a) and repeat (b) donors by gender of donor, UK: 1996–2018 (note different scale for frequency in donations from newly tested and previously tested donors)

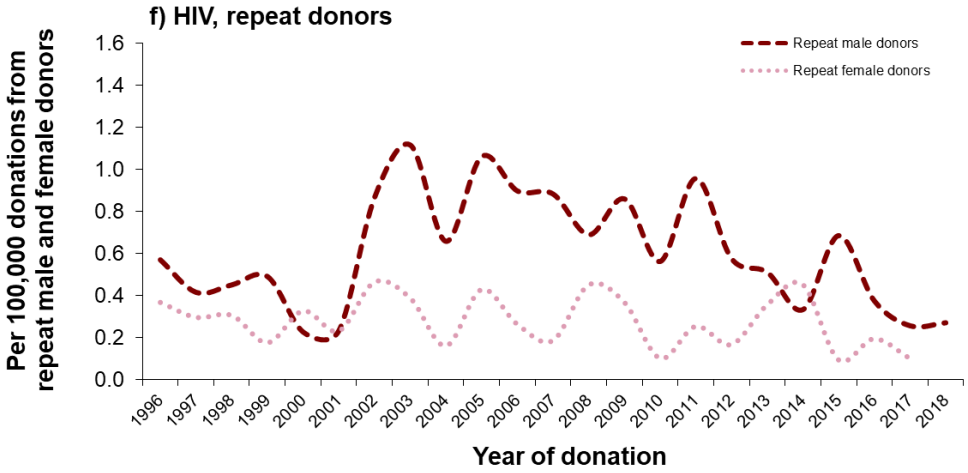


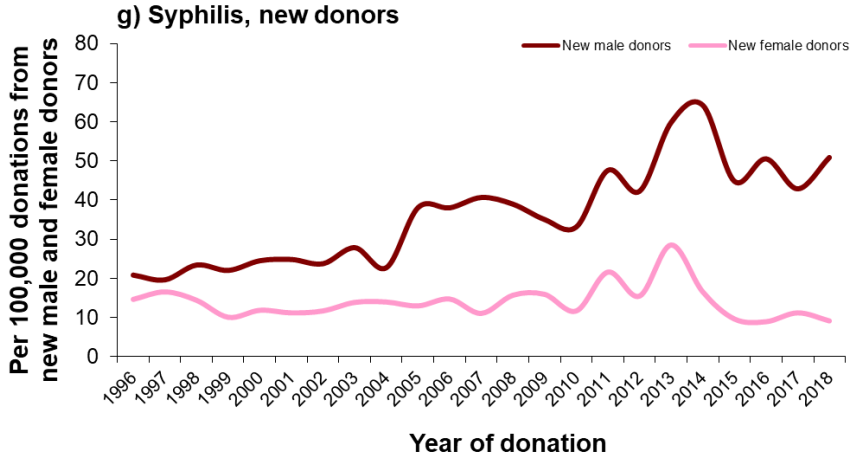







e) HIV, new donors
New male donors
New female donors
Per 100,000 donations from new male and female donors
Year of donation


f) HIV, repeat donors
Repeat male donors
Repeat female donors
Per 100,000 donations from repeat male and female donors
Year of donation


g) Syphilis, new donors
New male donors
New female donors
Per 100,000 donations from new male and female donors
Year of donation

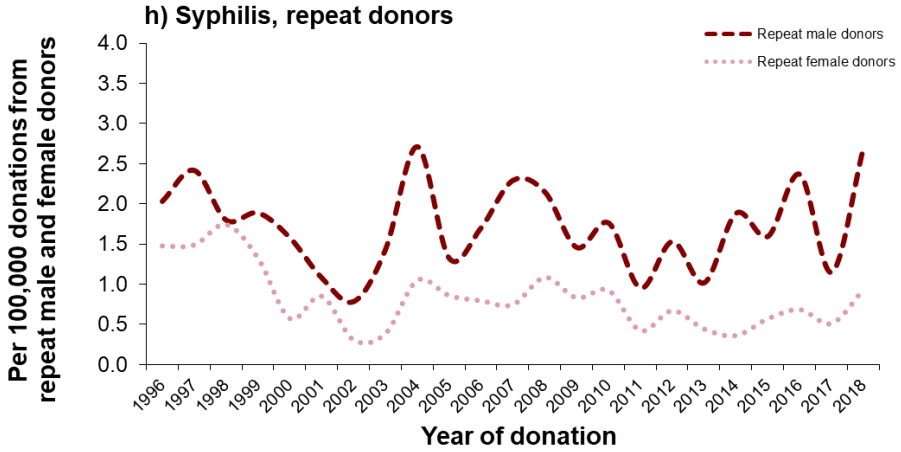
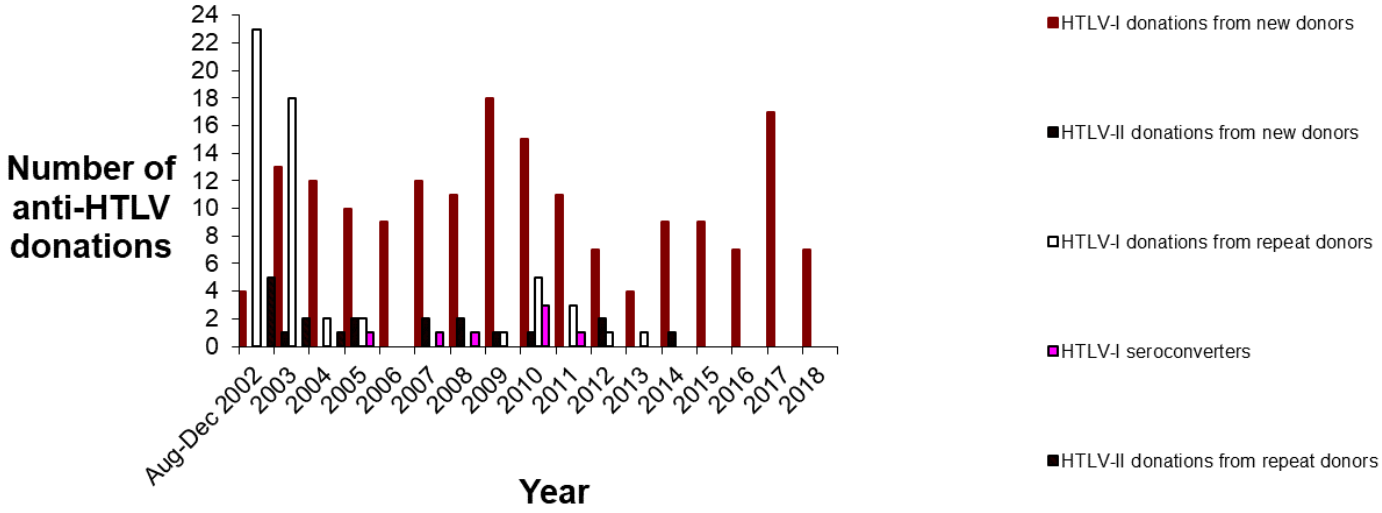

h) Syphilis, repeat donors
Repeat male donors
Repeat female donors
Per 100,000 donations from repeat male and female donors
Year of donation

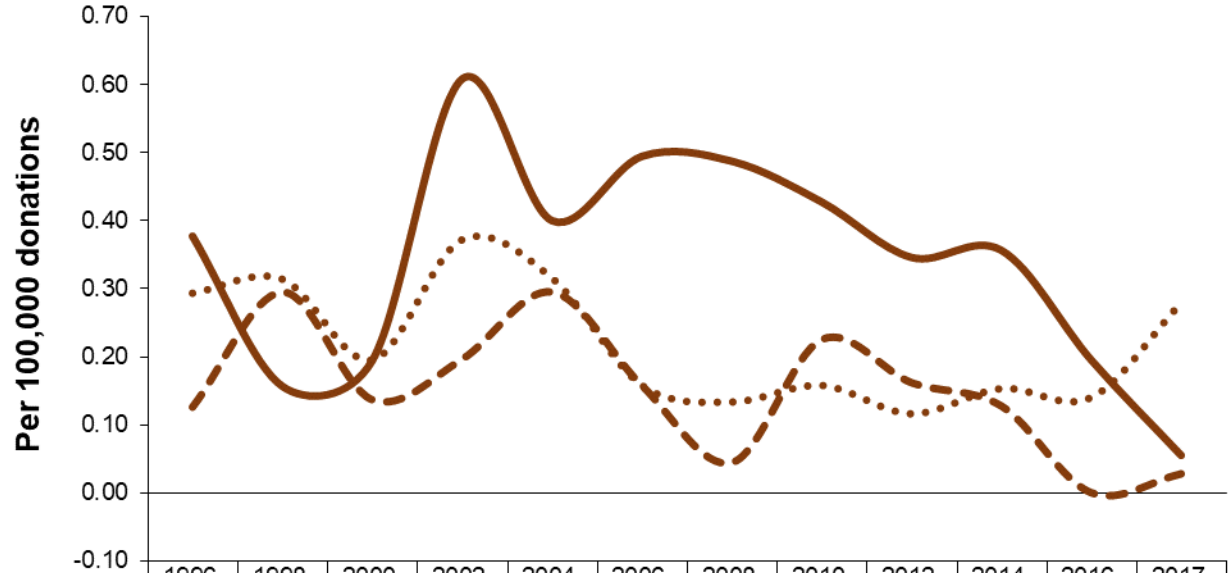
Figure 1.11: The number of anti-HTLV positive blood donations by new and repeat donors, UK (excluding Scotland): August 2002-December 2018[1]



1. All HTLV seroconverters had a negative donation within 1 year.

Figure 1.12: Rate of detected seroconversion for HBsAg, anti-HCV and anti-HIV in repeat donors: UK

Donations collected from 01/01/1996 to 31/12/2018



	1996-1997	1998-1999	2000-2001	2002-2003	2004-2005	2006-2007	2008-2009	2010-2011	2012-2013	2014-2015	2016-2017	2017-2018
HBV	0.29	0.31	0.19	0.37	0.32	0.16	0.13	0.16	0.12	0.15	0.14	0.28
HCV	0.13	0.29	0.14	0.20	0.29	0.16	0.04	0.22	0.16	0.13	0.00	0.03
HIV	0.38	0.16	0.19	0.61	0.40	0.49	0.49	0.43	0.35	0.36	0.20	0.06

1. A seroconversion was defined as a detected infection in a repeat donor who has provided a negative donation within the previous 3 years to 2015 and from 2016 defined as within the previous 1 year unless markers indicate a recent infection.
2. As HBsAg is a transient marker of HBV infection in individuals who do not progress to chronic carriage, this underestimates the frequency of new HBV infections amongst repeat donors.
3. Includes 23 donors detected by HCV RNA testing when anti-HCV negative and 6 donors detected by HIV RNA testing when anti-HIV negative.

Table 1.4: Characteristics and probable exposure history of HBV infected blood donors, UK and Republic of Ireland: 2018 and cumulative 1996-2018

	UK 2018										UK Cumulative: 1996-2018												ROI cumulative			
	Chronic infection[1]						Acute Infections[2]		All:2018		Chronic infection[3]								Acute Infections[4]		All:1996-2018		All:1996-2018			
	Newly tested				Previously tested						Newly tested				Previously tested											
	Male	Female	Total	%	Total	%	Total	%	Total	%	Male	Female	Total[5]	%	Male	Female	Total	%	Total	%	Total	%	Male	Female	Total[6]	%
Number	37	12	49	*100*	3	*100*	7	*100*	***59***	***100***	1249	517	1767	*88*	63	14	77	*3.9*	155	7.75	***1999***	***100***	46	10	**56**	***100***
Number seroconverted[7]					0	*0*	7		***0***	***0***					9	2	11		82	53	***93***	***5***	10	2	**12**	***21***
Rate (per 100,000 donations)	52.3	9.2	24.3		0.2		0.4		***3***		51.3	15.9	31.1		0.2	0.1	0.1		0.3		***3***		2.6	0.6	**1.6**	
Mean age	37.5	36.8	37.1		47.9		51.9		***45***		34.1	33.1	33.6		46.6	38.9	42.8		36.9		***34***		39.4	27.3	**33.4**	
Ethnic group																										
White	12	6	18	*37*	2	*67*	7	*100*	***27***	***46***	392	212	604	*34*	42	8	50	*65*	119	77	***773***	***39***	38	8	**46**	***82***
Asian/ Asian British	13	1	14	*29*	1	*33*	0	*0*	***15***	***25***	446	163	609	*34*	5	3	8	*10*	18	12	***636***	***32***	3	2	**5**	***9***
Black/African/Caribbean/ Black British	9	4	13	*27*	0	*0*	0	*0*	***13***	***22***	265	80	345	*20*	4	1	5	*6*	5	3	***355***	***18***	0	0	**0**	***0***
Mixed and other	3	1	4	*8*	0	*0*	0	*0*	***4***	***7***	50	23	73	*4*	2	0	2	*3*	1	1	***76***	***4***	3	0	**3**	***5***
Not known	0	0	0	*0*	0	*0*	0	*0*	***0***	***0***	96	39	135	*8*	10	2	12	*16*	12	8	***159***	***8***	2	0	**2**	***4***
Area of birth																										
UK	2	0	2	*4*	0	*0*	4	*57*	***6***	***10***	235	136	371	*21*	20	6	26	*34*	97	63	***494***	***25***	1	0	**1**	***2***
Europe excl UK	10	5	15	*31*	1	*33*	1	*14*	***17***	***29***	173	88	261	*15*	3	3	6	*8*	9	6	***276***	***14***	35	9	**44**	***79***
Asia	14	1	15	*31*	1	*33*	0	*0*	***16***	***27***	364	122	486	*28*	6	1	7	*9*	7	5	***500***	***25***	3	1	**4**	***7***
Africa	10	5	15	*31*	0	*0*	0	*0*	***15***	***25***	238	67	305	*17*	3	1	4	*5*	6	4	***315***	***16***	1	0	**1**	***2***
Other	0	0	0	*0*	1	*33*	0	*0*	***1***	***2***	20	16	36	*2*	2	0	2	*3*	2	1	***40***	***2***	2	0	**2**	***4***
Not known	1	1	2	*4*	0	*0*	2	*29*	***4***	***7***	219	88	307	*17*	29	3	32	*42*	34	22	***373***	***19***	4	0	**4**	***7***
Probable exposure category																										
Injecting drug use (IDU)	1	0	1	*2*	0	*0*	0	*0*	***1***	***2***	5	2	7	*0*	0	0	0	*0*	1	1	***8***	***0***	1	0	**1**	***2***
Intranasal drug use	1	0	1	*2*	0	*0*	0	*0*	***1***	***2***	2	0	2	*0*	0	0	0	*0*	0	0	***2***	***0***	0	0	**0**	***0***
Sex between men (SBM)	0	0	0	*0*	0	*0*	1	*14*	***1***	***2***	6	0	6	*0*	0	0	0	*0*	8	5	***14***	***1***	2	0	**2**	***4***
Sex between men and women (SBMW)	2	1	3	*6*	0	*0*	3	*43*	***6***	***10***	68	32	100	*6*	12	3	15	*19*	42	27	***157***	***8***	9	4	**13**	***23***
Blood/tissue transfer, blood product treatment	0	0	0	*0*	0	*0*	0	*0*	***0***	***0***	10	15	25	*1*	0	1	1	*1*	0	0	***26***	***1***	1	0	**1**	***2***
Blood contact possible	5	1	6	*12*	0	*0*	1	*14*	***7***	***12***	165	69	234	*13*	12	0	12	*16*	22	14	***268***	***13***	10	2	**12**	***21***
Born in or to parents from an endemic country	27	8	35	*71*	2	*67*	0	*0*	***37***	***63***	554	217	798	*45*	7	4	11	*14*	7	5	***816***	***41***	5	0	**5**	***9***
No exposure identified	1	2	3	*6*	1	*33*	2	*29*	***6***	***10***	412	182	594	*34*	32	6	38	*49*	75	48	***707***	***35***	18	4	**22**	***39***

1. Includes occult infections detected among three previously tested donors.
2. All were previously tested.
3. Includes occult infections detected among 8 newly tested and 18 previously tested donors.
4. Acute infections detected among 56 newly tested and 99 previously tested donors.
5. Total includes one newly tested donor where gender not known.
6. Includes acute infections detected among 5 newly tested and 15 previously tested donors.
7. A seroconversion is defined as a detected infection in a repeat donor who has provided a negative donation within the previous year unless markers indicate a recent infection.

Table 1.5: Characteristics and probable exposure history of HCV infected blood donors, UK, and Republic of Ireland: 2018 and cumulative 1996-2018

	UK 2018								UK Cumulative: 1996-2018										ROI Cumulative			
	Newly tested[1]				Previously tested		All:2018		Newly tested				Previously tested				All:1996-2018		All:1996-2018			
	Male	Female	Total	%	Total	%	Total	%	Male	Female	Total[2]	%	Male	Female	Total	%	Total	%	Male	Female	Total[3]	%
Number	21	7	28	*100*	2	*100*	**30**	**100**	1536	874	2411	*100*	147	102	249	*100*	**2660**	**100**	44	32	**77**	**100**
Number seroconverted[4]					1	*50*	**1**	**3.3**					23	16	39	*13*	**32**	**1**	0	0	**0**	**0**
Rate (per 100,000 donations)	29.7	5.1	13.9		0.1		**2**		63.1	26.8	42.4		0.6	0.4	0.5		**5**		2.5	1.8	**2.2**	
Mean age	40.0	45.5	42.8		58.4		**51**		38.7	38.6	38.63		37.9	39.0	38.4		**39**		37.6	38.8		
Ethnic group																						
White	12	5	17	*61*	2	*100*	**19**	**63**	1138	746	1884	*78*	120	88	208	*84*	**2092**	**79**	38	31	**69**	**90**
Asian/ Asian British	5	2	7	*25*	0	*0*	**7**	**23**	139	42	181	*8*	1	2	3	*1*	**184**	**6**	1	0	**1**	**1**
Black/African/Caribbean/ Black British	0	0	0	*0*	0	*0*	**0**	**0**	17	8	25	*1*	2	1	3	*1*	**28**	**1**	1	0	**1**	**1**
Mixed and other	3	0	3	*11*	0	*0*	**3**	**10**	29	10	39	*2*	2	0	2	*1*	**41**	**2**	0	0	**0**	**0**
Not known	1	0	1	*4*	0	*0*	**1**	**3**	213	68	282	*12*	22	11	33	*13*	**315**	**12**	4	1	**6**	**8**
Area of birth																						
UK	3	4	7	*25*	2	*100*	**9**	**30**	737	516	1253	*52*	81	64	145	*58*	**1398**	**53**	2	2	**4**	**5**
Europe excl UK	6	1	7	*25*	0	*0*	**7**	**23**	174	119	293	*12*	2	2	4	*2*	**297**	**11**	35	26	**61**	**79**
Asia	7	2	9	*32*	0	*0*	**9**	**30**	124	34	158	*7*	0	1	1	*0*	**159**	**6**	1	1	**2**	**3**
Africa	0	0	0	*0*	0	*0*	**0**	**0**	26	9	35	*1*	1	0	1	*0*	**36**	**1**	0	1	**1**	**1**
Other	2	0	2	*7*	0	*0*	**2**	**7**	23	26	49	*2*	3	0	3	*1*	**52**	**2**	1	2	**3**	**4**
Not known	3	0	3	*11*	0	*0*	**3**	**10**	452	170	623	*26*	60	35	95	*38*	**718**	**27**	5	0	**5**	**6**
Probable exposure category																						
Injecting drug use (IDU)	2	0	2	*7*	0	*0*	**2**	**7**	411	140	551	*23*	23	10	33	*13*	**584**	**22**	11	4	**15**	**19**
Intranasal drug use	0	1	1	*4*	0	*0*	**1**	**3**	52	27	79	*3*	5	1	6	*2*	**85**	**3**	4	2	**6**	**8**
Sex between men (SBM)	0	0	0	*0*	0	*0*	**0**	**0**	6	0	6	*0*	3	0	3	*1*	**9**	**0**	0	0	**0**	**0**
Sex between men and women (SBMW)	0	1	1	*4*	0	*0*	**1**	**3**	67	123	190	*8*	13	17	30	*12*	**220**	**8**	1	3	**4**	**5**
Blood/tissue transfer, blood product treatment	0	1	1	*4*	0	*0*	**1**	**3**	93	117	210	*9*	8	6	14	*6*	**224**	**8**	2	9	**11**	**14**
Blood contact possible	4	1	5	*18*	1	*50*	**6**	**20**	316	196	512	*21*	25	19	44	*18*	**556**	**21**	11	8	**19**	**25**
Infection associated with an endemic country	8	3	11	*39*	0	*0*	**11**	**37**	81	33	114	*5*	0	0	0	*0*	**114**	**4**	0	1	**1**	**1**
No exposure identified	7	0	7	*25*	1	*50*	**8**	**27**	510	238	749	*31*	70	49	119	*48*	**868**	**33**	15	5	**21**	**27**

1. Total includes one repeat donor whose previous donation was not tested.
2. Total includes one newly tested donor where gender not known from 1998.
3. Total includes one where gender, ethnicity and area of birth not known.
4. A seroconversion is defined as a detected infection in a repeat donor who has provided a negative donation within the previous year unless markers indicate a recent infection.

Table 1.6: Characteristics and probable exposure history of HIV infected blood donors, UK, and Republic of Ireland: 2018 and cumulative 1996-2018

	UK 2018								UK Cumulative: 1996-2018										ROI Cumulative			
	Newly tested				Previously tested		All:2018		Newly tested				Previously tested				All:1996-2018		All:1996-2018			
	Male	Female	Total	%	Total	%	Total	%	Male[1]	Female	Total	%	Male	Female	Total	%	Total	%	Male	Female	Total	%
Number	2	1	3	100	4	100	**7**	**100**	147	105	252	100	160	72	232	100	**484**	**100**	21	7	**28**	**100**
Number seroconverted (in 1 years prior to index)					2	50	**2**	**29**					87	33	120		**120**	**25**	2	2	**4**	**14**
Rate (per 100,000 donations)	2.8	0.8	1.5		0.2		**0.4**		6.0	3.2	4.4		0.6	0.3	0.4		**0.8**		1.2	0.4	**0.8**	
Mean age	39.0	51.6	45.3		50.6		**47.9**		34.0	31.4	32.7		37.5	35.7	36.6		**36.6**		30.3	37.9	**34.1**	
Ethnic group																						
White	2	1	3	100	4	100	**7**	**100**	82	58	140	56	146	63	209	90	**349**	**72**	21	7	**28**	**100**
Asian/ Asian British	0	0	0	0	0	0	**0**	**0**	15	4	19	7.5	9	1	10	4.3	**29**	**6**	0	0	**0**	**0**
Black/African/Caribbean/ Black British	0	0	0	0	0	0	**0**	**0**	37	34	71	28	0	6	6	2.6	**77**	**16**	0	0	**0**	**0**
Mixed and other	0	0	0	0	0	0	**0**	**0**	4	6	10	4	2	1	3	1.3	**13**	**2.7**	0	0	**0**	**0**
Not known	0	0	0	0	0	0	**0**	**0**	9	3	12	4.8	3	1	4	1.7	**16**	**3.3**	0	0	**0**	**0**
Area of birth																						
UK	0	1	1	33	3	75	**4**	**57**	59	51	110	44	119	52	171	74	**281**	**58**	0	0	**0**	**0**
Europe excl UK	2	0	2	67	1	25	**3**	**43**	12	6	18	7.1	8	5	13	5.6	**31**	**6.4**	20	7	**27**	**96**
Asia	0	0	0	0	0	0	**0**	**0**	10	2	12	4.8	2	0	2	0.9	**14**	**2.9**	0	0	**0**	**0**
Africa	0	0	0	0	0	0	**0**	**0**	27	30	57	23	1	1	2	0.9	**59**	**12**	1	0	**1**	**3.6**
Other	0	0	0	0	0	0	**0**	**0**	9	2	11	4.4	0	0	0	0	**11**	**2.3**	0	0	**0**	**0**
Not known	0	0	0	0	0	0	**0**	**0**	30	14	44	17	30	14	44	19	**88**	**18**	0	0	**0**	**0**
Probable exposure category																						
Injecting drug use (IDU)	0	0	0	0	0	0	**0**	**0**	4	0	4	1.6	0	1	1	0.4	**5**	**1**	1	0	**1**	**3.6**
Intranasal drug use	0	0	0	0	0	0	**0**	**0**	0	0	0	0	0	0	0	0	**0**	**0**	0	0	**0**	**0**
Sex between men (SBM)	0	0	0	0	1	25	**1**	**14**	53	0	53	21	85	0	85	37	**138**	**29**	7	0	**7**	**25**
Sex between men and women (SBMW)	1	1	2	67	3	75	**5**	**71**	75	97	172	68	63	70	133	57	**305**	**63**	12	7	**19**	**68**
Blood/tissue transfer, blood product treatment	0	0	0	0	0	0	**0**	**0**	0	0	0	0	0	0	0	0	**0**	**0**	0	0	**0**	**0**
Blood contact possible	0	0	0	0	0	0	**0**	**0**	5	2	7	2.8	2	0	2	0.9	**9**	**1.9**	1	0	**1**	**3.6**
Infection associated with an endemic country	0	0	0	0	0	0	**0**	**0**	0	1	1	0.4	0	0	0	0	**1**	**0.2**	0	0	**0**	**0**
No exposure identified	1	0	1	33	0	0	**1**	**14**	10	5	15	6	10	1	11	4.7	**26**	**5.4**	0	0	**0**	**0**

1. Includes one male who had sex between men and IDU risk exposure.

Table 1.7: Characteristics and probable exposure history of HTLV infected blood donors, UK, and Republic of Ireland: 2018 and cumulative 2002-2018

	UK 2018								UK Cumulative: 2002-2018										ROI	
	Newly tested				Previously tested		All:2018		Newly tested				Previously tested				All:2002-2018		All:2002-2018	
	Male	Female	Total	%	Total	%	Total	%	Male	Female	Total	%	Male	Female	Total	%	Total	%	Total	%
Number	2	5	7	100	0	0	**7**	**100**	71	178	249	100	3	11	14	100	**263**	**100**	**2**	**100**
Number seroconverted (in 1 year prior to index)							**0**	**0**					1	4	5	36	**5**	**1.9**	**0**	**0**
Rate (per 100,000 donations)	2.8	3.8	3.5		0		**0.4**		4.5	8.5	6.8		0.0	0.1	0.0		**0.7**		**0.1**	
Mean age	41.9	44.9	43.4		0	0	**44.2**		39.7	43.7	41.7		48.5	46.1	47.3		**42.8**		**30.1**	
Ethnic group																				
White	1	1	2	29	0	0	**2**	**29**	15	78	93	37	2	7	9	64	**102**	**39**	**2**	**100**
Asian/ Asian British	0	0	0	0	0	0	**0**	**0**	25	7	32	13	0	1	1	7.1	**33**	**13**	**0**	**0**
Black/African/Caribbean/ Black British	0	4	4	57	0	0	**4**	**57**	27	76	103	41	1	3	4	29	**107**	**41**	**0**	**0**
Mixed and other	1	0	1	14	0	0	**1**	**14**	4	12	16	6.4	0	0	0	0	**16**	**6.1**	**0**	**0**
Not known	0	0	0	0	0	0	**0**	**0**	0	5	5	2	0	0	0	0	**5**	**1.9**	**0**	**0**
Area of birth																				
UK	1	2	3	43	0	0	**3**	**43**	23	97	120	48	1	8	9	64	**129**	**49**	**0**	**0**
Europe excl UK	0	0	0	0	0	0	**0**	**0**	0	11	11	4.4	0	1	1	7.1	**12**	**4.6**	**2**	**100**
Asia	1	0	1	14	0	0	**1**	**14**	23	9	32	13	0	0	0	0	**32**	**12**	**0**	**0**
Africa	0	0	0	0	0	0	**0**	**0**	6	5	11	4.4	1	0	1	7.1	**12**	**4.6**	**0**	**0**
Other	0	2	2	29	0	0	**2**	**29**	16	42	58	23	1	2	3	21	**61**	**23**	**0**	**0**
Not known	0	1	1	14	0	0	**1**	**14**	3	14	17	6.8	0	0	0	0	**17**	**6.5**	**0**	**0**
Probable exposure category																				
Injecting drug use (IDU)	0	0	0	0	0	0	**0**	**0**	2	1	3	1.2	0	0	0	0	**3**	**1.1**	**0**	**0**
Intranasal drug use	0	0	0	0	0	0	**0**	**0**	0	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
Sex between men (SBM)	0	0	0	0	0	0	**0**	**0**	1	0	1	0.4	0	0	0	0	**1**	**0.4**	**0**	**0**
Sex between men and women (SBMW)[1]	1	0	1	14	0	0	**1**	**14**	8	58	66	27	2	7	9	64	**75**	**29**	**2**	**100**
Blood/tissue transfer, blood product treatment	0	0	0	0	0	0	**0**	**0**	2	10	12	4.8	0	0	0	0	**12**	**4.6**	**0**	**0**
Blood contact possible	1	0	1	14	0	0	**1**	**14**	4	0	4	1.6	0	2	2	14	**6**	**2.3**	**0**	**0**
Infection associated with an endemic country[1]	0	4	4	57	0	0	**4**	**57**	39	86	125	50	1	1	2	14	**127**	**48**	**0**	**0**
No exposure identified	0	1	1	14	0	0	**1**	**14**	15	23	38	15	0	1	1	7.1	**39**	**15**	**0**	**0**

1. Includes mother to infant risk.

Table 1.8: Characteristics and probable exposure history of syphilis infected blood donors, UK, and Republic of Ireland: 2018 and cumulative 1996-2018

	Newly tested				Previously tested				All:2018		Newly tested[2]				Previously tested				All: 1996-2018		All:1996-2018			
	Male	Female	Total	%	Male	Female	Total	%	Total	%	Male	Female	Total	%	Male	Female	Total[3]	%	Total[4]	%	Male	Female	Total	%
Number	37	12	49	100	19	9	28	100	**77**	**100**	808	452	1260	100	449	209	660	100	**1921**	**100**	59	27	**86**	**100**
Recent infections acquired within 12 months[1]					13	8	21	75	**21**						138	54	192	29	**192**		19	5	**24**	**28**
Rate (per 100,000 donations)	52.3	0.9	24.3		2.6	0.9	1.6		**4.0**		33.2	13.9	22.1		1.7	0.8	1.3		**3.3**		3.3	1.5	**2.4**	
Mean age	42.5	40.3	41.4		42.0	36.7	39.3		**40.4**		41.5	42.5	42.0		44.3	43.6	44.0		**44.3**		40.6	45.0	**42.8**	
Ethnic group																								
White	23	10	33	67	18	8	26	93	**59**	**77**	386	263	649	52	331	162	494	75	**1143**	**59.5**	57	24	**81**	**94**
Asian/ Asian British	6	0	6	12	1	0	1	3.6	**7**	**9.1**	176	26	202	16	17	8	25	3.8	**227**	**11.8**	0	1	**1**	**1.2**
Black/African/Caribbean/ Black British	3	1	4	8.2	0	0	0	0	**4**	**5.2**	104	78	182	14	10	13	23	3.5	**205**	**10.7**	0	0	**0**	**0**
Mixed and other	1	1	2	4.1	0	0	0	0	**2**	**2.6**	30	22	52	4.1	4	0	4	0.6	**56**	**2.9**	0	0	**0**	**0**
Not known	3	0	3	6.1	0	1	1	3.6	**4**	**5.2**	112	63	175	14	87	26	114	17	**290**	**15.1**	1	0	**1**	**1.2**
Area of birth																								
UK	17	6	23	47	18	6	24	86	**47**	**61**	243	182	425	34	240	128	368	56	**793**	**41.3**	2	0	**2**	**2.3**
Europe excl UK	4	3	7	14	0	0	0	0	**7**	**9.1**	81	39	120	9.5	12	4	16	2.4	**136**	**7.1**	53	23	**76**	**88**
Asia	4	0	4	8.2	0	0	0	0	**4**	**5.2**	138	26	164	13	9	6	15	2.3	**179**	**9.3**	0	1	**1**	**1.2**
Africa	4	0	4	8.2	0	0	0	0	**4**	**5.2**	94	31	125	9.9	11	6	17	2.6	**142**	**7.4**	0	0	**0**	**0**
Other	1	1	2	4.1	0	0	0	0	**2**	**2.6**	44	58	102	8.1	12	10	22	3.3	**124**	**6.5**	0	0	**0**	**0**
Not known	6	2	8	16	1	3	4	14	**12**	**16**	209	116	325	26	165	55	221	33	**547**	**28.5**	3	1	**4**	**4.7**
Probable exposure category																								
Injecting drug use (IDU)	0	0	0	0	0	0	0	0	**0**	**0**	1	0	1	0.1	0	0	0	0	**1**	**0.1**	0	0	**0**	**0**
Intranasal drug use	0	0	0	0	0	0	0	0	**0**	**0**	0	0	0	0	0	0	0	0	**0**	**0.0**	0	0	**0**	**0**
Sex between men (SBM)	10	0	10	20	5	0	5	18	**15**	**19**	53	0	53	4.2	37	0	37	5.6	**90**	**4.7**	3	0	**3**	**3.5**
Sex between men and women (SBMW)	14	12	26	53	13	8	21	75	**47**	**61**	269	213	482	38	149	98	247	37	**729**	**37.9**	40	18	**58**	**67**
Blood/tissue transfer, blood product treatment	0	0	0	0	0	0	0	0	**0**	**0**	5	1	6	0.5	1	0	1	0.2	**7**	**0.4**	0	0	**0**	**0**
Blood contact possible	0	0	0	0	0	0	0	0	**0**	**0**	6	3	9	0.7	0	0	0	0	**9**	**0.5**	0	0	**0**	**0**
Infection associated with an endemic country	0	0	0	0	0	0	0	0	**0**	**0**	31	29	60	4.8	8	10	18	2.7	**78**	**4.1**	0	2	**2**	**2.3**
No exposure identified	12	0	12	24	1	1	2	7.1	**14**	**18**	443	206	649	52	254	101	357	54	**1007**	**52.4**	16	7	**23**	**27**

NOTE: Treponema antibody testing detects both recent and past syphilis caused by the bacterium *T. pallidum*. It will also pick up diseases caused by other treponemes such as yaws caused by *T. pertenue* and pinta caused by *T. carateum*, endemic in some countries but both are rare in the UK.

1. Seroconversion status not assigned to syphilis infections.
2. includes one donor infected with both syphilis and HCV; IDU is the most likely exposure category for the HCV infection.
3. Includes two previously tested donors where gender not known.
4. Includes one donor where donor status not known.

Table 1.9 Additional testing in England: 2018

Marker	No. donations tested	*% of all donations tested*	No. repeat reactive at screening[1]	*% repeat reactive*	No. confirmed positive[2]	*% confirmed positive*
Anti-HBc[1,2]	762	*0.05*	16	*2.10*	8	*1.05*
Anti-*T.cruzi*	1,677	*0.11*	0	*0.00*	0	*0.00*
Anti-malaria	32,910	*2.07*	952	*2.89*	585	*1.78*
West Nile virus NAT	38,679	*2.43*	0	*0.00*	0	*0.00*

1. Reactive at screening for anti-HBc and anti-HBs negative or <100 mIU/ml.
2. Confirmed anti-HBc positive AND anti-HBs <100 mIU/ml.
3. Anti-HBc testing for donors with recent endoscopy, piercing and complementary therapies (eg acupuncture) was discontinued at the end of November 2017

Table 1.10: The estimated risk (and 95% confidence interval) that a potentially infectious HBV, HCV and HIV window period donation is not detected on testing (this is not equal to transmission risk), UK: 2016-2018

Risk due to infectious window period		HBV[1]	HCV[2]	HIV[3]
Number of potentially infectious window period donations not detected in 1 million donations tested (95% CI). This is equal to risk x 1,000,000	All donations[4]	1.04 (0.54 - 2.39)	< 0.01 (0.00 - 0.04)	0.04 (0.01 - 0.07)
	Donations from new donors	2.00 (0.67 - 5.87)	0.02 (0.00 - 0.32)	0.01 (0.00 - 0.05)
	Donations from repeat donors	0.94 (0.43 - 1.76)	<0.01 (0.00 - 0.01)	0.04 (0.02 - 0.10)
Number of donations (millions) that are tested before 1 potentially infectious window period donation is not detected. This is equal to 1/(risk x 1,000,000)	All donations	1 million	171 million	28 million
	Donations from new donors	0.5 million	47 million	84 million
	Donations from repeat donors	1.1 million	237 million	26 million

1. HBV testing assumed all donations were tested for markers of HBsAg and HBV DNA using NAT with a window period of 30 days.
2. Anti-HCV testing and HCV RNA testing with a window period 4 of days.
3. Combined HIV antigen/antibody testing and HIV NAT with a window period of 9 days.
4. The risk due to a window period donation amongst all donations was calculated as the weighted average of the risk amongst new and repeat donors, weighted according to the number of donations made from new and repeat donors. All molecular screening was performed on pooled samples of 24 donations.

These estimates were produced using data, published results from papers and opinion collected by the NHSBT/PHE Epidemiology Unit. Data are checked regularly to ensure accuracy, however, the estimates may be revised if new or additional information is received.

2. Bacterial screening

Table 2.1: Bacterial screening of platelets by NHSBT using BacT/ALERT. Components tested and results of confirmatory investigations by NBL: 2018

	No. components screened[4]	%	No. Screen Reactive	%	Confirmed Positive[1]	%	Indeterminate Positive[2]	%	Confirmed Negative	%	Indeterminate Negative[3]	%
Apheresis Platelets	139034	49.6%	251	0.18%	33	0.02%	74	0.05%	66	0.05%	78	0.06%
Pooled Platelets	141448	50.4%	335	0.24%	104	0.07%	88	0.06%	67	0.05%	76	0.05%
Total	**280482**	**N/A**	**586**	**0.21%**	**137**	**0.05%**	**162**	**0.06%**	**133**	**0.05%**	**154**	**0.05%**

Table 2.2: Bacterial screening of platelets: Components tested and results of confirmatory investigations by SNBTS: 2018

	No. components screened[4]	%	No. Screen Reactive	%	Confirmed Positive[1]	%
Apheresis Platelets	8384	51.8%	51	0.61%	3	0.04%
Pooled Platelets	7816	48.2%	44	0.56%	5	0.06%
Total	**16200**	**N/A**	**95**	**0.59%**	**8**	**0.05%**

Table 2.3: Bacterial screening of platelets: Components tested and results of confirmatory investigations by NIBTS: 2018

	No. components screened[4]	%	No. Screen Reactive	%	Confirmed Positive[1]	%
Apheresis Platelets	4007	76.1%	11	0.27%	1	0.02%
Pooled Platelets	1259	23.9%	2	0.16%	0	0.00%
Total	**5266**	**N/A**	**13**	**0.25%**	**1**	**0.02%**

Table 2.4: Bacterial screening of platelets: Components tested and results of confirmatory investigations by WBS*: 2018

	No. components screened[4]	%	No. Screen Reactive	%	Confirmed Positive[1]	%	Indeterminate Positive[2]	%
Apheresis Platelets	4470	33.1%	19	0.43%	4	0.09%	6	0.13%
Pooled Platelets	9026	66.9%	27	0.30%	1	0.01%	8	0.09%
Total	**13496**	**N/A**	**46**	**0.34%**	**5**	**0.04%**	**14**	**0.10%**

*Screening methods in Wales changed mid-year from testing on day 1 and day 4 to testing on day 2 only.

Box 2.1: Definitions

[1] **Confirmed positive -** Positivity in one or more tests and a speciation match in the index bottle and platelet concentrate (in one or more related apheresis packs).

[2] **Indeterminate positive -** Positivity and organisms isolated from either the index bottle or pack but not both, this may be due to unavailability of the platelet pack due to it having been issued and transfused.

[3] **Confirmed negative -** The bottle and index or associated packs are also negative.

[4] **Indeterminate negative -** The bottle is confirmed negative but the index or associated packs are not available to confirm a negative result.

Table 2.5: Numbers and likely source of organisms isolated on bacterial screening: 2018

Speciation	Apheresis		Pooled	
	Confirmed Positive	Indeterminate Positive	Confirmed Positive	Indeterminate Positive
Gram positive rods-skin flora				
Corynebacterium appendicis	-	-	-	1
Corynebacterium jeikeium	-	1	-	-
Propionibacterium acnes	12	39	71	53
Propionibacterium granulosum	-	1	-	2
Gram positive cocci- skin flora				
Gemella haemolysans	-	1	-	-
Gemella morbillorum	-	1	1	-
Staphylococcus aureus	-	-	-	1
Staphylococcus capitis	4	4	2	6
Staphylococcus epidermidis	2	8	3	4
Staphylococcus lugdunensis	1	-	-	-
Staphylococcus saccharolyticus	1	5	14	10
Staphylococcus schleiferi	-	-	1	-
Staphylococcus warneri	-	2	-	2
Oropharyngeal flora				
Actinomyces naeslundii	-	1	-	-
Actinomyces viscosus	-	1	-	-
Aggregatibacter aphrophilus	-	2	-	-
Bifidobacterium spp	-	1	-	-
Lactobacillus rhamnosus	-	1	-	-
Parvimonas micra	-	1	-	-
Rothia aeria	-	1	-	-
Streptococcus anginosus	-	1	-	-
Streptococcus dysgalactiae	1	-	2	2
Streptococcus dysgalactiae ssp equisimilis	-	-	1	-
Streptococcus mitis	6	1	-	-
Streptococcus pneumoniae	-	-	2	-
Streptococcus spp	1	-	1	-
Other bacteria				
Acinetobacter Iwoffii	-	-	-	1
Bacillus circulans	-	-	-	2
Micrococcus luteus	-	1	-	2
Micrococcus species	-	-	-	1
Paenibacillus	-	1	-	-
Serratia marcescens	-	-	1	-
Gut flora				
Bacteroides stercoris	-	-	-	1
Escherichia coli	1	-	-	-
Klebsiella pneumoniae	-	-	1	-
Lactococcus garvieae	-	-	1	-
Streptococcus agalactiae	1	-	3	-
Streptococcus infantarius	3	-	-	-
TOTAL	**33**	**74**	**104**	**88**

3. Tissue and cell donor surveillance

Table 3.1: The number and rate of markers of infection in living surgical bone and deceased tissue donors as tested by NHSBT: 2018 and 2006-2018

Year of donation	Donor type	Total number tested		Number positive						Total
				HBV[1]	HCV	HEV[2]	HIV	HTLV	Syphilis	
2018	Deceased	3,376	No.	3	1	2	0	1	1	**8**
			Rate[3]	88.9	29.6	59.2	0.0	0.0	29.6	**237.0**
	Surgical bone	488	No.	0	0	0	0	0	0	**0**
			Rate[3]	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2006-2018	Deceased[4]	27,655	No.	32	10	2	3	3	43	**93**
			Rate[3]	115.7	36.2	7.2	10.8	10.8	155.5	**336.3**
	Surgical bone	33,074	No.	8	13	0	1	1	25	**48**
			Rate[3]	24.2	39.3		3.0	3.0	75.6	**145.1**

1. Excludes positivity for anti-HBc only, i.e. HBsAg and/or HBV nucleic acid testing (NAT) positive only.
2. HEV testing data are reported for 2018 only.
3. Rate per 100,000 donors.
4. Data for deceased donors who gave corneas only were included from 2012.

Table 3.2: The number and rate of cord blood donors positive for markers of infection, as tested by NHSBT: 2018 and 2006-2018

Year of donation	Total number tested		Number positive						Total
			HBV[1]	HCV	HEV[2]	HIV	HTLV	Syphilis	
2018	1,120	No.	0	0	0	0	0	0	**0**
		Rate[3]	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2006 - 2018	24,434	No.	1	13	0	0	11	9	**34**
		Rate[3]	4.1	53.2	0.0	0.0	45.0	36.8	**139.2**

1. Excludes positivity for anti-HBc, only i.e. HBsAg and/or HBV NAT positive only.
2. HEV testing data are reported from 2018.
3. Rate per 100,000 donors.

Table 3.3: The number and rate of cord blood donors positive for markers of malaria and *Trypanosoma cruzi*, as tested by NHSBT: 2018 and 2006-2018

Year of donation	Malaria			*Trypanosoma cruzi*		
	Total number tested	Number positive	Rate[1]	Total number tested	Number positive	Rate[1]
2018	360	19	5277.8	0	0	0.0
2006-2018	7471	207	2770.7	491	0	0.0

1. Rate per 100,000 donors.

Table 3.4: The number and rate of tissue and cell donors positive for markers of infection, as tested by NIBTS: 2018 and 2006-2018

Year of donation	Donor type		Total number tested	Number positive						Total
				HBV[1]	HCV	HEV	HIV	HTLV	Syphilis	
2018	Surgical bone	Samples	312	0	0	0	0	0	0	**0**
		Rate		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2006-2018	Surgical bone	Samples[2]	3,351	0	1	0	0	0	2	**3**
		Rate		0.0	29.8	0.0	0.0	0.0	59.7	**89.5**
	Cord blood	Samples[2]	1,896	0	0	0	0	0	0	**0**
		Donors	1,138	0	0	0	0	0	0	**0**
		Rate		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

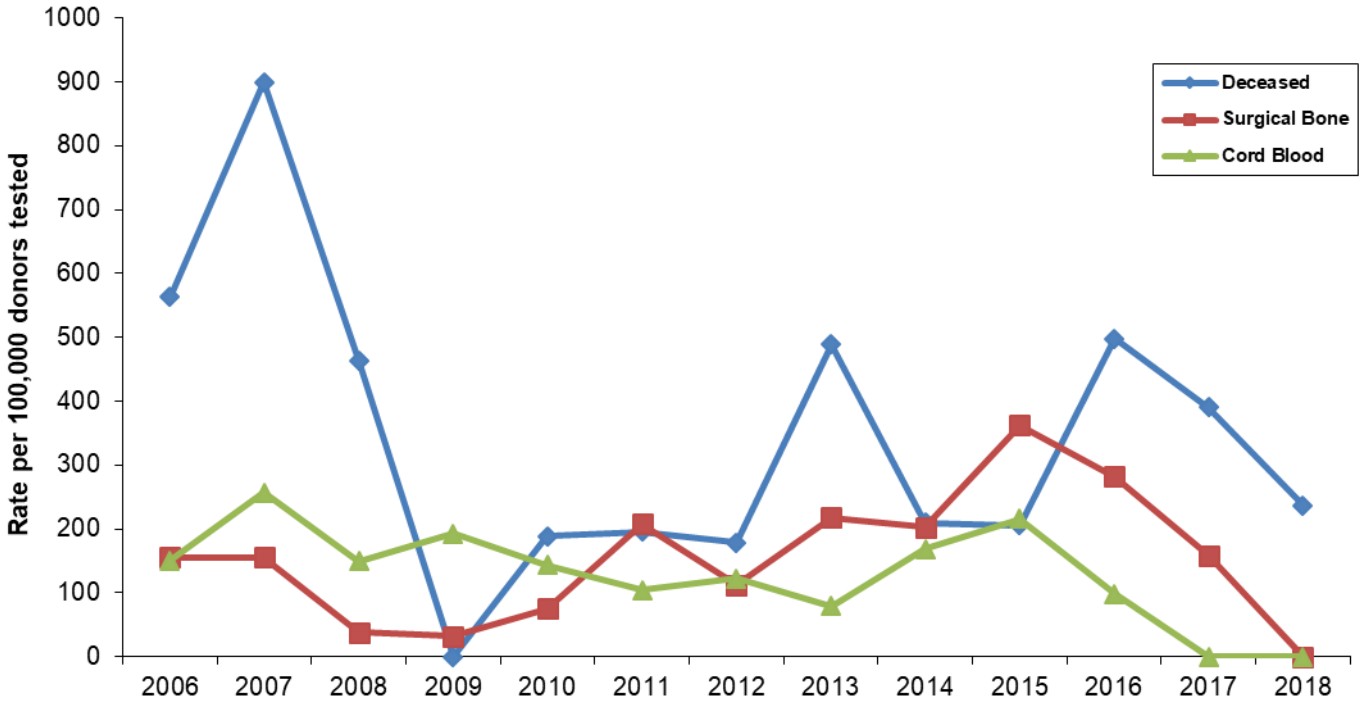
1. Excludes testing for anti-HBc, i.e. HBsAg and/or HBV NAT positive only.
2. Number of donors tested estimated as 60% of all samples tested (B. Webb, personal communication).

Table 3.5: Age, ethnicity and risk exposures reported for living surgical bone and deceased tissue donors positive for markers of infection, as tested by NHSBT: 2006-2018

Characteristics (Maternal characteristics for cord blood donors)	Deceased[1]		Surgical bone		Cord blood
	Male	Female	Male	Female	
Number	62	30	27	21	34
Mean age (years)	68	64	66	68	33
Ethnic background					
White	12	14	20	14	15
Black African	0	0	1	0	7
Black Caribbean	0	0	0	1	3
Chinese	0	0	0	1	0
Indian/ Pakistani/ Bangladeshi	1	0	0	0	5
Not available	49	14	6	5	4
Risk exposures reported					
Injecting drug use	0	0	0	0	0
Sex between men and women	0	0	7	6	6
Blood transfusion recipient	0	0	0	2	3
Other blood contact[2]	0	0	2	4	2
Mother to infant	0	0	0	0	1
Born in an endemic country	0	0	1	1	5
Interviewed – no risk identified	0	0	6	2	10
Incomplete follow-up	62	30	11	6	7

1. Not applicable. Deceased donors cannot be interviewed and risk exposures are rarely reported by next of kin.
2. Other blood contact includes tattoo/acupuncture/body piercing, nosocomial exposure and/or possible occupational exposure.

Figure 3.1: Rate of living surgical bone, deceased tissue donors and cord blood donors positive for markers of infection, as tested by NHSBT: 2001-2018



Excludes positivity for anti-HBc only, i.e. HBsAg and/or HBV NAT positive only.

4. Deceased solid organ donor surveillance

Table 4.1: The number and percentage rate of markers of infection identified among all consenting organ donors, and those proceeding to donate an organ, UK: 2018

	HBsAg		HBcAb		HCV		HIV		CMV		HTLV		HEV		EBV		Toxo		Syphilis		Malaria		T. cruzi	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All potential organ donors																								
Negative	1999	99.6	1945	96.9	1978	98.6	2004	99.9	972	48.4	2001	99.7	621	30.9	144	7.2	1659	82.7	1954	97.4	61	3.0	29	1.4
Reactive	7	0.35	59	2.9	26	1.3	2	0.1	1018	50.7	3	0.15	2	0.1	1734	86.4	312	15.5	8	0.4	7	0.3	-	-
Not known[1]	1	0.05	3	0.15	3	0.15	1	0.0	17	0.8	3	0.15	1384	69.0	129	6.4	36	1.8	45	2.2	1939	96.6	1978	98.6
Total	2007		2007		2007		2007		2007		2007		2007		2007		2007		2007		2007		2007	
All proceeding solid organ donors																								
Negative	1617	99.9	1576	97.3	1612	99.6	1619	100.0	800	49.4	1617	99.9	557	34.4	125	7.7	1357	83.8	1580	97.6	55	3.4	27	1.7
Reactive	2	0.1	42	2.6	5	0.3	-	-	808	49.9	1	0.1	2	0.1	1395	86.2	239	14.8	5	0.3	7	0.4	-	-
Not known[1]	-	-	1	0.1	2	0.1	-	-	11	0.7	1	0.1	1060	65.5	99	6.1	23	1.4	34	2.1	1557	96.2	1592	98.3
Total	1619		1619		1619		1619		1619		1619		1619		1619		1619		1619		1619		1619	
Proceeding donors after brain-stem death																								
Negative	998	99.8	972	97.2	994	99.4	1000	100.0	483	48.3	999	128.2	334	33.4	70	7.0	848	84.8	972	97.2	40	4.0	18	1.8
Reactive	2	0.2	28	2.8	4	0.4	-	-	512	51.2	1	0.1	-	-	873	87.3	141	14.1	4	0.4	4	0.4	-	-
Not known[1]	-	-	-	-	2	0.2	-	-	5	0.5	-	-	666	66.6	57	5.7	11	1.1	24	2.4	956	95.6	982	98.2
Total	1000		1000		1000		1000		1000		1000		1000		1000		1000		1000		1000		1000	
Proceeding donors after cardiac death																								
Negative	619	100.0	604	97.6	618	99.8	619	100.0	317	51.2	618	113.6	223	36.0	55	8.9	509	82.2	608	98.2	15	2.4	9	1.5
Reactive	-	-	14	2.3	1	0.2	-	-	296	47.8	-	-	2	0.3	522	84.3	98	15.8	1	0.2	3	0.5	-	-
Not known[1]	-	-	1	0.2	-	-	-	-	6	1.0	1	0.2	394	63.7	42	6.8	12	1.9	10	1.6	601	97.1	610	98.5
Total	619		619		619		619		619		619		619		619		619		619		619		619	
Actual solid organ donors from whom organs were transplanted																								
Negative	1540	99.9	1500	97.3	1536	99.6	1542	100.0	769	49.9	1540	99.9	536	34.8	121	7.8	1296	84.0	1505	97.6	54	3.5	27	1.8
Reactive	2	0.1	41	2.7	4	0.3	-	-	762	49.4	1	0.1	2	0.1	1322	85.7	225	14.6	5	0.3	7	0.5	-	-
Not known[1]	-	-	1	0.1	2	0.1	-	-	11	0.7	1	0.1	1004	65.1	99	6.4	21	1.4	32	2.1	1481	96.0	1515	98.2
Total	1542		1542		1542		1542		1542		1542		1542		1542		1542		1542		1542		1542	

1. For malaria and *T. cruzi*, not known includes donors not tested.

Table 4.2: Characteristics of donors from whom at least one organ was transplanted and who were reactive for at least one marker, UK: 2018

			Age		Ethnicity					
Marker	Gender	Number	Median age	IQR	White	Asian or Asian/British	Black or Black-British	Chinese/Oriental	Other/Mixed	Unknown/not reported
HBsAg	Male	2	47	(46 - 48)	-	1	1	-	-	-
	Female	-	-	-	-	-	-	-	-	-
Anti-HBc	Male	21	63	(51 - 68)	17	3	1	-	-	-
	Female	20	46	(38.5 - 56.5)	12	4	-	1	3	-
HCV	Male	4	44	(26.5 - 56.5)	4	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
HIV	Male	-	-	-	-	-	-	-	1	-
	Female	-	-	-	-	-	-	-	-	-
CMV	Male	373	53	(40 - 65)	320	21	10	-	20	2
	Female	389	59	(47 - 69)	349	10	8	2	14	6
HTLV	Male	-	-	-	1	-	-	-	-	-
	Female	1	66	-	-	-	-	-	-	-
HEV	Male	2	57	(40 - 74)	-	-	-	-	-	-
	Female	-	-	-	2	-	-	-	-	-
EBV	Male	695	52	(40 - 63)	640	21	11		21	2
	Female	627	56	(46 - 66)	581	12	9	2	16	7
Toxo	Male	144	55	(46.5 - 68.5)	135	1.0	4	-	4	-
	Female	81	64	(53 - 70)	72	1	2	-	6	-
Syphilis	Male	4	55.5	(42 - 59.5)	2	1	-	-	1	-
	Female	1	46	-	-	-	-	-	1	-
Malaria	Male	6	48.5	(43 - 63)	-	3	3	-	-	-
	Female	1	62	-	-	1	-	-	-	-
T. cruzi	Male	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-

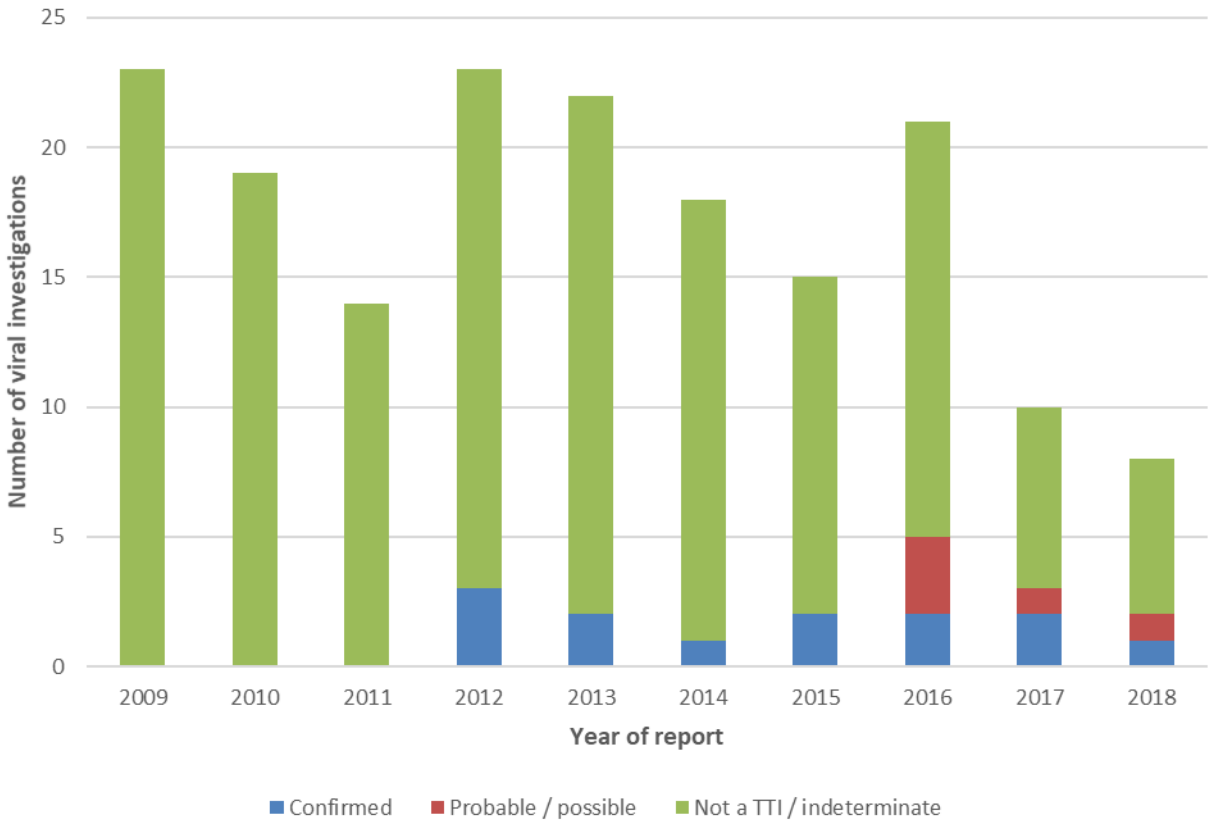
5. Transfusion-transmitted infections

Table 5.1: Number of confirmed TTI incidents reported to the NHSBT/PHE Epidemiology Unit by year of transfusion and infection, UK: 1995-2018

Year of transfusion*	Number of incidents (recipients) by infection										
	Bacteria	HAV	HBV	HCV	HEV	HIV	HTLV I	Parvovirus (B19)	Malaria	vCJD/ prion	**Total**
Pre 1998	3 (3)	1 (1)	3 (3)	2 (2)	-	1 (3)	2 (2)	-	1 (1)	3 (3)	**16 (18)**
1998	4 (4)	-	1 (1)	-	-	-	-	-	-	-	**5 (5)**
1999	4 (4)	-	2 (3)	-	-	-	-	-	-	‡ (1)	**6 (8)**
2000	7 (7)	1 (1)	1 (1)	-	-	-	-	-	-	-	**9 (9)**
2001	5 (5)	-	-	-	-	-	-	-	-	-	**5 (5)**
2002	1 (1)	-	1 (1)	-	-	1 (1)†	-	-	-	-	**3 (3)**
2003	3 (3)	-	1 (1)	-	-	-	-	-	1 (1)	-	**5 (5)**
2004	††	-	-	-	1 (1)	-	-	-	-	-	**1 (1)**
2005	2 (2)	1 (1)	1 (1)	-	-	-	-	-	-	-	**4 (4)**
2006	2 (2)	-	-	-	-	-	-	-	-	-	**2 (2)**
2007	3 (3)	-	-	-	-	-	-	-	-	-	**3 (3)**
2008	4 (6)	-	-	-	-	-	-	-	-	-	**4 (6)**
2009	2 (3)	-	-	-	-	-	-	-	-	-	**2 (3)**
2010	-	-	-	-	-	-	-	-	-	-	**-**
2011	-	-	1 (2)	-	1 (2)	-	-	-	-	-	**2 (4)**
2012	-	-	1 (1)	-	1 (1)	-	-	1(1)	-	-	**3 (3)**
2013	-	-	-	-	-	-	-	-	-	-	**-**
2014	-	-	-	-	2 (3)	-	-	-	-	-	**2(3)**
2015	1(1)	-	-	-	4 (5)	-	-	-	-	-	**5(6)**
2016	-	-	-	-	1 (1)	-	-	-	-	-	**1(1)**
2017	-	1(1)	-	-	-	-	-	-	-	-	**1(1)**
2018	-	-	-	-	1 (1)	-	-	-	-	-	**1(1)**
Total	**41**	**4**	**12**	**2**	**11**	**2**	**2**	**1**	**2**	**3**	**80**
	44	4	14	2	14	4	2	1	2	4	**91**
Deaths	11	0	0	0	1	0	0	0	1	3	**16**

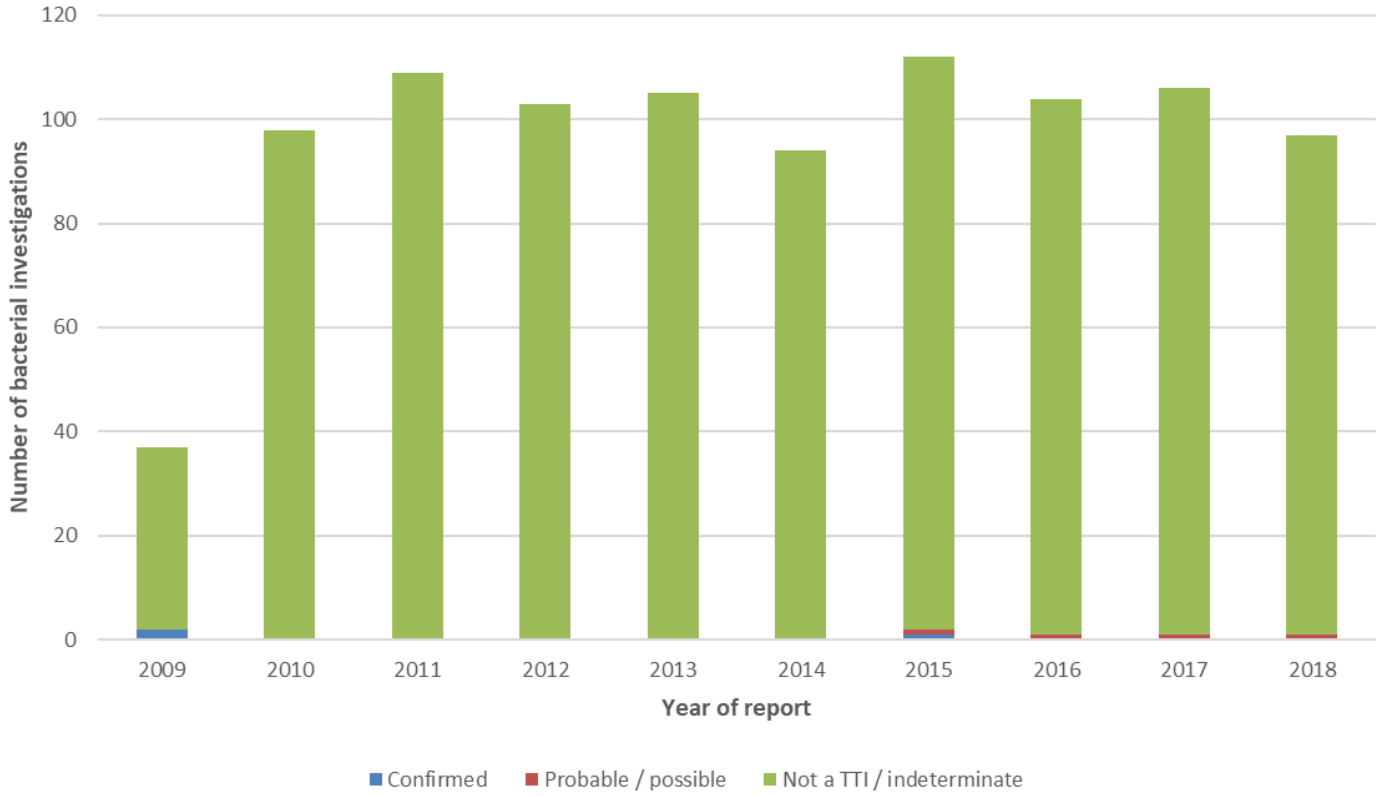
*No screening was in place for vCJD, HTLV, HAV, HEV or parvovirus B19 at the time of the documented transmissions. In both malaria transmissions, malaria antibody testing was not applicable at the time according to information supplied at donation.
** Year of transfusion may be prior to year of report to SHOT due to delay in recognition of chronic infection.
† The two HIV incidents were associated with window period donations (anti-HIV negative/HIV RNA positive) before HIV NAT screening was in place. A third window period donation in 2002 was transfused to an elderly patient, who died soon after surgery. The recipient's HIV status was therefore not determined and not included.
†† In 2004 there was an incident involving contamination of a pooled platelet pack with Staphyloccoccus epidermidis, which did not meet the TTI definition because transmission to the recipient was not confirmed, but it would seem likely. This case was classified as "not transfusion-transmitted".
‡ Same blood donor as one of the 1997 transmissions so counted as the same incident; note: counted as two separate incidents in previous reports.
§ A further prion case died but transfusion was not implicated as the cause of death. The outcome was assigned to major morbidity instead because although there was post-mortem evidence of abnormal prion proteins in the spleen the patient had died of a condition unrelated to vCJD and had shown no symptoms of vCJD prior to death.

Figure 5.1: Viral TTI investigations reported to NHSBT/PHE Epidemiology Unit, by year of report and investigation outcome, UK: 2009-2018



This figure is derived from published SHOT report data and does not include those reports that were withdrawn e.g. due to infection discovered to be present prior to transfusion(s) or more likely risk factor present.

Figure 5.2: Bacterial TTI investigations reported to NHSBT/PHE Epidemiology Unit, by year of report and investigation outcome, UK: 2009-2018



This figure is derived from published SHOT report data and does not include those reports that were withdrawn e.g. due to infection discovered to be present prior to transfusion(s) or more likely risk factor present.