

# **Supplementary data tables and figures: 2019**

NHS Blood and Transplant and Public Health England Epidemiology Unit

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## Summary

This document contains supplementary data to those presented in the NHS Blood and Transplant (NHSBT)/Public Health England (PHE) Epidemiology Unit Annual Review 2019, 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: Data in Context. Annual Review from the NHS Blood and Transplant / Public Health England Epidemiology Unit, 2019. London, November 2020.

<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

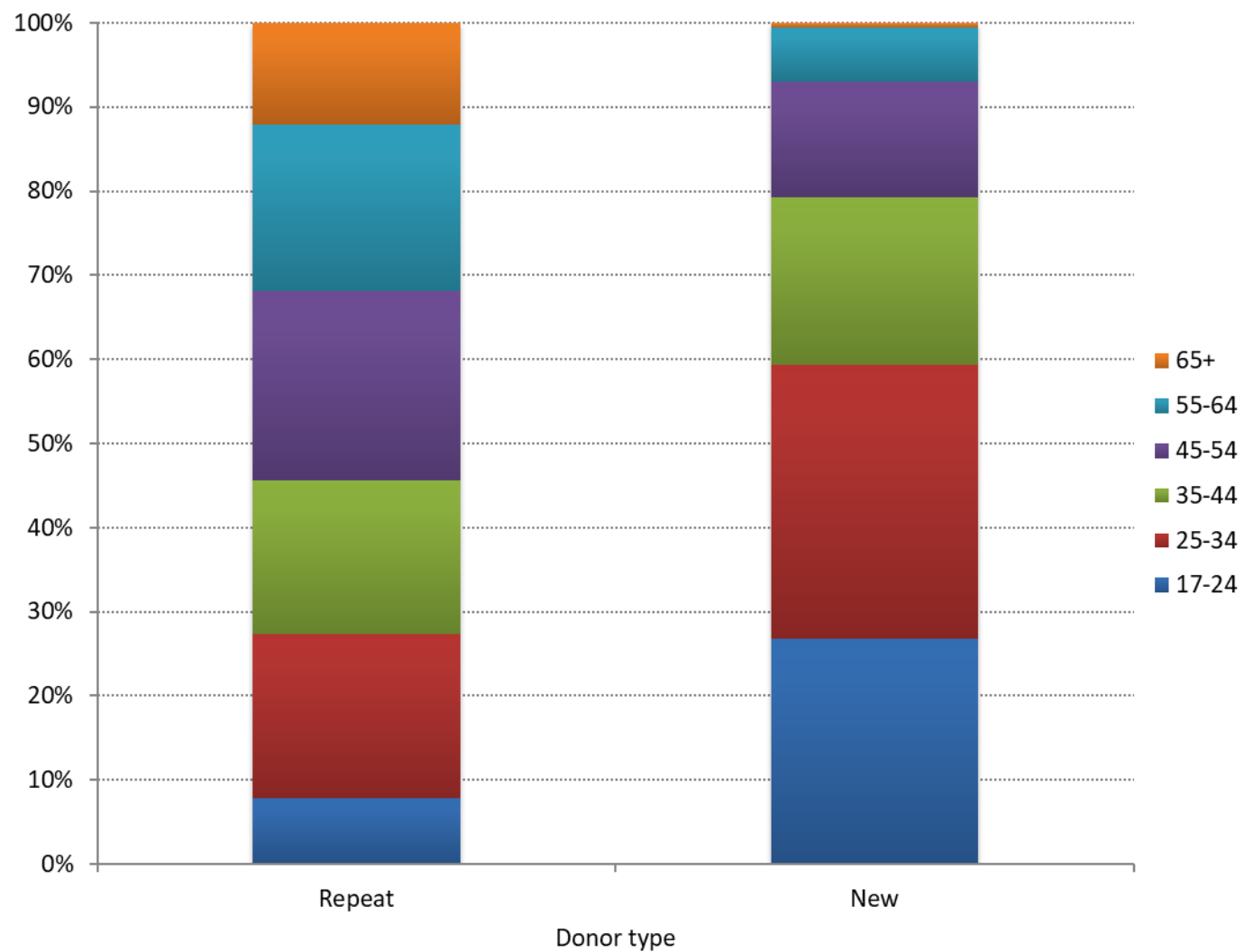
# 1. Blood donor surveillance

**Table 1.1: Summary of demographic characteristics of whole blood donors in England: 2019**

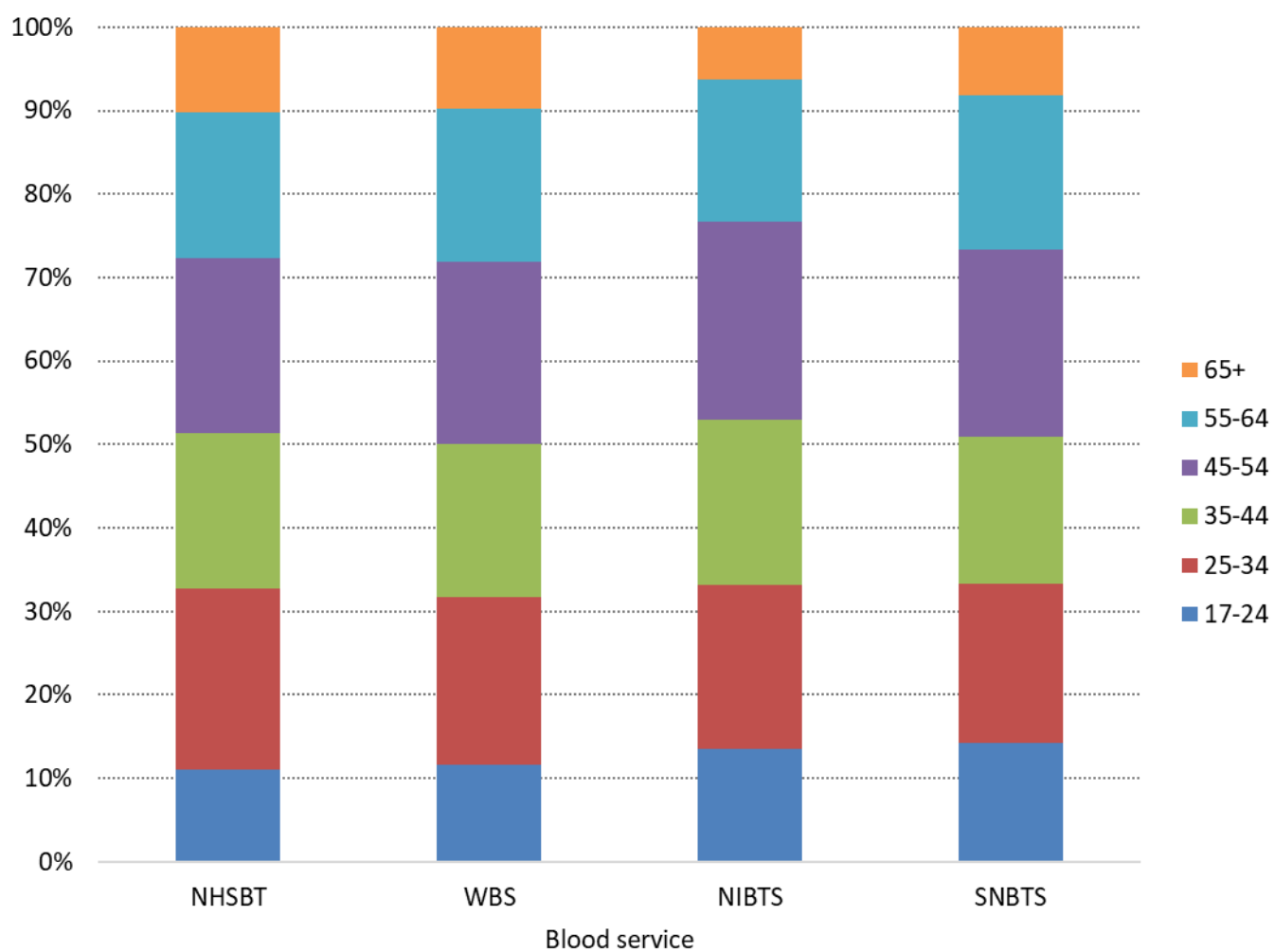
Gender	All donors		New donors		
	n	% all	n	% new	% category <sup>1</sup>
Male	356,095	43.1	56,987	40.6	16.0
Female	469,268	56.9	83,231	59.4	17.7
<b>Age group</b>					
17-24	91,105	11.0	37,600	26.8	41.3
25-34	179,323	21.7	45,652	32.6	25.5
35-44	153,357	18.6	27,957	19.9	18.2
45-54	173,677	21.0	19,242	13.7	11.1
55-64	144,163	17.5	8,981	6.4	6.2
65+	83,738	10.1	786	0.6	0.9
<b>Ethnicity</b>					
White	765,621	92.8	122,454	87.3	16.0
Asian/Asian British	24,918	3.0	7,981	5.7	32.0
Black/Black British	8,476	1.0	3,173	2.3	37.4
Mixed and other	17,220	2.1	5,620	4.0	32.6
Not known	9,128	1.1	990	0.7	10.8
<b>Residence</b>					
East Midlands	82,265	10.0	13,784	9.8	16.8
East of England	105,906	12.8	15,218	10.9	14.4
London	85,095	10.3	19,579	14.0	23.0
North East	36,240	4.4	6,275	4.5	17.3
North West	91,291	11.1	15,803	11.3	17.3
South Central	72,612	8.8	11,136	7.9	15.3
South East Coast	72,706	8.8	10,778	7.7	14.8
South West	101,518	12.3	15,730	11.2	15.5
West Midlands	65,587	7.9	10,873	7.8	16.6
Yorkshire and The Humber	81,091	9.8	13,979	10.0	17.2
Northern Ireland	108	0.0	50	0.0	46.3
Scotland	368	0.0	94	0.1	25.5
Wales	844	0.1	213	0.2	25.2
British Isles other	28	0.0	5	0.0	17.9
Unmatched to postcode	29,704	3.6	6,701	4.8	22.6
<b>Total</b>	<b>825,363</b>	<b>-</b>	<b>140,218</b>	<b>-</b>	<b>17.0</b>

<sup>1</sup> Proportion of category that are new donors

**Figure 1.1: Age groups of repeat and new whole blood donors in England: 2019**



**Figure 1.2: Age groups of whole blood donors by UK blood service: 2019**



**Table 1.2: The number and rate of markers of HBV, HCV, HIV, HTLV and syphilis<sup>1</sup> identified among blood donations made to blood centres by new and repeat donors<sup>2</sup> and country of blood centres where donation was made: 2019**

Country of blood centre	Donations tested			HBV			HCV			HIV			HTLV			Syphilis <sup>1</sup>			Total		
	New	Repeat	All	New	Repeat	All	New	Repeat	All	New	Repeat	All	New	Repeat	All <sup>4</sup>	New	Repeat	All	New	Repeat	All <sup>5</sup>
<b>England</b>	138,172	1,407,773	1,545,945	45	1	46	31	1	32	8	1	9	3	0	3	63	24	87	150	27	177
Rate <sup>3</sup>				32.6	0.1	3.0	22.4	0.1	2.1	5.8	0.1	0.6	2.2	0.0	0.2	45.6	1.7	5.6	108.6	1.9	11.4
<b>Wales</b>	8,962	84,361	93,323	0	0	0	1	0	1	0	0	0	0	0	0	2	2	4	3	2	5
Rate <sup>3</sup>				0.0	0.0	0.0	11.2	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	22.3	2.4	4.3	33.5	2.4	5.4
<b>N. Ireland</b>	5,219	42,943	48,162	3	0	3	3	0	3	0	0	0	0	0	0	3	0	3	9	0	9
Rate <sup>3</sup>				57.5	0.0	6.2	57.5	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	57.5	0.0	6.2	172.4	0.0	18.7
<b>Scotland</b>	13,456	141,397	154,853	1	0	1	3	0	3	0	3	3	0	0	0	7	2	9	11	5	16
Rate <sup>3</sup>				7.4	0.0	0.6	22.3	0.0	1.9	0.0	2.1	1.9	0.0	0.0	0.0	52.0	1.4	5.8	81.7	3.5	10.3
<b>Total UK</b>	165,809	1,676,474	1,842,283	49	1	50	38	1	39	8	4	12	3	0	3	75	28	103	173	34	207
Rate <sup>3</sup>				29.6	0.1	2.7	22.9	0.1	2.1	4.8	0.2	0.7	1.8	0.0	0.2	45.2	1.7	5.6	104.3	2.0	11.2
<b>Republic of Ireland</b>	11,416	128,858	140,274	0	0	0	1	1	2	0	0	0	0	0	0	0	1	1	1	2	3
Rate <sup>3</sup>				0.0	0.0	0.0	8.8	0.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7	8.8	1.6	2.1
<b>Guernsey &amp; I. of Man</b>	249	1,980	2,229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rate <sup>3</sup>				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
<b>Total</b>	177,474	1,807,312	1,984,786	49	1	50	39	2	41	8	4	12	3	0	3	75	29	104	174	36	210
Rate <sup>3</sup>				27.6	0.1	2.5	22.0	0.1	2.1	4.5	0.2	0.6	1.7	0.0	0.2	42.3	1.6	5.2	98.0	2.0	10.6

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 donors may include returning donors who have not donated within the previous two years for NHSBT

3 Rate per 100,000 donations

4 NHSBT screens donations for HTLV in new and non-leucodepleted donations

5 There was one dual infection in the UK in 2019: HBV/syphilis

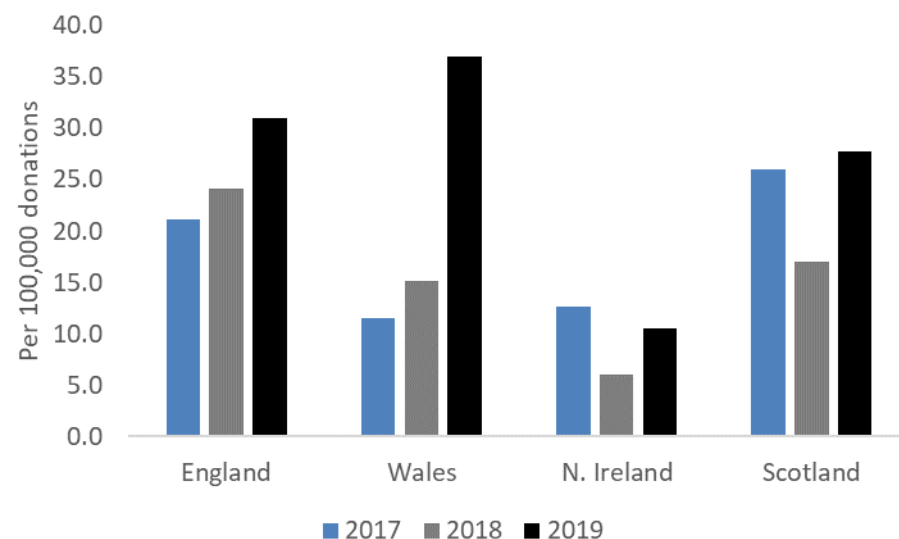
See 'Data Sources and Methods' document for details.

**Table 1.3: Testing of blood and apheresis donations<sup>1</sup> for HEV RNA: 2019**

Country of blood centre	Donations Tested	No.	HEV Rate per 100000
England	1,519,535	470	30.9
Wales	91,902	34	37.0
N. Ireland	47,616	5	10.5
Scotland	154,853	43	27.8
<b>Total UK</b>	<b>1,813,906</b>	<b>552</b>	<b>30</b>
Republic of Ireland	140,274	25	17.8
Guernsey & I. of Man	n/a	n/a	n/a
<b>Total</b>	<b>1,954,180</b>	<b>577</b>	<b>30</b>

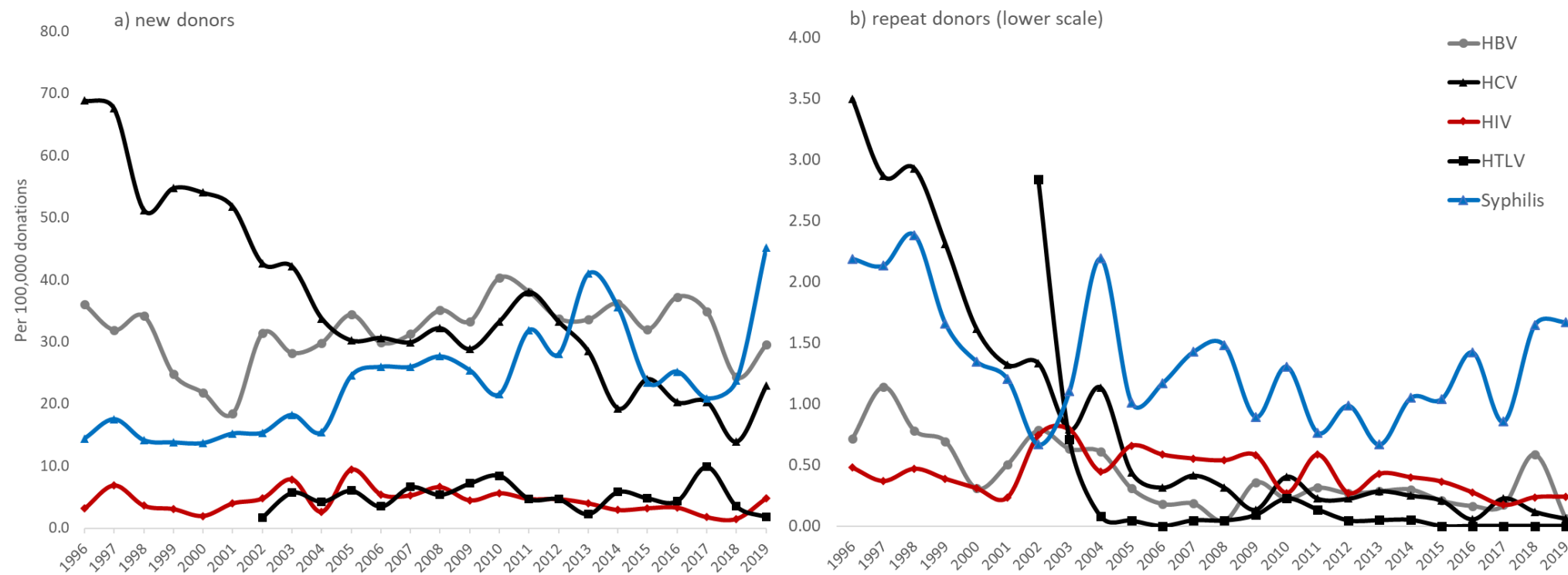
<sup>1</sup> Number of donations reported here may differ slightly from table 1.2 where donations are split by new and repeat because different data sources are used

**Figure 1.3: Rate of HEV RNA in blood and apheresis donations by UK blood service: 2017-2019**

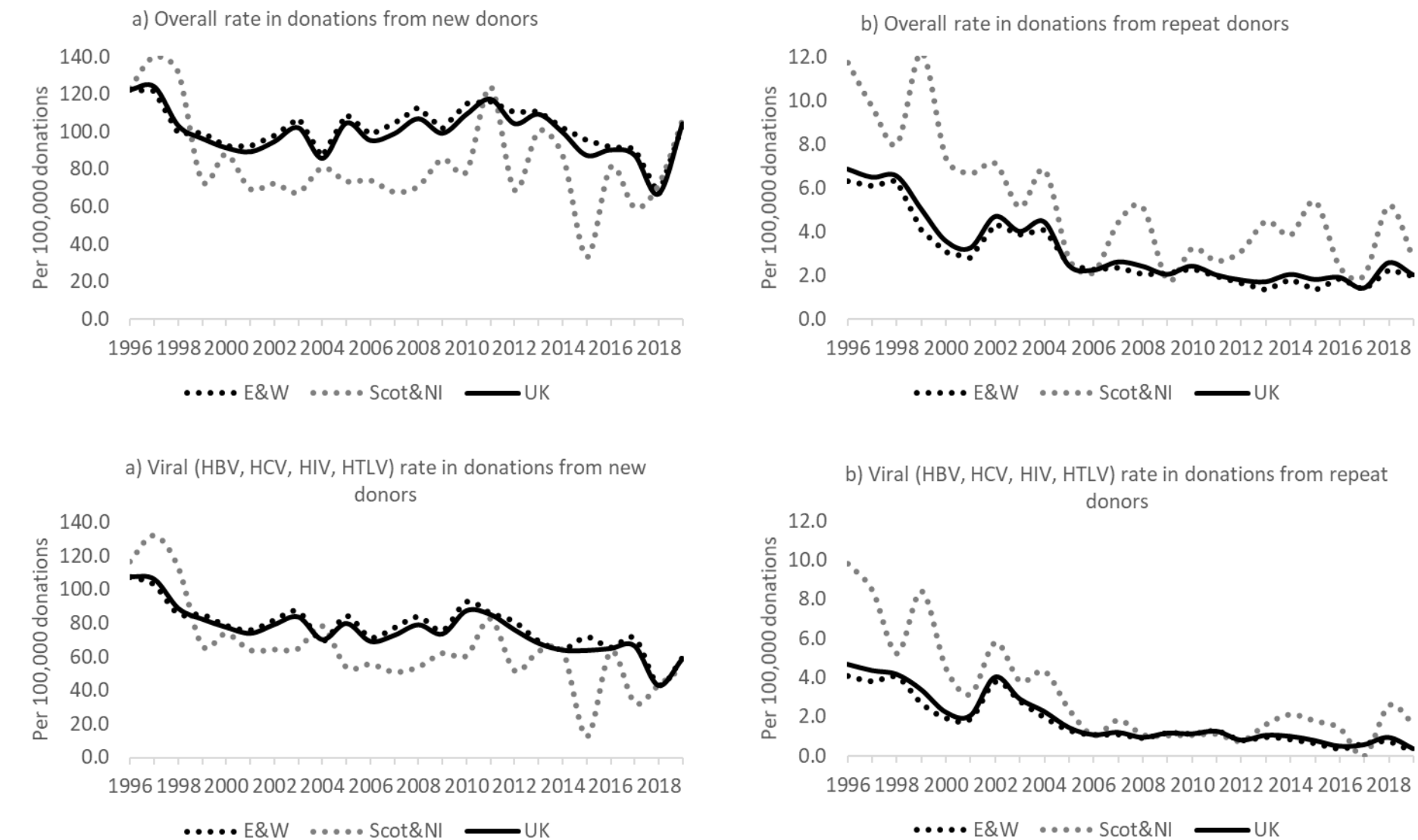




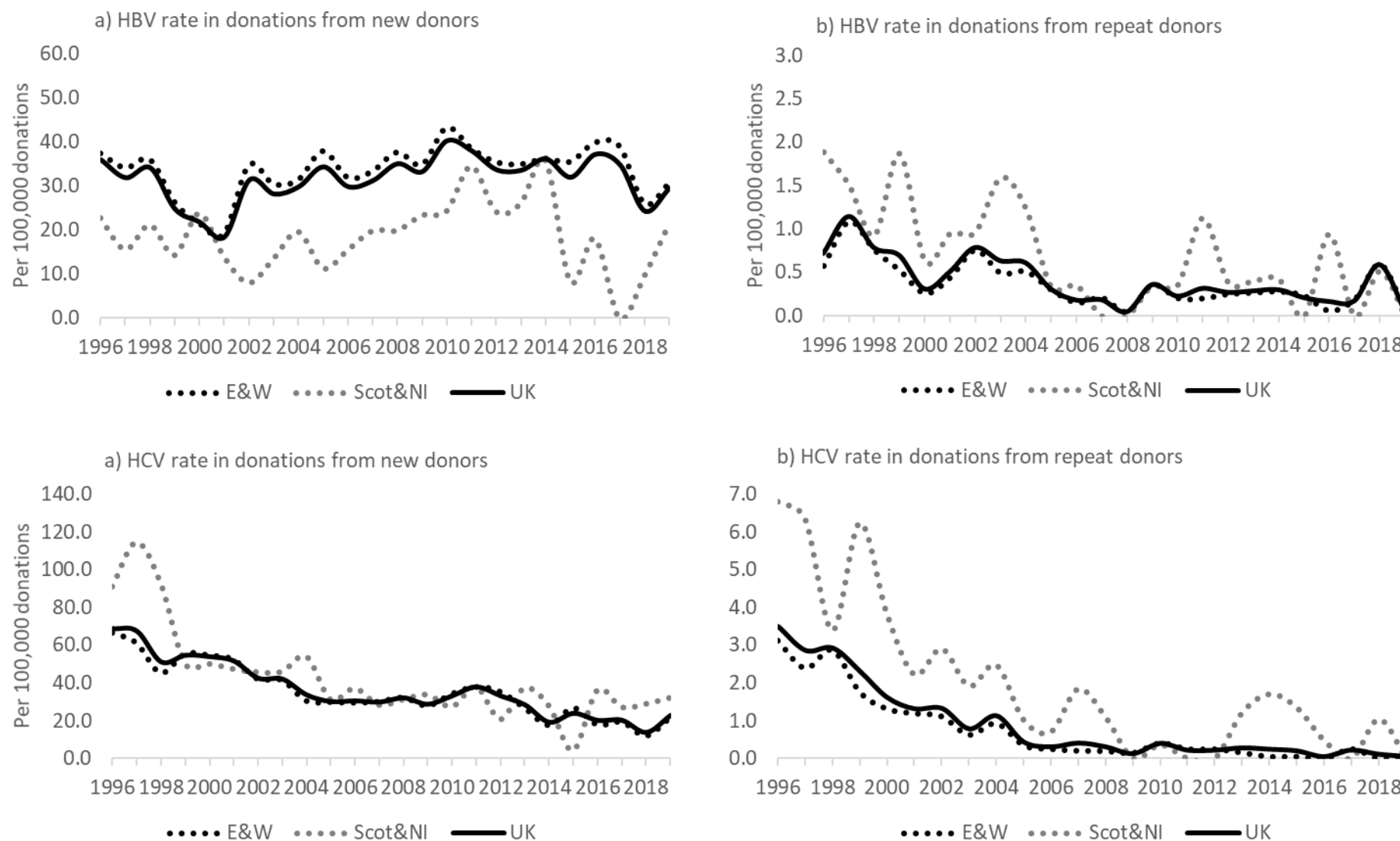
**Figure 1.4: The rate of markers of HBV, HCV, HIV, HTLV and syphilis in blood donations from new (a) and repeat (b) donors collected by blood centres in the UK: 1996-2019 (note different scales).**



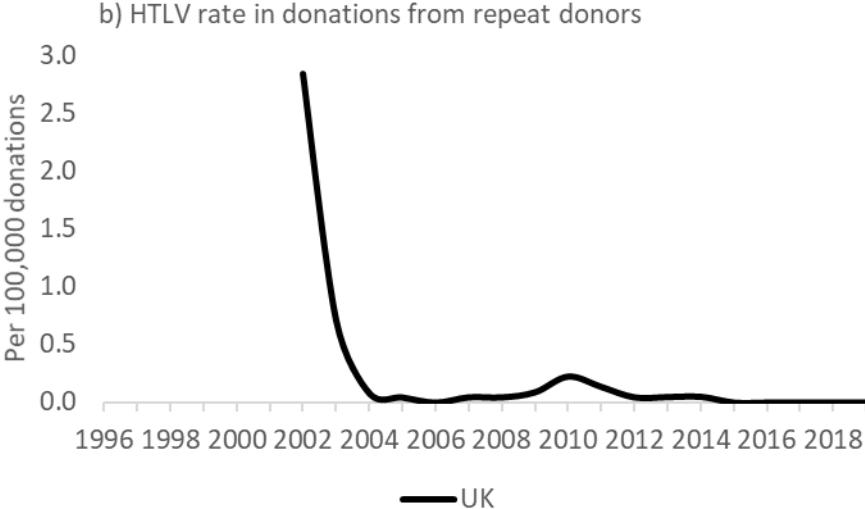
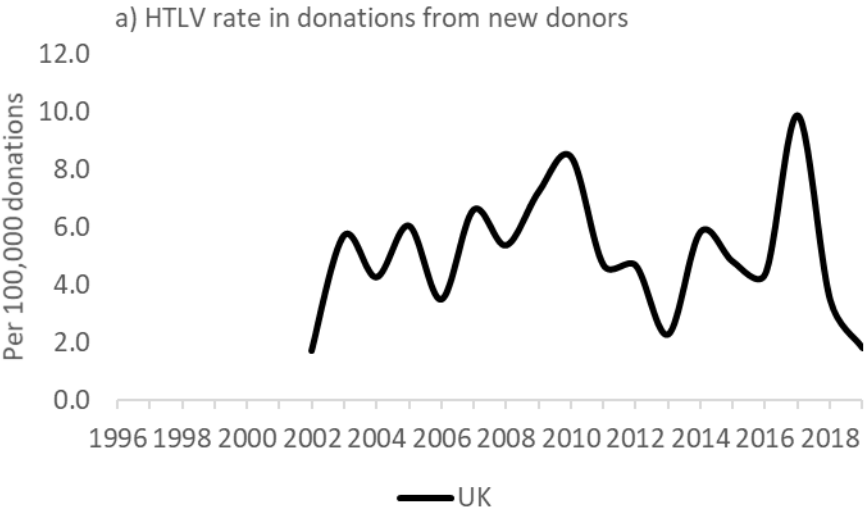
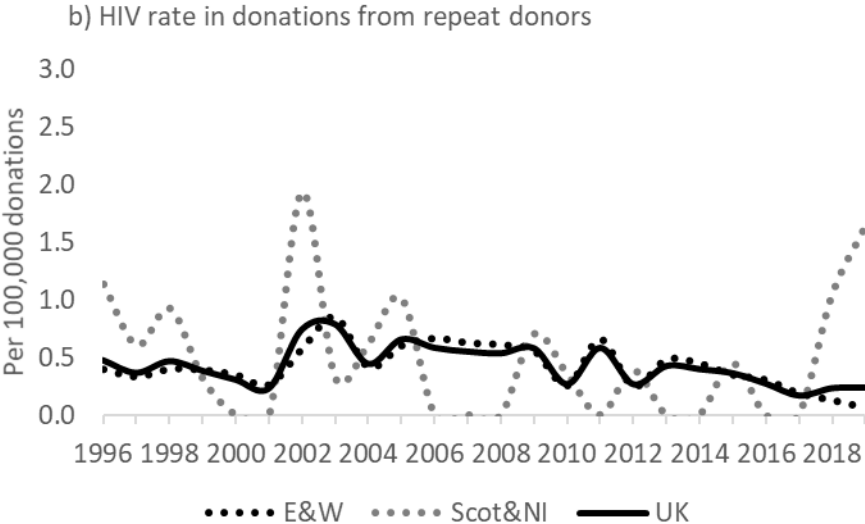
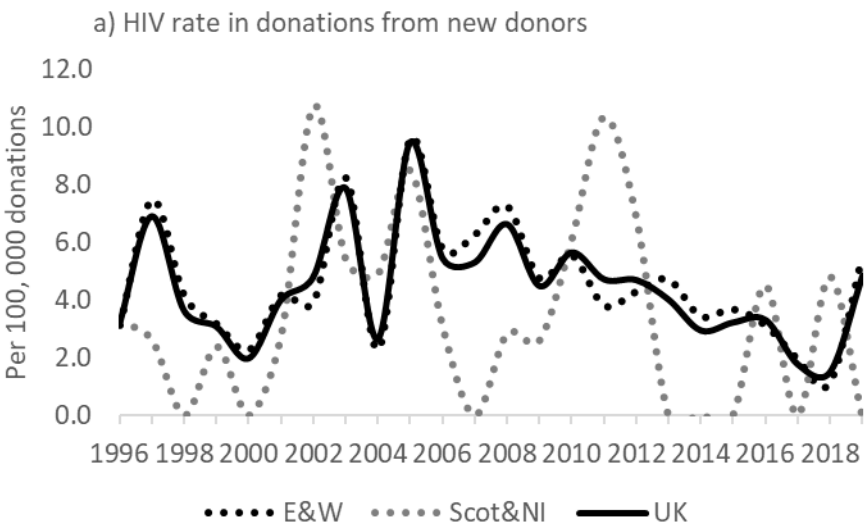
**Figure 1.5: The rate (per 100,000) of markers in blood donations from new (a) and repeat (b) donors UK: 1996-2019 (note differences in scale).**



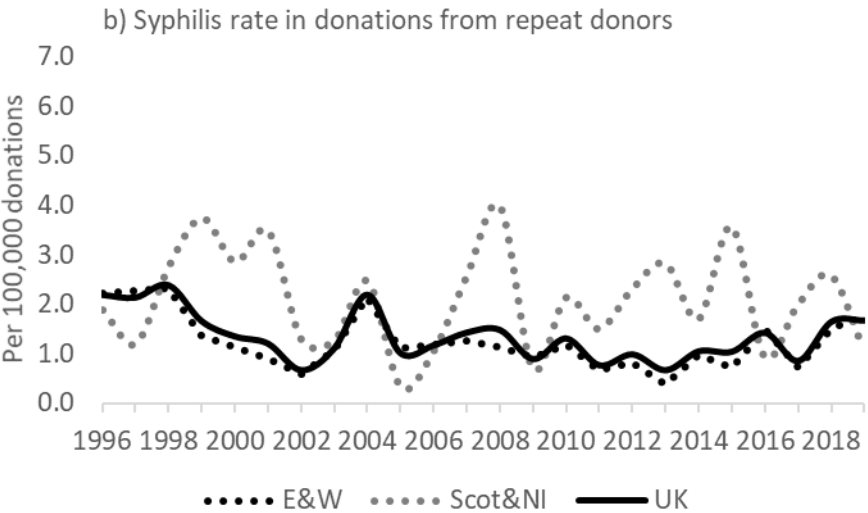
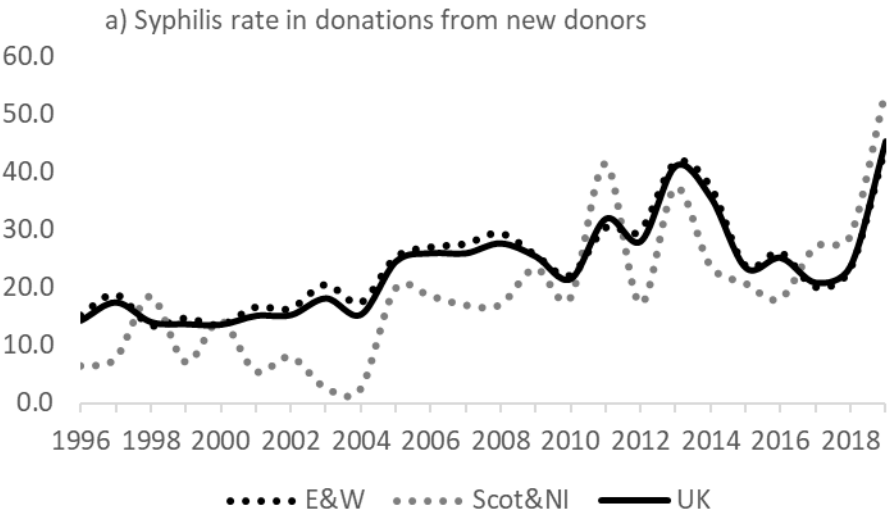
**Figure 1.5: The rate (per 100,000) of markers in blood donations from new (a) and repeat (b) donors UK: 1996-2019 (note differences in scale) cont.**



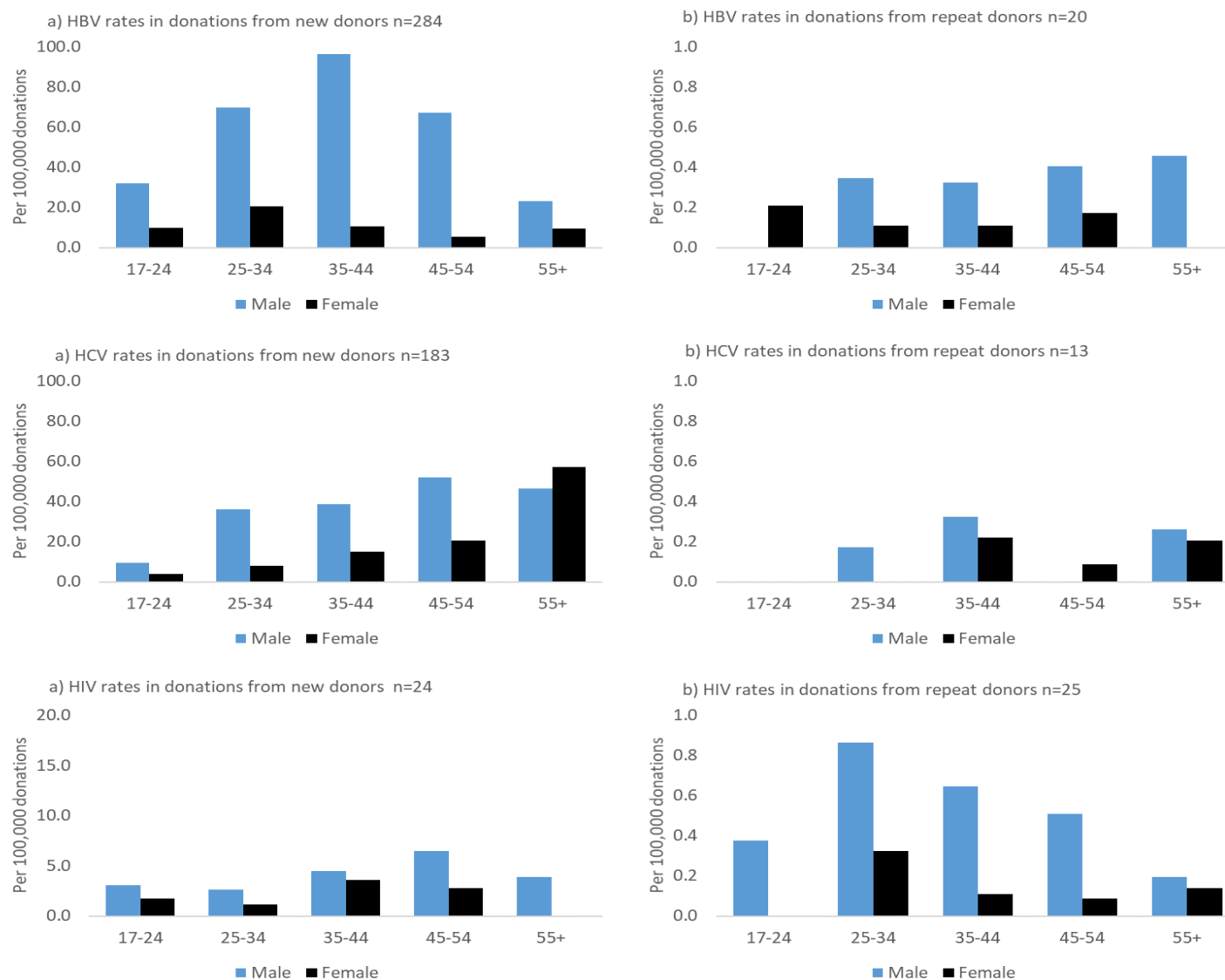
**Figure 1.5: The rate (per 100,000) of markers in blood donations from new (a) and repeat (b) donors UK: 1996-2019 (note differences in scale) cont.**



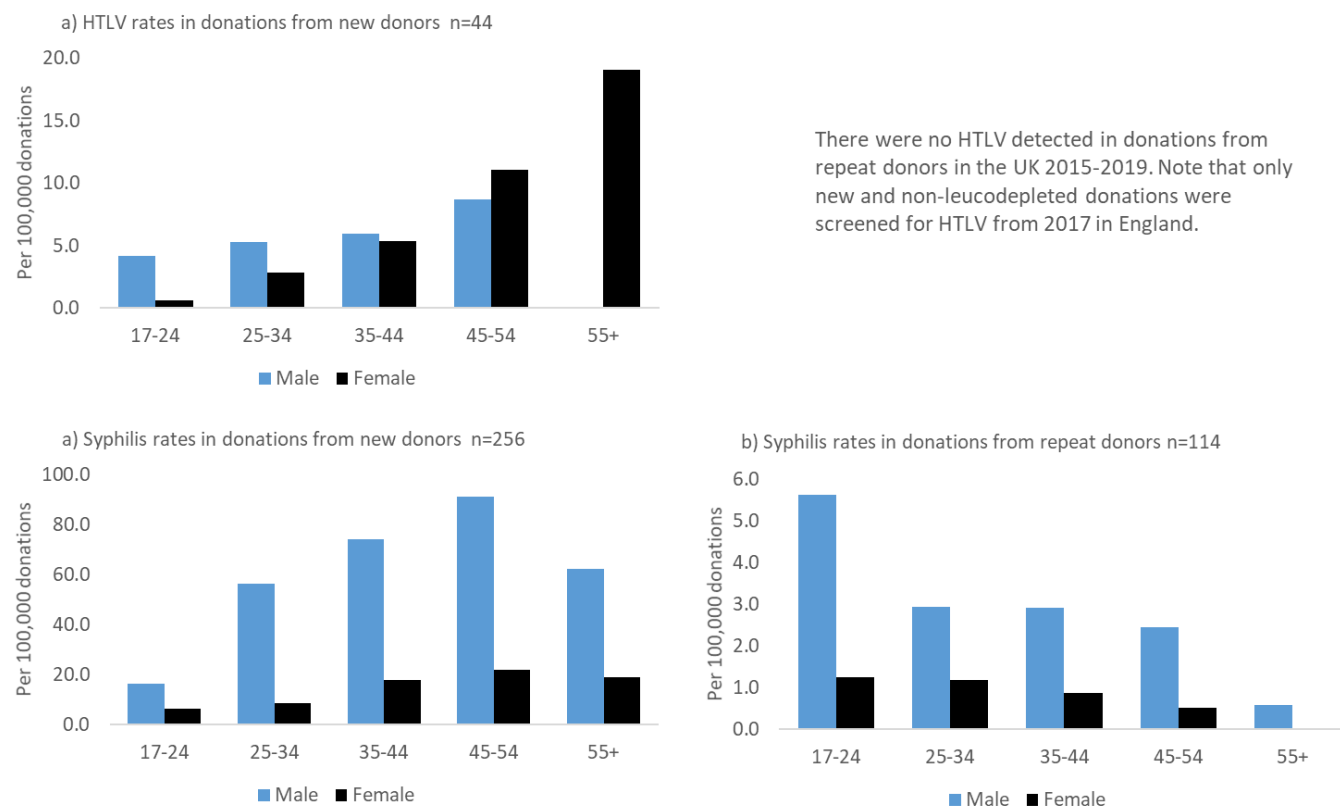
**Figure 1.5: The rate (per 100,000) of markers in blood donations from new (a) and repeat (b) donors UK: 1996-2019 (note differences in scale) cont.**



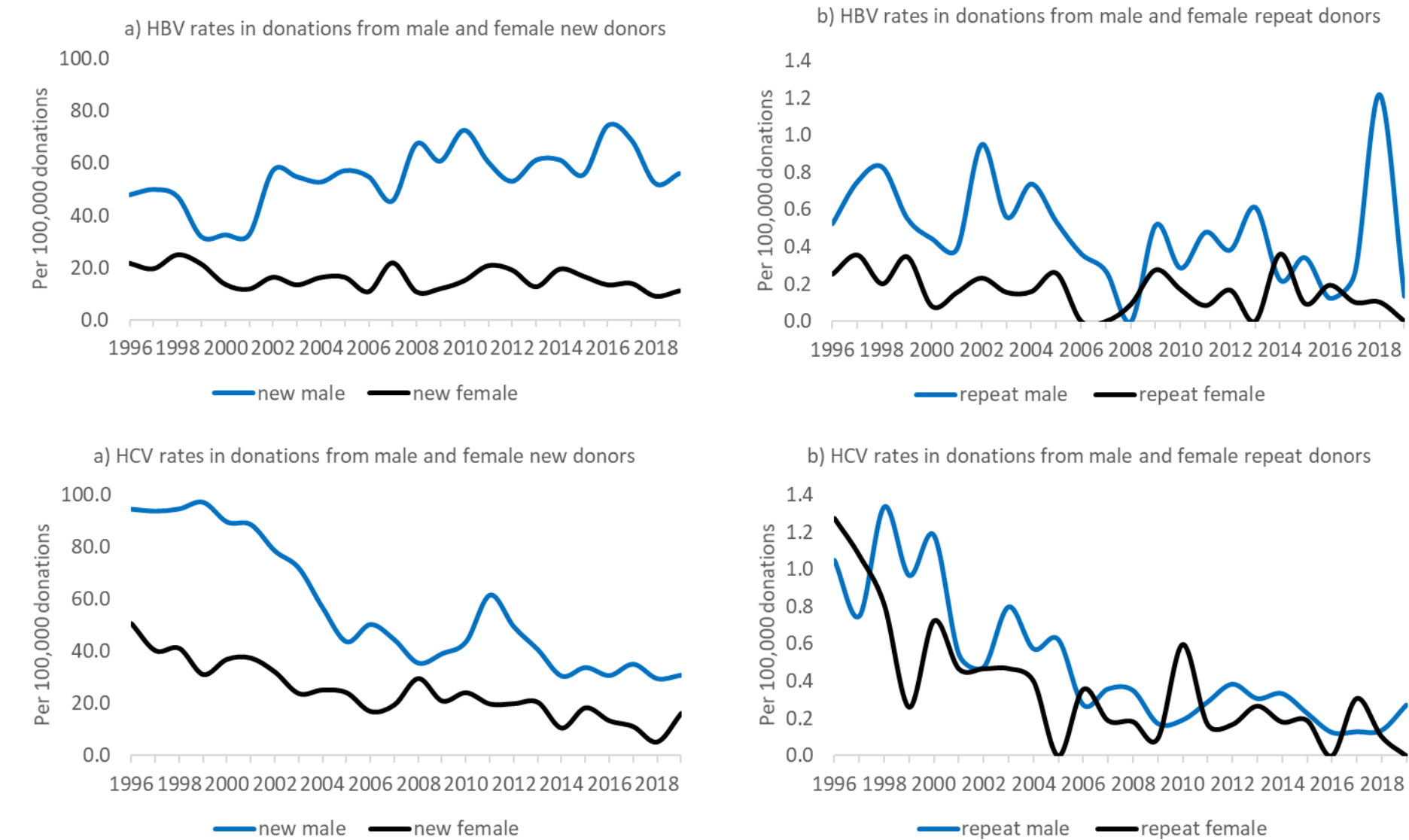
**Figure 1.6: The rate (per 100,000) of markers of infection from new (a) and repeat (b) donors at blood centres UK by gender and age group: 2015-2019 (note different scales)**



**Figure 1.6: The rate (per 100,000) of markers of infection from new (a) and repeat (b) donors at blood centres UK by gender and age group: 2015-2019 (note different scales) cont.**

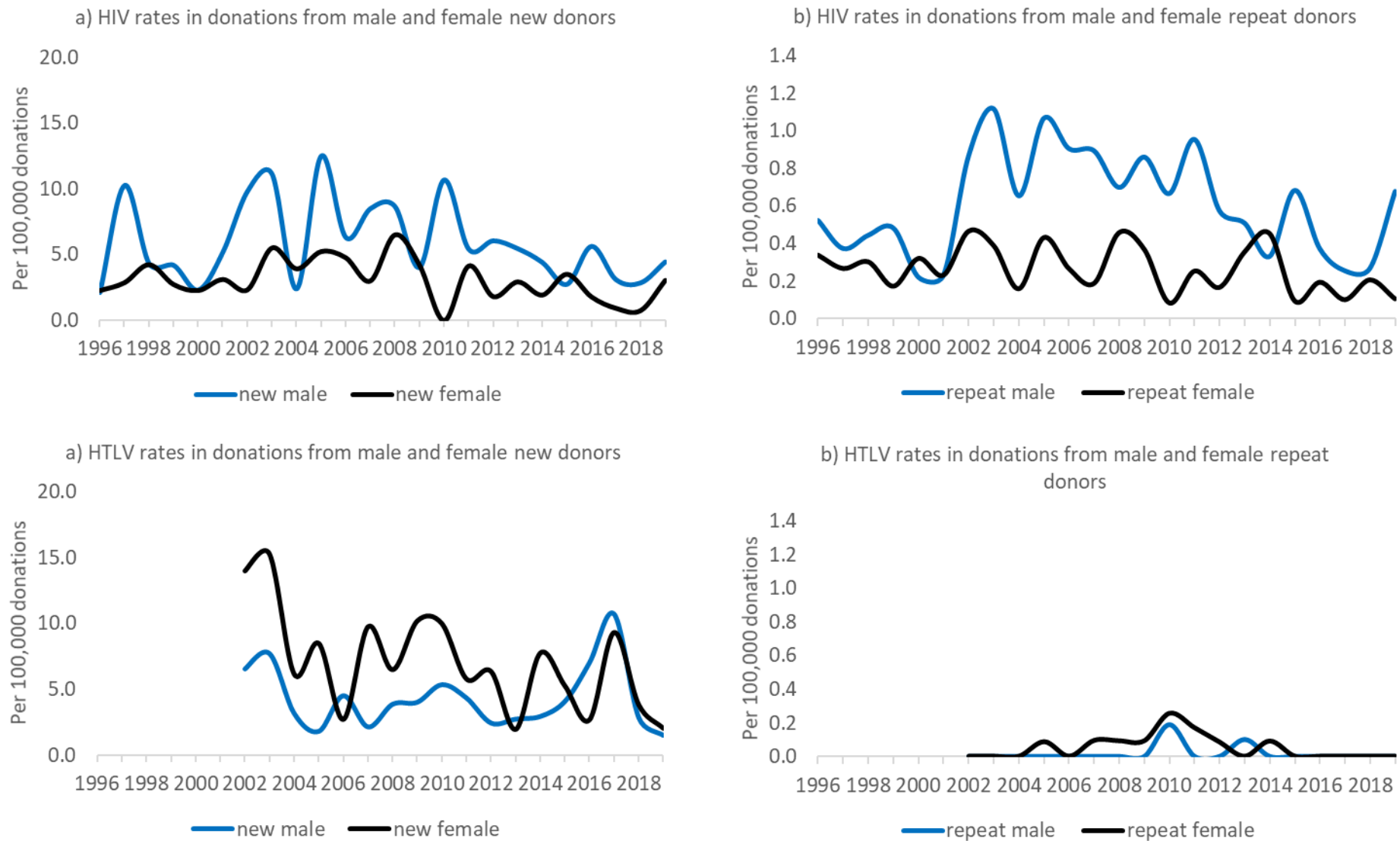


**Figure 1.7: The rate (per 100,000) of markers in blood donations made from new (a) and repeat (b) donors by gender of donor, UK: 1996–2019 (note different scales)**

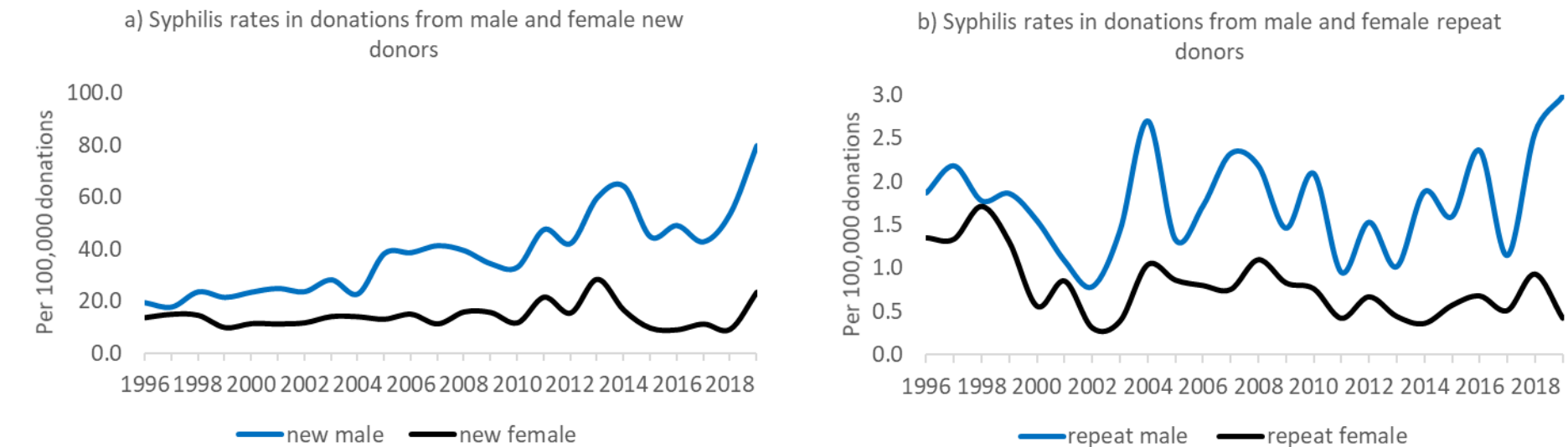




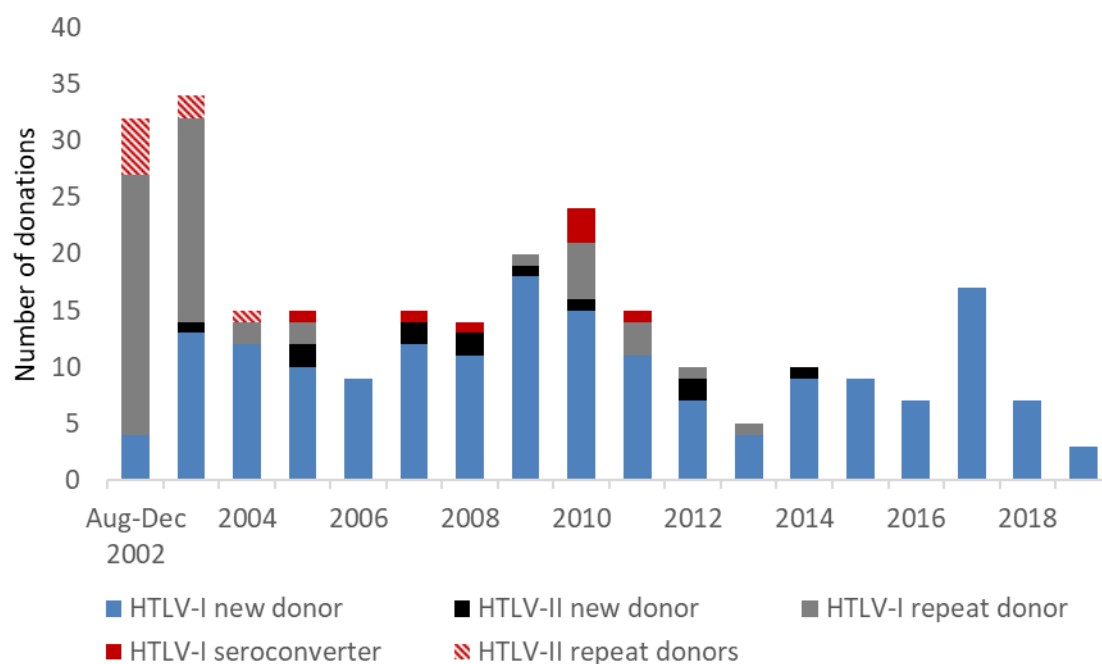
**Figure 1.7: The rate (per 100,000) of markers in blood donations made from new (a) and repeat (b) donors by gender of donor, UK: 1996–2019 (note different scales) cont.**



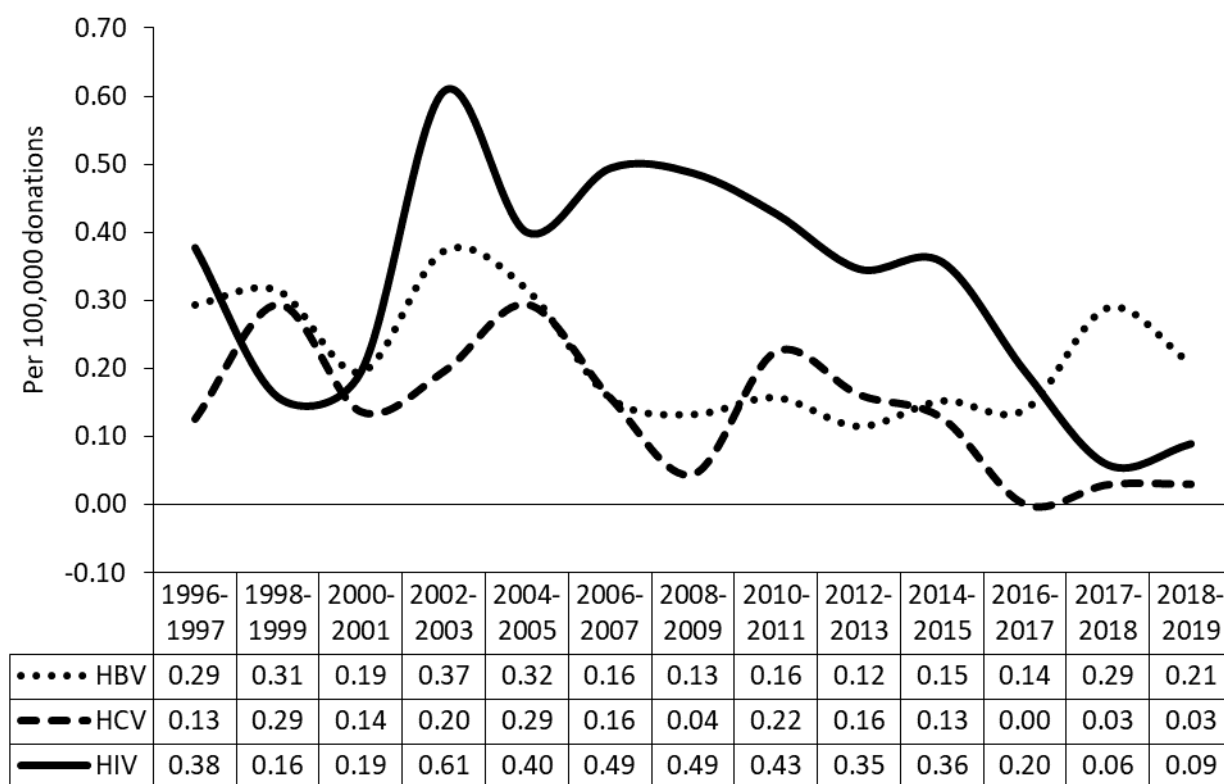
**Figure 1.7: The rate (per 100,000) of markers in blood donations made from new (a) and repeat (b) donors by gender of donor, UK: 1996–2019 (note different scales) cont.**



**Figure 1.8: The number of anti-HTLV positive blood donations by new and repeat donors, UK (excluding Scotland): August 2002-December 2019**



**Figure 1.9: Rate of detected seroconversion<sup>1</sup> for HBsAg<sup>2</sup>, anti-HCV and anti-HIV in repeat donors<sup>3</sup>: UK. Donations collected from 01/01/1996 to 31/12/2019**



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 17 donors detected by HCV RNA testing when anti-HCV negative and 4 donors detected by HIV RNA testing when anti-HIV negative and 7 donors detected by HBV DNA in the window period of the HBsAg assay

**Table 1.4: Characteristics and probable exposure history of HBV infected blood donors, UK and Republic of Ireland: 2019 and cumulative 1996-2019**

	UK 2019				UK Cumulative: 1996-2019												ROI cumulative All:1996-2019			
	All				Chronic infection								Acute		All					
	Male	Female	Total	%	Newly tested				Previously tested				Total	%	Total	%	Male	Female	Total	%
Number <sup>1</sup>	39	11	50	100	1286	529	1815	100.0	65	14	79	100.0	154	100.0	2049	100	46	10	56	100
Number seroconverted within 12 months <sup>2</sup>	0	0	0	0.0	-	-	-	-	9	2	11	13.9	82	53.2	93	4.5	11	3	14	21.4
Number acute infection <sup>3</sup>	2	0	2	4.0	-	-	-	-	-	-	-	-	-	-	154	7.5	15	5	20	35.7
Number occult infection	2	0	2	4.0	7	1	8	0.4	17	3	20	25.3	-	-	28	1.4	0	0	0	0.0
Rate (per 100,000 donations)	4.8	1.1	2.7		49.8	15.4	30.1		0.2	0.1	0.1		0.3		3.3		2.4	0.5	1.5	
Mean age	36.7	26.7	34.5		34.8	33.1	34.3		46.8	38.9	45.4		37.1		34.3		39.4	27.3	33.4	
<b>Ethnic group</b>																				
White	19	0	19	38.0	410	212	622	34.3	42	8	50	63.3	120	77.9	792	38.7	38	8	46	82.1
Asian/ Asian British	7	5	12	24.0	453	168	621	34.2	7	3	10	12.7	16	10.4	647	31.6	3	2	5	8.9
Black/African/Caribbean/ Black British	9	2	11	22.0	273	83	356	19.6	4	1	5	6.3	5	3.2	366	17.9	0	0	0	0.0
Mixed and other	4	3	7	14.0	54	26	80	4.4	2	0	2	2.5	1	0.6	83	4.1	3	0	3	5.4
Not known	0	1	1	2.0	96	40	136	7.5	10	2	12	15.2	12	7.8	160	7.8	2	0	2	3.6
<b>Area of birth</b>																				
UK	3	1	4	8.0	239	137	376	20.7	20	6	26	32.9	96	62.3	498	24.3	1	0	1	1.8
Europe excluding UK	15	2	17	34.0	187	90	277	15.3	3	3	6	7.6	10	6.5	293	14.3	35	9	44	78.6
Asia	7	5	12	24.0	372	127	499	27.5	7	1	8	10.1	6	3.9	513	25.0	3	1	4	7.1
Africa	10	1	11	22.0	247	69	316	17.4	3	1	4	5.1	5	3.2	325	15.9	1	0	1	1.8
Other	1	1	2	4.0	20	17	37	2.0	2	0	2	2.5	3	1.9	42	2.0	2	0	2	3.6
Not known	3	1	4	8.0	221	89	310	17.1	30	3	33	41.8	34	22.1	377	18.4	4	0	4	7.1
<b>Probable exposure category</b>																				
Injecting drug use (IDU)	0	0	0	0.0	5	2	7	0.4	0	0	0	0.0	1	0.6	8	0.4	1	0	1	1.8
Intranasal drug use	0	0	0	0.0	2	0	2	0.1	0	0	0	0.0	0	0.0	2	0.1	0	0	0	0.0
Sex between men (SBM)	0	0	0	0.0	6	0	6	0.3	0	0	0	0.0	8	5.2	14	0.7	2	0	2	3.6
Sex between men and women (SBMW)	1	0	1	2.0	68	32	100	5.5	12	3	15	19.0	43	27.9	158	7.7	9	4	13	23.2
Blood/tissue transfer, blood product treatment	0	0	0	0.0	10	15	25	1.4	0	1	1	1.3	0	0.0	26	1.3	1	0	1	1.8
Blood contact possible	1	2	3	6.0	166	71	237	13.1	12	0	12	15.2	22	14.3	271	13.2	10	2	12	21.4
Born in or to parents from an endemic country	28	6	34	68.0	609	224	833	45.9	8	4	12	15.2	1	0.6	846	41.3	5	0	5	8.9
No exposure identified	9	3	12	24.0	420	185	605	33.3	33	6	39	49.4	79	51.3	723	35.3	18	4	22	39.3

<sup>1</sup> The UK cumulative total includes one newly tested donor where gender not known.

<sup>2</sup> A seroconversion is defined as a detected infection in a repeat donor who has either provided a negative donation within the previous year or markers indicate a recent infection.

<sup>3</sup> The two acute infections in the UK 2019 were in newly tested donors. Acute infections for the UK 1996-2019 were detected among 55 newly tested and 99 previously tested donors. Acute infections for the Republic of Ireland were detected among 5 newly tested and 15 previously tested donors.

**Table 1.5: Characteristics and probable exposure history of HCV infected blood donors, UK, and Republic of Ireland: 2019 and cumulative 1996-2019**

	UK 2019 All:2019				UK Cumulative: 1996-2019								All:1996-2019		ROI Cumulative All:1996-2019			
	Male	Female	Total	%	Newly tested				Previously tested				Total	%	Male	Female	Total	%
Number <sup>1</sup>	23	16	39	100	1553	890	2444	100	149	102	251	100	2695	100	44	34	79	100
Number seroconverted within 12 months <sup>2</sup>	0	0	0	0.0	-	-	-	-	23	16	39	15.5	39	1.4	0	0	0	0
NAT pick up	0	0	0	0.0	4	2	6	0.2	10	7	17	6.8	23	0.9	0	0	0	0
Rate (per 100,000 donations)	2.9	1.5	2.1		62.3	25.9	40.7		0.5	0.4	0.5		4		2.3	1.8	2.1	
Mean age	38.7	40.1	40		38.7	38.6	38.6		37.9	39.0	38.4		38.5		37.6	38.2	37.6	
<b>Ethnic group</b>																		
White	15	13	28	71.8	1150	760	1910	78.1	121	88	209	83.3	2119	78.6	38	33	71	89.9
Asian/ Asian British	6	1	7	17.9	144	43	187	7.7	1	2	3	1.2	190	7.1	1	0	1	1.3
Black/African/Caribbean/ Black British	0	0	0	0.0	16	8	24	1.0	2	1	3	1.2	27	1.0	1	0	1	1.3
Mixed and other	1	1	2	5.1	30	10	40	1.6	2	0	2	0.8	42	1.6	0	0	0	0.0
Not known	1	1	2	5.1	213	69	283	11.6	23	11	34	13.5	317	11.7	4	1	6	7.6
<b>Area of birth</b>																		
UK	10	7	17	43.6	746	523	1269	51.8	82	64	146	58.2	1415	52.4	2	2	4	5.1
Europe excl UK	6	4	10	25.6	180	123	303	12.4	2	2	4	1.6	307	11.4	35	28	63	79.7
Asia	5	0	5	12.8	126	34	160	6.7	0	1	1	0.4	161	6.1	1	1	2	2.5
Africa	0	1	1	2.6	25	10	35	1.5	1	0	1	0.4	36	1.4	0	1	1	1.3
Other	0	0	0	0.0	23	26	49	2.0	3	0	3	1.2	52	1.9	1	2	3	3.8
Not known	2	4	6	15.4	453	174	628	25.7	61	35	96	38.2	724	26.8	5	0	6	7.6
<b>Probable exposure category</b>																		
Injecting drug use (IDU)	2	0	2	5.1	413	140	553	22.6	23	10	33	13.1	586	21.7	11	4	15	19.0
Intranasal drug use	0	0	0	0.0	52	27	79	3.2	5	1	6	2.4	85	3.1	4	2	6	7.6
Sex between men (SBM)	0	0	0	0.0	6	0	6	0.2	3	0	3	1.2	9	0.3	0	0	0	0.0
Sex between men and women (SBMW)	0	3	3	7.7	67	126	193	7.9	13	17	30	12.0	223	8.3	1	4	5	6.3
Blood/tissue transfer, blood product treatment	0	0	0	0.0	93	117	210	8.6	8	6	14	5.6	224	8.3	2	9	11	13.9
Blood contact possible	7	9	16	41.0	323	205	528	21.6	25	19	44	17.5	572	21.2	11	9	20	25.3
Infection associated with an endemic country	7	0	7	17.9	87	33	120	4.9	0	0	0	0.0	120	4.5	0	1	1	1.3
No exposure identified	7	4	11	28.2	512	242	755	31.0	72	49	121	48.2	876	32.6	15	5	21	26.6

<sup>1</sup> The UK 1996-2019 newly tested total of 2444 includes 1 newly tested donor where gender, ethnicity, area of birth and exposure not known. The ROI total of 79 includes 1 donor where gender, ethnicity and area of birth not known.

<sup>2</sup> A seroconversion is defined as a detected infection in a repeat donor who has either provided a negative donation within the previous year or markers indicate a recent infection.

**Table 1.6: Characteristics and probable exposure history of HIV infected blood donors, UK, and Republic of Ireland: 2019 and cumulative 1996-2019**

	UK 2019		UK Cumulative: 1996-2019										ROI Cumulative			
	All:2019		Newly tested				Previously tested				All:1996-2019		All:1996-2019			
	Total	%	Male	Female	Total	%	Male	Female	Total	%	Total	%	Male	Female	Total	%
Number <sup>1</sup>	12	100.0	150	108	258	100.0	165	73	238	100.0	496	100.0	21	7	28	100.0
Number seroconverted within 12 months <sup>2</sup>	2	16.7	-	-	-	-	89	34	123	51.7	123	24.8	2	2	4	14.3
NAT pick up	0	0.0	1	1	2	0.8	3	1	4	1.7	6	1.2	0	0	0	0.0
Rate (per 100,000 donations)	0.7		5.8	3.1	4.3		0.6	0.3	0.4		0.8		1.1	0.4	0.7	
Mean age	36.3		34.1	31.3	32.9		37.6	35.7	37.0		37.0		30.2	38.0	32.1	
Ethnic group																
White	9	75.0	84	60	144	55.8	150	64	214	89.9	358	72.2	21	7	28	100.0
Asian/ Asian British	0	0.0	15	4	19	7.4	9	1	10	4.2	29	5.8	0	0	0	0.0
Black/African/Caribbean/ Black British	2	16.7	38	35	73	28.3	0	6	6	2.5	79	15.9	0	0	0	0.0
Mixed and other	0	0.0	4	6	10	3.9	2	1	3	1.3	13	2.6	0	0	0	0.0
Not known	1	8.3	9	3	12	4.7	4	1	5	2.1	17	3.4	0	0	0	0.0
Area of birth																
UK	8	66.7	61	52	113	43.8	123	53	176	73.9	289	58.3	0	0	0	0.0
Europe excl UK	0	0.0	12	6	18	7.0	8	5	13	5.5	31	6.3	20	7	27	96.4
Asia	0	0.0	10	2	12	4.7	2	0	2	0.8	14	2.8	0	0	0	0.0
Africa	1	8.3	27	31	58	22.5	1	1	2	0.8	60	12.1	1	0	1	3.6
Other	1	8.3	9	3	12	4.7	0	0	0	0.0	12	2.4	0	0	0	0.0
Not known	2	16.7	31	14	45	17.4	31	14	45	18.9	90	18.1	0	0	0	0.0
Probable exposure category																
Injecting drug use (IDU)	0	0.0	4	0	4	1.6	0	1	1	0.4	5	1.0	1	0	1	3.6
Sex between men (SBM)	1	8.3	53	0	53	20.5	86	0	86	36.1	139	28.0	7	0	7	25.0
Sex between men and women (SBMW)	9	75.0	77	100	177	68.6	66	71	137	57.6	314	63.3	12	7	19	67.9
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
Blood contact possible	0	0.0	5	2	7	2.7	2	0	2	0.8	9	1.8	1	0	1	3.6
Infection associated with an endemic country	0	0.0	0	1	1	0.4	0	0	0	0.0	1	0.2	0	0	0	0.0
No exposure identified	2	16.7	11	5	16	6.2	11	1	12	5.0	28	5.6	0	0	0	0.0

<sup>1</sup> In the cumulative UK numbers, of the 150 newly tested males, 53 were assigned as sex between men with two also reporting injecting drug use not included in the four just reporting injecting

<sup>2</sup> A seroconversion is defined as a detected infection in a repeat donor who has either provided a negative donation within the previous year or markers indicate a recent infection.

**Table 1.7: Characteristics and probable exposure history of HTLV infected blood donors, UK, and Republic of Ireland: 2019 and cumulative 2002-2019**

	UK 2019		UK Cumulative: 2002-2019								All:2002-2019		ROI	
	Total	%	Newly tested				Previously tested				Total	%	Total	%
Number	3	100.0	72	180	252	100.0	3	11	14	100.0	266	100.0	2	100.0
Number seroconverted within 12 months <sup>1</sup>	0	0.0	-	-	-	-	1	4	5	35.7	5	1.9	0	0.0
Rate (per 100,000 donations)	0.2		4.6	8.6	6.9		0.0	0.1	0.0		0.7		0.1	
Mean age	36.3		40.9	43.8	42.9		48.5	46.1	47.3		42.8		30.1	
<b>Ethnic group</b>														
White	0	0.0	15	76	91	36.1	2	7	9	64.3	100	37.6	2	100.0
Asian/ Asian British	0	0.0	25	8	33	13.1	0	1	1	7.1	34	12.8	0	0.0
Black/African/Caribbean/ Black British	3	100.0	27	78	105	41.7	1	3	4	28.6	109	41.0	0	0.0
Mixed and other	0	0.0	5	12	17	6.7	0	0	0	0.0	17	6.4	0	0.0
Not known	0	0.0	0	6	6	2.4	0	0	0	0.0	6	2.3	0	0.0
<b>Area of birth</b>														
UK	2	66.7	24	98	122	48.4	1	8	9	64.3	131	49.2	0	0.0
Europe excl UK	0	0.0	0	9	9	3.6	0	1	1	7.1	10	3.8	2	100.0
Asia	0	0.0	23	10	33	13.1	0	0	0	0.0	33	12.4	0	0.0
Africa	1	33.3	6	6	12	4.8	1	0	1	7.1	13	4.9	0	0.0
Other	0	0.0	16	42	58	23.0	1	2	3	21.4	61	22.9	0	0.0
Not known	0	0.0	3	15	18	7.1	0	0	0	0.0	18	6.8	0	0.0
<b>Probable exposure category</b>														
Injecting drug use (IDU)	0	0.0	2	1	3	1.2	0	0	0	0.0	3	1.1	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
Sex between men (SBM)	0	0.0	1	0	1	0.4	0	0	0	0.0	1	0.4	0	0.0
Sex between men and women (SBMW) <sup>2</sup>	0	0.0	8	56	64	25.4	2	7	9	64.3	73	27.4	2	100.0
Blood/tissue transfer, blood product treatment	0	0.0	2	10	12	4.8	0	0	0	0.0	12	4.5	0	0.0
Blood contact possible	0	0.0	4	0	4	1.6	0	2	2	14.3	6	2.3	0	0.0
Infection associated with an endemic country <sup>3</sup>	3	100.0	40	88	128	50.8	1	1	2	14.3	130	48.9	0	0.0
No exposure identified	0	0.0	15	25	40	15.9	0	1	1	7.1	41	15.4	0	0.0

<sup>1</sup> A seroconversion is defined as a detected infection in a repeat donor who has either provided a negative donation within the previous year or markers indicate a recent infection.

<sup>2</sup> Route of transmission cannot always be distinguished between SBMW and endemic country transmission.

<sup>3</sup> includes mother to infant risk



**Table 1.8: Characteristics and probable exposure history of syphilis infected blood donors, UK, and Republic of Ireland: 2019 and cumulative 1996-2019**

					UK 2019						UK Cumulative: 1996-2019								ROI cumulative					
	Newly tested				Previously tested				All:2019		Newly tested				Previously tested				All: 1996-2019		All:1996-2019			
	Male	Female	Total	%	Male	Female	Total	%	Total	%	Male	Female	Total	%	Male	Female	Total	%	Total	%	Male	Female	Total	%
Number <sup>1</sup>	54	23	77	100.0	22	4	26	100.0	103	100.0	864	474	1338	100.0	471	213	686	100.0	2024	100.0	60	27	87	100.0
Recent infections acquired within 12 months <sup>2</sup>	8	8	16	20.8	21	4	25	96.2	41	39.8	87	47	134	10.0	160	58	218	31.8	352	17.4	19	5	24	27.6
Rate (per 100,000 donations)	80.1	23.4	46.4		3.0	0.4	1.6		5.6		33.4	13.8	22.2		1.7	0.8	1.2		3.3		3.1	1.4	2.3	
Mean age	36.5	34.5	35.9		39.7	37.0	39.7		37.8		41.2	42.0	41.5		44.2	43.5	43.9		42.1		41.0	45.0	43.0	
Ethnic group																								
White	33	17	50	64.9	19	4	23	88.5	73	70.9	421	279	700	52.3	350	166	517	75.4	1217	60.1	58	26	84	96.6
Asian/ Asian British	9	2	11	14.3	1	0	1	3.8	12	11.7	185	28	213	15.9	18	8	26	3.8	239	11.8	0	1	1	1.1
Black/African/Caribbean/ Black British	8	3	11	14.3	0	0	0	0.0	11	10.7	112	81	193	14.4	10	13	23	3.4	216	10.7	0	0	0	0.0
Mixed and other	3	0	3	3.9	1	0	1	3.8	4	3.9	33	22	55	4.1	5	0	5	0.7	60	3.0	0	0	0	0.0
Not known	1	1	2	2.6	1	0	1	3.8	3	2.9	113	64	177	13.2	88	26	115	16.8	292	14.4	2	0	2	2.3
Area of birth																								
UK	19	14	33	42.9	19	4	23	88.5	56	54.4	263	195	458	34.2	259	132	392	57.1	850	42.0	2	0	2	2.3
Europe excl UK	7	1	8	10.4	0	0	0	0.0	8	7.8	88	40	128	9.6	12	4	16	2.3	144	7.1	54	26	80	92.0
Asia	11	0	11	14.3	0	0	0	0.0	11	10.7	149	26	175	13.1	9	6	15	2.2	190	9.4	0	0	0	0.0
Africa	6	2	8	10.4	0	0	0	0.0	8	7.8	100	33	133	9.9	11	6	17	2.5	150	7.4	0	0	0	0.0
Other	4	1	5	6.5	0	0	0	0.0	5	4.9	48	59	107	8.0	12	10	22	3.2	129	6.4	0	0	0	0.0
Not known	7	5	12	15.6	3	0	3	11.5	15	14.6	216	121	337	25.2	168	55	225	32.8	561	27.7	4	1	5	5.7
Probable exposure category																								
Injecting drug use (IDU)	0	0	0	0.0	0	0	0	0.0	0	0.0	1	0	1	0.1	0	0	0	0.0	1	0.0	0	0	0	0.0
Sex between men (SBM)	16	0	16	20.8	4	0	4	15.4	20	19.4	69	0	69	5.2	41	0	41	6.0	110	5.4	3	0	3	3.4
Sex between men and women (SBMW)	20	22	42	54.5	16	4	20	76.9	62	60.2	290	234	524	39.2	165	102	267	38.9	791	39.1	40	18	58	66.7
Blood/tissue transfer, blood product treatment	0	0	0	0.0	0	0	0	0.0	0	0.0	5	1	6	0.4	1	0	1	0.1	7	0.3	0	0	0	0.0
Blood contact possible	0	0	0	0.0	0	0	0	0.0	0	0.0	6	3	9	0.7	0	0	0	0.0	9	0.4	0	0	0	0.0
Infection associated with an endemic country	1	0	1	1.3	0	0	0	0.0	1	1.0	32	29	61	4.6	8	10	18	2.6	79	3.9	0	2	2	2.3
No exposure identified	17	1	18	23.4	2	0	2	7.7	20	19.4	461	207	668	49.9	256	101	359	52.3	1027	50.7	17	7	24	27.6

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 UK cumulative male newly tested donors includes one donor positive for both syphilis and HCV; IDU is the most likely exposure category for the HCV infection.

UK cumulative previously tested total includes two donors where gender not known.

UK cumulative total includes one donor where donor status not known.

ROI male total includes one donor where donor status, country of birth, ethnicity not known

2 Seroconversion status not assigned to syphilis infections, instead assigned as recent within 12 months based on clinical history, previous negative donation within 12 months and/or IgM-positive result.

**Table 1.9: Additional testing in England: 2019**

<b>Marker</b>	<b>No. donations tested</b>	<b>% of all donations tested</b>	<b>No. repeat reactive at screening<sup>1</sup></b>	<b>% repeat reactive</b>	<b>No. confirmed positive</b>	<b>% confirmed positive</b>
Anti-HBc <sup>1</sup>	636	0.04	13	2.04	8	1.26
Anti- <i>T. cruzi</i>	1,614	0.10	3	0.19	0	0.00
Anti-malaria	31,548	2.04	971	3.08	709	2.25
West Nile virus NAT	42,300	2.74	0	0.00	0	0.00

1 Reactive at screening for anti-HBc and anti-HBs negative or <100 mIU/ml. Confirmed anti-HBc positive AND anti-HBs <100 mIU/ml. 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 residual risk (and 95% confidence interval) that a donation made in the HBV, HCV and HIV window period is not detected on screening UK: 2017-2019**

Risk due to infectious window period		HBV <sup>1</sup>	HCV <sup>2</sup>	HIV <sup>3</sup>
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 <sup>4</sup>	0.87 (0.35 - 1.70)	< 0.01 (0.00 - 0.05)	0.04 (0.01 - 0.09)
	Donations from new donors	1.90 (0.69 - 4.93)	0.04 (0.00 - 0.45)	0.02 (0.00 - 0.11)
	Donations from repeat donors	0.77 (0.32 - 1.47)	<0.01 (0.00 - 0.01)	0.05 (0.01 - 0.09)
Number of donations (millions) that are tested before 1 potentially infectious window period donation is not detected. This is equal to $1/risk \times 1,000,000$	All donations	1.1 million	145 million	23 million
	Donations from new donors	0.5 million	29 million	62 million
	Donations from repeat donors	1.3 million	247 million	22 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 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.

The model used to estimate the residual risks is peer reviewed, was developed, and is employed by, members of the ISBT TTI Working Party SRAP (Surveillance, Risk Assessment & Policy) sub group.

## 2. Bacterial screening

**Table 2.1: Bacterial screening of platelets by NHSBT using BacT/ALERT. Components tested and results of confirmatory investigations by NBL: 2019**

	No. components screened <sup>4</sup>	%	No. Screen Reactive	%	Confirmed Positive <sup>1</sup>	%	Indeterminate Positive <sup>2</sup>	%	Confirmed Negative	%	Indeterminate Negative <sup>3</sup>	%
Apheresis Platelets	134655	50.4%	226	0.17%	35	0.03%	83	0.06%	55	0.04%	53	0.04%
Pooled Platelets	132682	49.6%	403	0.30%	129	0.10%	132	0.10%	88	0.07%	54	0.04%
<b>Total</b>	<b>267337</b>	<b>N/A</b>	<b>629</b>	<b>0.24%</b>	<b>164</b>	<b>0.06%</b>	<b>215</b>	<b>0.08%</b>	<b>143</b>	<b>0.05%</b>	<b>107</b>	<b>0.04%</b>

**Table 2.2: Bacterial screening of platelets: Components tested and results of confirmatory investigations by SNBTS: 2019**

	No. components screened <sup>4</sup>	%	No. Screen Reactive	%	Confirmed Positive <sup>1</sup>	%
Apheresis Platelets	6530	40.9%	8	0.12%	2	0.03%
Pooled Platelets	9425	59.1%	16	0.17%	7	0.07%
<b>Total</b>	<b>15955</b>	<b>N/A</b>	<b>24</b>	<b>0.15%</b>	<b>9</b>	<b>0.06%</b>

**Table 2.3: Bacterial screening of platelets: Components tested and results of confirmatory investigations by NIBTS: 2019**

	No. components screened <sup>4</sup>	%	No. Screen Reactive	%	Confirmed Positive <sup>1</sup>	%
Apheresis Platelets	3956	68.3%	3	0.08%	0	0.00%
Pooled Platelets	1838	31.7%	2	0.11%	0	0.00%
<b>Total</b>	<b>5794</b>	<b>N/A</b>	<b>5</b>	<b>0.09%</b>	<b>0</b>	<b>0.00%</b>

**Table 2.4: Bacterial screening of platelets: Components tested and results of confirmatory investigations by WBS\*: 2019**

	No. components screened <sup>4</sup>	%	No. Screen Reactive	%	Confirmed Positive <sup>1</sup>	%
Apheresis Platelets	5461	43.4%	19	0.35%	2	0.04%
Pooled Platelets	7113	56.6%	17	0.24%	3	0.04%
<b>Total</b>	<b>12574</b>	<b>N/A</b>	<b>36</b>	<b>0.29%</b>	<b>5</b>	<b>0.04%</b>

\*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

- <sup>1</sup> **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).
- <sup>2</sup> **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.
- <sup>3</sup> **Confirmed negative** - The bottle and index or associated packs are also negative.
- <sup>4</sup> **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: 2019**

Speciation	Apheresis		Pooled	
	Confirmed Positive	Indeterminate Positive	Confirmed Positive	Indeterminate Positive
<b>Gram positive rods-skin flora</b>				
<i>Arcanobacterium pyogenes</i>	-	-	-	1
<i>Corynebacterium pseudodiphtheriticum</i>	-	1	-	-
<i>Cutibacterium acnes</i>	15	56	92	77
<i>Cutibacterium granulosum</i>	-	1	-	-
<b>Gram positive cocci- skin flora</b>				
<i>Staphylococcus aureus</i>	2	1	3	2
<i>Staphylococcus capitis</i>	1	3	3	7
<i>Staphylococcus epidermidis</i>	2	6	4	11
<i>Staphylococcus hominis</i>	-	1	-	2
<i>Staphylococcus saccharolyticus</i>	2	-	16	21
<i>Staphylococcus warneri</i>	-	1	-	-
<b>Oropharyngeal flora</b>				
<i>Fusobacterium nucleatum</i>	-	1	-	-
<i>Granulicatella adiacens</i>	1	-	-	-
<i>Streptococcus constellatus</i>	-	1	-	-
<i>Streptococcus cristatus</i>	-	1	-	-
<i>Streptococcus dysgalactiae</i>	1	-	4	-
<i>Streptococcus equi</i>	-	-	1	-
<i>Streptococcus mitis/oralis</i>	7	4	-	-
<i>Streptococcus parasanguinis</i>	1	1	-	2
<i>Streptococcus pneumoniae</i>	-	-	1	-
<i>Streptococcus sanguinis</i>	-	2	-	-
<b>Other bacteria</b>				
<i>Bacillus circulans</i>	-	-	-	1
<i>Bacillus licheniformis</i>	-	1	-	1
<i>Bacillus subtilis</i>	-	-	-	1
<i>Collinsella aerofaciens</i>	-	-	-	1
<i>Corynebacterium bovis</i>	-	-	-	1
<i>Corynebacterium renale</i>	-	-	-	1
<i>Micrococcus luteus</i>	-	1	-	3
<i>Paenibacillus glucanolyticus</i>	-	-	-	1
<i>Pantoea agglomerans</i>	-	-	-	1
<i>Proteus mirabilis</i>	-	-	1	-
<i>Serratia marcescens</i>	-	-	1	-
<b>Gut flora</b>				
<i>Bacteroides uniformis</i>	-	-	-	1
<i>Bacteroides vulgatus</i>	-	1	-	-
<i>Campylobacter fetus</i>	-	-	1	-
<i>Escherichia coli</i>	-	-	2	-
<i>Streptococcus gallolyticus</i>	1	1	-	-
<i>Streptococcus infantarius</i>	1	-	-	-
<b>Non-recoverable organisms</b>				
<i>Abiotrophia defectiva</i>	-	1	-	-
<i>Corynebacterium accolens</i>	1	-	-	-
<i>Gemella sanguinis</i>	-	1	-	-
<i>Parabacteroides distasonis</i>	-	-	-	1
<b>TOTAL</b>	<b>35</b>	<b>86</b>	<b>129</b>	<b>136</b>

### 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: 2019 and 2006 - 2019**

Year of donation	Donor type	Total number tested	Number positive					Syphilis	Total
			HBV <sup>1</sup>	HCV	HEV <sup>2</sup>	HIV	HTLV		
2019	Deceased	3,401	6	4	0	0	0	4	14
	Rate <sup>3</sup>		176.4	117.6	0.0	0.0	0.0	117.6	411.6
	Surgical bone	570	0	0	0	0	0	0	0
	Rate <sup>3</sup>		0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006-2019	Deceased <sup>4</sup>	31,056	38	14	2	3	3	47	107
	Rate <sup>3</sup>		122.4	45.1	6.4	9.7	9.7	151.3	344.5
	Surgical bone	33,644	8	13	0	1	1	25	48
	Rate <sup>3</sup>		23.8	38.6	0.0	3.0	3.0	74.3	142.7

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 from 2018.

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: 2019 and 2006 – 2019**

Year of donation	Total number tested	Number positive					Syphilis	Total
		HBV <sup>1</sup>	HCV	HEV <sup>2</sup>	HIV	HTLV		
2019	584	0	0	0	0	0	2	2
Rate <sup>3</sup>		0.0	0.0	0.0	0.0	0.0	342.5	342.5
2006 - 2019	25,018	4	13	0	0	11	12	40
Rate <sup>3</sup>		16.0	52.0	0.0	0.0	44.0	48.0	159.9

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

2. HEV testing data are reported from 2018.

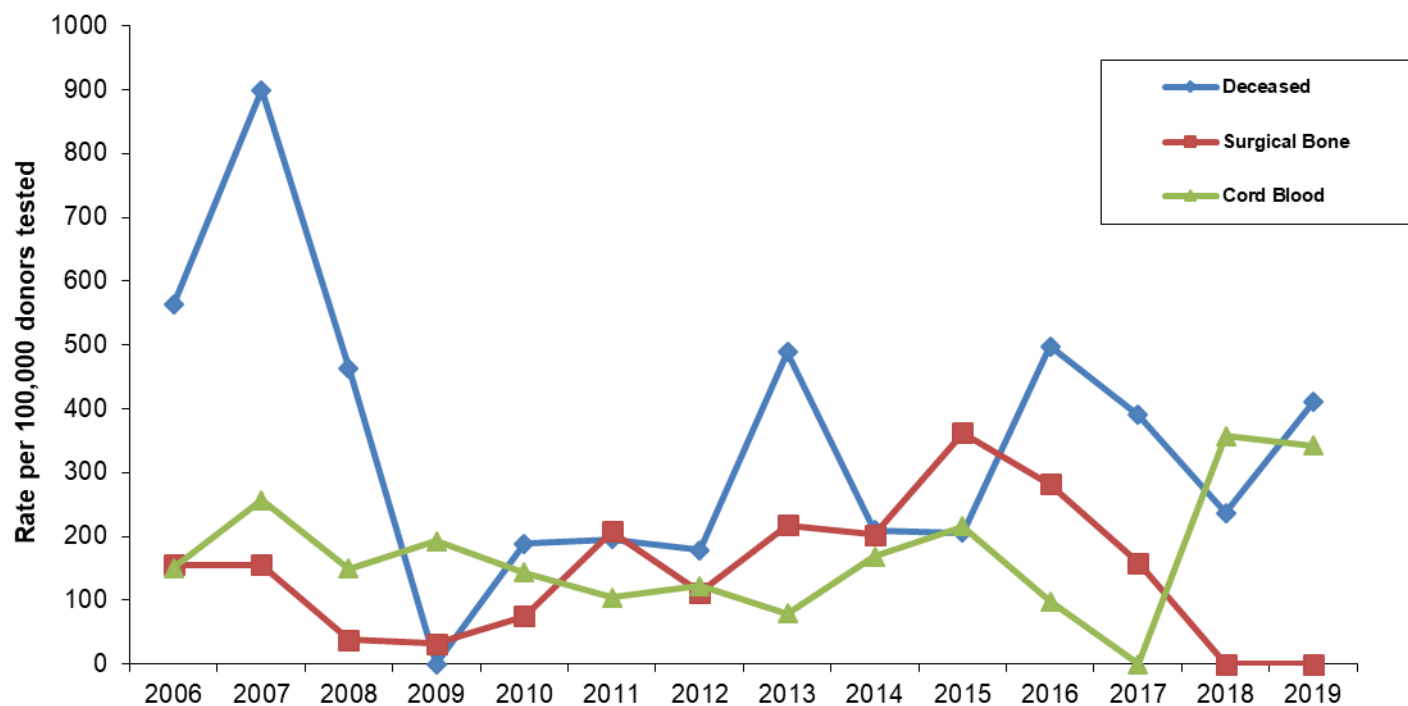
Rate per 100,000 donors.

**Table 3.3: The number and rate of cord blood donors positive for markers of malaria and *Trypanosoma cruzi*, as tested by NHSBT: 2019 and 2006-2019**

Year of donation	Malaria		<i>Trypanosoma cruzi</i>	
	Number tested	Number positive	Number tested	Number positive
2019	204	12	0	0
Rate <sup>1</sup>		5882.4		0.0
2006-2019	7675	219	491	0
Rate <sup>1</sup>		2853.4		0.0

1. Rate per 100,000 donors.

**Figure 3.1: Rate of living surgical bone, deceased tissue donors and cord blood donors positive for markers of infection, as tested by NHSBT: 2006- 2019**





## 4. Deceased solid organ donor surveillance

**Table 4.1: The number and percentage rate of markers of infection identified among all consented, potential organ donors and actual donors who proceed to donation, UK: 2019**

	HBsAg		HBcAb		HCV		HIV		CMV		HTLV		HEV		EBV		Toxo		Syphilis		Malaria		<i>T. cruzi</i>	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Consented potential deceased donors</b>																								
Negative	2186	99.54	2138	97.36	2141	97.5	2187	99.6	1073	48.9	2189	99.68	1351	61.52	128	5.8	1819	82.8	2158	98.3	123	5.6	35	1.6
Reactive	7	0.32	52	2.4	50	2.277	5	0.2	1101	50.1	4	0.182	2	0.091	1949	88.8	352	16.0	15	0.7	13	0.6	-	-
Not known <sup>1</sup>	3	0.14	6	0.273	5	0.228	4	0.2	22	1.0	3	0.137	843	38.4	119	5.4	25	1.1	23	1.0	2060	93.8	2161	98.4
Total	2196		2196		2196		2196		2196		2196		2196		2196		2196		2196		2196		2196	
<b>Actual solid organ donors from whom organs were transplanted</b>																								
Negative	1652	99.9	1618	97.9	1635	98.9	1650	99.8	804	48.6	1652	99.9	1184	71.6	95	5.7	1388	84.0	1630	98.6	116	7.0	35	2.1
Reactive	1	0.1	32	1.9	16	1.0	2	0.1	834	50.5	1	0.1	2	0.1	1480	89.5	248	15.0	11	0.7	13	0.8	-	-
Not known <sup>1</sup>	-	-	3	0.2	2	0.1	1	0.1	15	0.9	-	-	467	28.3	78	4.7	17	1.0	12	0.7	1524	92.2	1618	97.9
Total	1653		1653		1653		1653		1653		1653		1653		1653		1653		1653		1653		1653	
<b>Actual donors after brain-stem death</b>																								
Negative	964	100.0	939	97.4	950	98.5	962	99.8	477	49.5	963	99.9	695	72.1	64	6.6	811	84.1	951	98.7	77	8.0	19	2.0
Reactive	-	-	23	2.4	12	1.2	2	0.2	477	49.5	1	0.1	-	-	853	88.5	139	14.4	8	0.8	11	1.1	-	-
Not known <sup>1</sup>	-	-	2	0.2	2	0.2	-	-	10	1.0	-	-	269	27.9	47	4.9	14	1.5	5	0.5	876	90.9	945	98.0
Total	964		964		964		964		964		964		964		964		964		964		964		964	
<b>Actual donors after cardiac death</b>																								
Negative	688	99.9	679	98.5	685	99.4	688	99.9	327	47.5	689	100.0	489	71.0	31	4.5	577	83.7	679	98.5	39	5.7	16	2.3
Reactive	1	0.1	9	1.3	4	0.6	-	-	357	51.8	-	-	2	0.3	627	91.0	109	15.8	3	0.4	2	0.3	-	-
Not known <sup>1</sup>	-	-	1	0.1	-	-	1	0.1	5	0.7	-	-	198	28.7	31	4.5	3	0.4	7	1.0	648	94.0	673	97.7
Total	689		689		689		689		689		689		689		689		689		689		689		689	
<b>Utilised donors from whom organs were transplanted</b>																								
Negative	1528	99.9	1495	97.8	1514	99.0	1527	99.9	750	49.1	1528	99.9	1117	73.1	89	5.8	1290	84.4	1508	98.6	111	7.3	35	2.3
Reactive	1	0.1	31	2.0	14	0.9	2	0.1	764	50.0	1	0.1	1	0.1	1368	89.5	224	14.7	10	0.7	12	0.8	-	-
Not known <sup>1</sup>	-	-	3	0.2	1	0.1	-	-	15	1.0	-	-	411	26.9	72	4.7	15	1.0	11	0.7	1406	92.0	1494	97.7
Total	1529		1529		1529		1529		1529		1529		1529		1529		1529		1529		1529		1529	

### Definitions

Consented potential deceased donors – these are donors for whom the family have given consent to donation

Actual donors - these are donors who proceeded to donation as at least one organ was retrieved from the donor for the purpose of transplantation

Utilised donors – these are donors where at least one organ was retrieved and transplanted

<sup>1</sup> for malaria and *T. cruzi*, not known includes donors not tested

**Table 4.2: Characteristics of utilised donors from whom at least one organ was transplanted and who were reactive for at least one marker, UK: 2019**

Marker	Gender	Number	Age		Ethnicity					
			Median age	IQR	White	Asian or Asian/British	Black or Black-British	Chinese/Oriental	Other/Mixed	Unknown/not reported
HBsAg	Male	1	26	-	1	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
Anti-HBc	Male	18	51.4	(28- 69)	10	3	3	0	2	-
	Female	13	58.9	( 41- 76)	6	2	1	3	1	-
HCV	Male	11	41.9	(23 - 59)	9	-	-	-	2	-
	Female	3	40.3	(26 - 49)	3	-	-	-	0	-
HIV	Male	2	35.5	(34 - 37)	2	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
CMV	Male	405	50.4	(0 - 79)	341	28	13	2	21	0
	Female	359	55.2	(1- 82)	310	17	9	8	8	7
HTLV	Male	-	-	-	-	-	-	-	-	-
	Female	1	44	-	1	-	-	-	-	-
HEV	Male	-	-	-	-	-	-	-	-	-
	Female	1	56	-	1	-	-	-	-	-
EBV	Male	755	50.3	(0 - 80)	694	29	11	1	17	3
	Female	613	54.7	(1 - 84)	567	14	9	6	8	9
Toxo	Male	136	53	(0 - 79)	122	4	2	0	7	1
	Female	88	60.1	(10 - 82)	80	3	1	2	1	1
Syphilis	Male	8	41.1	(26 - 67)	5	2	1	-	-	-
	Female	2	66	(56 - 76)	2	0	0	-	-	-
Malaria	Male	7	54	(47- 63)	0	2	5	-	0	-
	Female	5	50.6	(32 - 77)	1	0	3	-	1	-
<i>T. cruzi</i>	Male	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-

## 5. Transfusion-transmitted infections

**Table 5.1: Number of confirmed TTI incidents by year of transfusion in the UK reported to SHOT between October 1996 and December 2019 (Scotland included from October 1998)**

Year of transfusion*	Number of incidents (recipients) by infection											Implicated component				
	Bacteria	HAV	HBV	HCV	HEV	HIV	HTLV I	Parvovirus (B19)	Malaria	vCJD/ prion	Total	RBC	Pooled platelet	Apheresis platelet	FFP	Cryo
Pre 1996	-	-	1 (1)	-	-	-	2 (2)	-	-	-	3 (3)	3				
1996	-	1(1)	1 (1)	1 (1)	-	1 (3)	-	-	-	1 (1)	5 (7)	5	1		1	
1997	3 (3)	-	1 (1)	1 (1)	-	-	-	-	1 (1)	2 (2)	8 (8)	6	1	1		
1998	4 (4)	-	1 (1)	-	-	-	-	-	-	-	5 (5)	2	1	2		
1999	4 (4)	-	2 (3)	-	-	-	-	-	-	‡ (1)	6 (8)	5	3			
2000	7 (7)	1 (1)	1 (1)	-	-	-	-	-	-	-	9 (9)	1	5	3		
2001	5 (5)	-	-	-	-	-	-	-	-	-	5 (5)		4	1		
2002	1 (1)	-	1 (1)	-	-	1 (1) <sup>†</sup>	-	-	-	-	3 (3)	2	1			
2003	3 (3)	-	1 (1)	-	-	-	-	-	1 (1)	-	5 (5)	1	1	3		
2004	††	-	-	-	1 (1)	-	-	-	-	-	1 (1)	1				
2005	2 (2)	1 (1)	1 (1)	-	-	-	-	-	-	-	4 (4)	1	3			
2006	2 (2)	-	-	-	-	-	-	-	-	-	2 (2)		1	1		
2007	3 (3)	-	-	-	-	-	-	-	-	-	3 (3)	2	1			
2008	4 (6)	-	-	-	-	-	-	-	-	-	4 (6)		2	4		
2009	2 (3)	-	-	-	-	-	-	-	-	-	2 (3)	1		2		
2010	-	-	-	-	-	-	-	-	-	-	-					
2011	-	-	1 (2)	-	1 (2)	-	-	-	-	-	2 (4)	2			2	
2012	-	-	1 (1)	-	1 (1)	-	-	1(1)	-	-	3 (3)	2			1	
2013	-	-	-	-	-	-	-	-	-	-	-					
2014	-	-	-	-	2 (3)	-	-	-	-	-	2(3)	1			2	
2015	1(1)	-	-	-	4 (5)	-	-	-	-	-	5(6)		3	1	1	1
2016	-	-	-	-	1 (1)	-	-	-	-	-	1(1)	1				
2017	-	1(1)	-	-	-	-	-	-	-	-	1(1)			1		
2018	-	-	-	-	1 (1)	-	-	-	-	-	1(1)			1		
2019	-	-	-	-	1 (2)	-	-	-	-	-	1(2)			2		
<b>Number of Incidents</b>	<b>41</b>	<b>4</b>	<b>12</b>	<b>2</b>	<b>12</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>81</b>					
Number of Infected Recipients	44	4	14	2	16	4	2	1	2	4	93	36	27	22	7	1
Death due to, or contributed to, by TTI	11	0	0	0	3	0	0	0	1	3	18					

\*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.

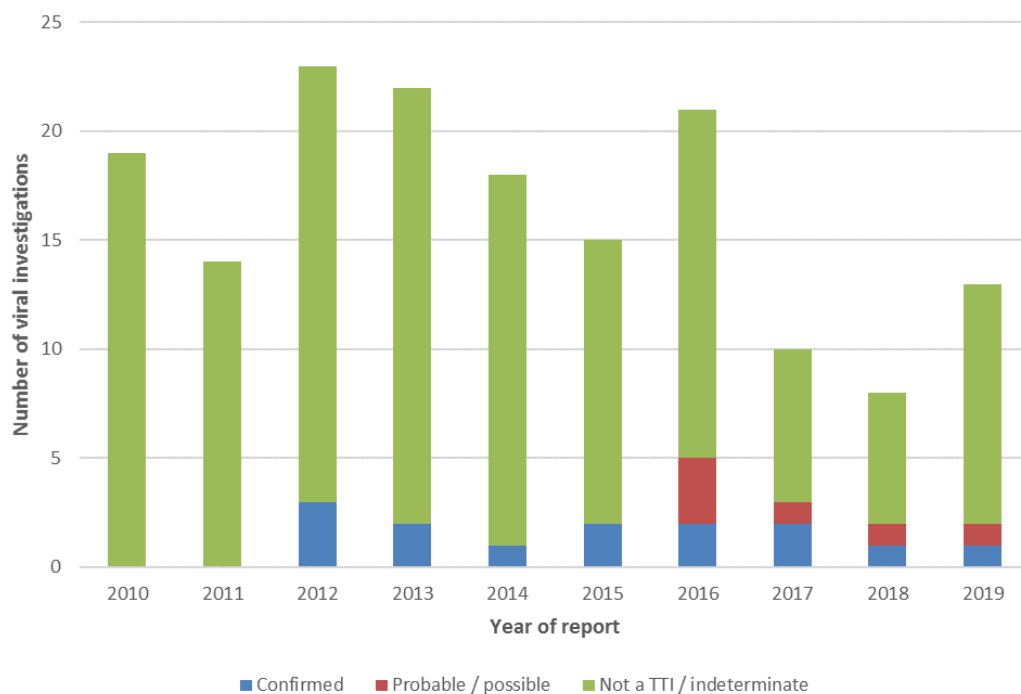
† The two HIV incidents were associated with window period donations (anti-HIV negative/HIV RNA positive) before HIV NAT screening was in place. A third window period donation in 2002 was transfused to an elderly patient, who died soon after surgery. The recipient's HIV status was therefore not determined and not included.

†† In 2004 there was an incident involving contamination of a pooled platelet pack with *Staphylococcus 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. Please contact the National Coordinator for Transfusion Transmitted Infections (see page X) for further information or alternative breakdown of data.

**Figure 5.1: Viral TTI investigations reported to NHSBT/PHE Epidemiology Unit, by year of report and investigation outcome, UK: 2010-2019**



**Figure 5.2: Bacterial TTI investigations reported to NHSBT/PHE Epidemiology Unit, by year of report and investigation outcome, UK: 2010-2019**

