



Data Tables of the Unlinked Anonymous Dried Blood Spot
Survey of Newborn Infants - Prevalence of HIV in Women
Giving Birth

Surveillance update: 2012

Survey Co-ordinated by the Health Protection Services, Health Protection Agency in
collaboration with the Institute of Child Health, UCL, London

Further information at:

http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1201871102663

Survey Methods

Pregnant women are an important group to target for HIV prevention as early diagnosis and appropriate management reduces mother to child transmission and improves the prognosis for the mother. Data from this group can also be used to contribute to the understanding of the role of HIV in the general population in the UK. The survey takes left over dried blood spots taken from infants around seven days after birth and tests them for maternal HIV infection. The spots are taken for routine metabolic screening and sent to one of 13 neonatal screening laboratories. In the 9 laboratories participating in the survey in 2011, once tested for routine purposes, extra spots are then tested for maternal HIV antibody. Demographic data are collected with spots through temporary linkage to birth registration records via the Office for National Statistics. All samples are irreversibly unlinked and anonymised prior to HIV testing.

Acknowledgements - this survey would be impossible without collaboration and support from:

Addenbrookes Hospital	Guys & St Thomas's Hospital
Data Tables of the Unlinked Ar	Manchester Children's Hospital
Birmingham Children's Hospital	Queen Alexandra Hospital, Portsmouth
Epsom & St Helier Hospitals Trust	Royal Berkshire Hospital
Health Protection Scotland	Sheffield Children's Hospital
Institute of Child Health, UCL	Sheffield General Hospital
John Radcliffe Hospital	University Hospital Aintree
Great Ormond Street Hospital	

Summary Tables A & B

Table A. Summary of total Dried Blood Spots (DBS) tested and confirmed positive by year

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total samples eligible	402,061	426,975	399,374	401,710	397,036	463,468	476,918	410,619	275,615	238,987
Total samples tested	400,809	425,648	398,351	399,834	394,212	460,650	474,168	409,898	275,345	238,635
Total positive samples detected	619	790	817	882	901	1003	983	912	687	533
Total prevalence	0.154%	0.186%	0.205%	0.221%	0.229%	0.218%	0.207%	0.222%	0.250%	0.223%

Table B. Summary of total DBS included in the Enhanced survey and therefore with demographic data available (see fig 3. onwards)

Total number in enhanced survey	182,719	198,774	251,378	321,302	330,373	344,279	356,024	270,503	275,345	238,635
Proportion of whole survey enhanced	46%	47%	63%	80%	84%	75%	75%	66%	100%	100%

Prevalence of HIV infection among women giving birth. Data from the Unlinked Anonymous Dried Blood Spot Survey of newborn infants¹: Results for 2002 - 2011

East Midlands										
Year	2002	2003	2004	2005 ³	2006 ³	2007	2008	2009 ⁵	2010	2011
Eligible specimens	40,707	41,075	44,401	21,987	11,499	48,085	47,180	35,256	-	-
Opt Outs	43	69	44	5	3	17	40	4	-	-
Insufficients	255	64	41	44	20	148	150	20	-	-
Total Tested	40,409	40,942	44,316	21,938	11,476	47,920	46,990	35,232	-	-
HIV antibody +ve newborn infants*	17	37	54	22	15	62	60	38	-	-
Prevalence %	0.042	0.090	0.122	0.100	0.131	0.129	0.128	0.108	-	-

East of England										
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eligible specimens	36,176	39,287	38,910	39,461	40,714	41,830	43,576	44,992	44,372	44,379
Opt Outs	15	87	1	3	0	0	13	14	42	177
Insufficients	85	92	29	18	9	2	616	141	14	8
Total Tested	36,076	39,108	38,880	39,440	40,750	41,828	42,947	44,837	44,316	44,193
HIV antibody +ve newborn infants*	20	32	47	50	64	71	89	85	91	88
Prevalence %	0.055	0.082	0.121	0.127	0.157	0.170	0.207	0.190	0.205	0.199

London										
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eligible specimens	106,118	113,474	114,787	117,359	119,630	126,366	130,247	132,541	133,943	133,694
Opt Outs	52	45	6	17	3	11	35	29	50	215
Insufficients	208	413	234	151	14	6	510	178	45	38
Total Tested	105,858	113,016	114,547	117,191	119,614	126,349	129,702	132,334	133,814	133,442
HIV antibody +ve newborn infants*	420	511	502	513	502	530	484	515	502	467
Prevalence %	0.397	0.452	0.438	0.438	0.420	0.419	0.373	0.389	0.375	0.350

North West										
Year	2002	2003	2004	2005	2006	2007	2008	2009 ⁵	2010	2011
Eligible specimens	69,989	77,255	74,245	74,573	77,830	78,317	82,153	58,977	57,002	55,332
Opt Outs	0	0	0	2	1	29	1	0	56	0
Insufficients	12	38	31	684	396	378	86	46	0	0
Total Tested	69,977	77,217	74,214	73,887	77,433	77,910	82,066	58,931	56,946	55,332
HIV antibody +ve newborn infants*	29	36	67	80	90	80	111	80	82	88
Prevalence %	0.041	0.047	0.090	0.108	0.116	0.103	0.135	0.136	0.144	0.159

South Central										
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eligible specimens	24,400	25,142	26,075	26,474	27,603	28,265	30,854	24,062	24,044	25,816
Opt Outs	20	13	22	18	13	17	14	5	0	0
Insufficients	431	444	533	785	2,345	2,140	1,176	154	0	2
Total Tested	23,949	24,685	25,520	25,671	25,245	26,108	29,664	23,903	24,044	25,814
HIV antibody +ve newborn infants*	24	27	38	58	51	48	51	48	36	22
Prevalence %	0.100	0.109	0.149	0.226	0.202	0.184	0.172	0.201	0.150	0.085

South East Coast										
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eligible specimens	46,979	49,185	48,504	49,197	50,824	51,011	52,210	52,373	51,361	52,373
Opt Outs	10	3	9	6	6	3	2	8	15	8
Insufficients	10	15	58	127	1	1	42	27	6	3
Total Tested	46,959	49,167	48,437	49,064	50,817	51,007	52,166	52,338	51,340	52,362
HIV antibody +ve newborn infants*	29	39	42	50	52	68	68	51	41	64
Prevalence %	0.062	0.079	0.087	0.102	0.102	0.133	0.130	0.097	0.080	0.122

West Midlands										
Year	2002	2003	2004	2005	2006	2007	2008	2009 ⁵	2010	2011
Eligible specimens	57,875	60,483	30,491	61,976	63,117	65,731	67,478	-	71,148	71,518
Opt Outs	0	0	0	0	0	0	0	-	72	10
Insufficients	8	27	6	1	2	3	2	-	0	0
Total Tested	57,867	60,456	30,485	61,975	63,115	65,728	67,476	-	71,076	71,508
HIV antibody +ve newborn infants*	45	76	34	78	99	107	97	-	130	128
Prevalence %	0.078	0.126	0.112	0.126	0.157	0.163	0.144	-	0.183	0.179

Yorkshire & The Humber ⁷										
Year	2002	2003	2004	2005 ³	2006 ³	2007	2008	2009 ⁵	2010	2011
Eligible specimens ⁸	19,817	21,074	21,961	10,683	5,819	23,863	23,220	17,240	-	-
Opt Outs	12	11	9	4	3	7	1	2	-	-
Insufficients	91	6	0	11	8	56	62	11	-	-
Total Tested	19,714	21,057	21,952	10,668	5,808	23,800	23,157	17,227	-	-
HIV antibody +ve newborn infants*	8	14	16	10	3	23	16	9	-	-
Prevalence %	0.041	0.066	0.073	0.094	0.052	0.097	0.069	0.052	-	-

South West										
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Eligible specimens	-	-	-	-	-	-	-	-	14,244	13,366
Opt Outs	-	-	-	-	-	-	-	-	0	0
Insufficients	-	-	-	-	-	-	-	-	0	2
Total Tested	-	-	-	-	-	-	-	-	14,244	13,364
HIV antibody +ve newborn infants*	-	-	-	-	-	-	-	-	8	20
Prevalence %	-	-	-	-	-	-	-	-	0.056	0.150

Regional Totals	ENGLAND TOTALS									
Year	2002	2003	2004	2005	2006	2007	2008	2009 ⁵	2010	2011
Eligible specimens	402,061	426,975	399,374	401,710	397,036	463,468	476,918	365,441	396,114	396,478
Opt Outs	152	228	91	55	29	84	106	62	235	410
Insufficients	1,100	1,099	932	1,821	2,795	2,734	2,644	577	65	53
Total Tested	400,809	425,648	398,351	399,834	394,258	460,650	474,168	364,802	395,780	396,016
HIV antibody +ve newborn infants*	619	790	817	882	901	1,003	983	854	890	877
Prevalence %	0.154	0.186	0.205	0.221	0.229	0.218	0.207	0.234	0.225	0.222

* These data are preliminary estimates only and in some cases the detection rates displayed may be >100%. This could have arisen because of several factors, which we are currently investigating.

1 HIV antibody positive newborn infants represent infection status of the mother, very few of these infants are themselves infected.

2 In 2010 and 2011 in areas outside London and the South East dried blood spots are only collected between April and September. Data are imputed to provide estimates for the whole year.

3 In 2005 and 2006 a problem occurred with dried blood spots not eluting meaning spots could not be tested. In total around 50% (July-Dec) and 75% (Jan-Sept) of all spots collected were omitted from the survey in 2005 and 2006 respectively. The areas affected are East Midlands and Yorkshire and the Humber. The NSHPC data presented excludes all reports of births during these periods.

4 Data for West Midlands in 2004 includes data from January-June only.

5 In 2009 data for East Midlands, North West, South Central and Yorkshire & The Humber was only collected between Jan-Sept. Data for the final 3 months of 2009 was imputed to provide estimates for the full year.

6 Data for West Midlands in 2009 is not available.

7 West Yorkshire, North Yorkshire, East Riding, Grimsby and Scunthorpe are not covered by this survey.

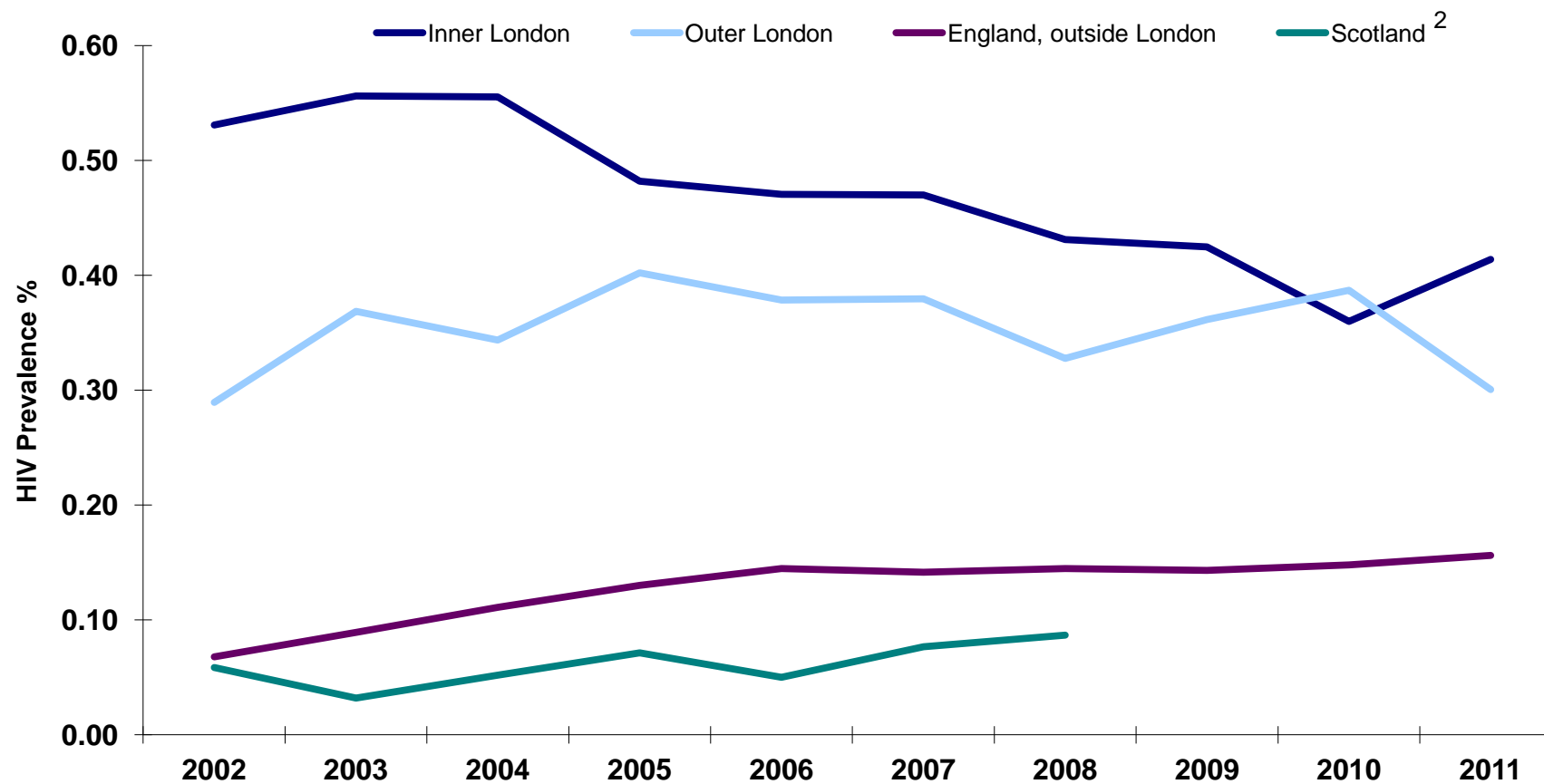
Table 2. Prevalence of HIV in women giving birth: London, England and Scotland 2002 - 2011

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Inner London										
HIV-1 seropositive	250	280	284	252	252	262	246	246	209	241
Total tested	47,104	50,339	51,131	52,284	53,566	55,746	57,045	57,915	58,092	58,248
Objections	28	25	5	11	2	3	22	13	25	19
Data Tables of the Unlink	108	236	138	96	6	1	170	69	18	70
Prevalence (%)	0.5307	0.5562	0.5554	0.4820	0.4704	0.4700	0.4312	0.4248	0.3598	0.4137
District range of prevalence	0.10-1.06	0.17-1.13	0.17-1.12	0.13-0.83	0.21-0.70	0.16-0.95	0.16-0.63	0.09-0.75		
Outer London										
HIV-1 seropositive	170	231	218	261	250	268	238	269	293	226
Total tested	58,751	62,677	63,416	64,907	66,053	70,603	72,657	74,419	75,722	75,194
Objections	24	20	1	6	0	8	13	16	20	20
Samples insufficient for testing	100	177	96	55	8	5	340	109	32	144
Prevalence (%)	0.2894	0.3686	0.3438	0.4021	0.3785	0.3796	0.3276	0.3615	0.3869	0.3006
District range of prevalence	0.04-0.54	0-0.76	0-0.78	0-0.66	0.08-0.79	0-0.71	0.10-0.68	0.12-0.73		
England, outside London										
HIV-1 seropositive	200	279	315	369	399	474	499	397	388	410
Total tested	294,951	312,632	283,804	283,525	275,574	335,171	344,466	277,566	262,514	262,573
Objections	100	183	85	38	26	73	71	39	20	15
Samples insufficient for testing	892	686	698	1681	2785	2730	2134	475	185	195
Prevalence (%)	0.0678	0.0892	0.1110	0.1301	0.1448	0.1414	0.1449	0.1430	0.1478	0.1561
PCT range of prevalence	0-0.25	0-0.48	0-0.46	0-0.23	0.05-0.22	0-0.63	0-0.54	0-0.57		
Scotland^{1,2}										
HIV-1 seropositive	30	17	28	19	14	22	27	-	-	-
Total tested	51,288	52,963	53,828	26,664	28,033	28,679	31,150	-	-	-
Objections	0	0	0	0	0	0	0	-	-	-
Samples insufficient for testing	0	0	0	0	0	0	0	-	-	-
Prevalence (%)	0.0585	0.0321	0.0520	0.0713	0.0499	0.0767	0.0867	-	-	-
District range of prevalence	0-0.19	0-0.09	0-0.11	0-1.99	0-0.18	0-0.24	0-0.19	-	-	-
Total Tested	452,094	478,611	452,179	427,380	423,226	490,199	505,318	-	-	-

1. In the survey in Scotland, co-ordinated by Health Protection Scotland, from 2005 onwards data are derived from women giving birth between 1st January and 30th June.

2. Data from Scotland are not available after 2008.

Figure 1. HIV prevalence¹ in pregnant women by area of residence in England and Scotland: 2002-2011



Data Source: Unlinked anonymous seroprevalence of newborn infant dried blood spots.

1 Includes previously diagnosed, those diagnosed through antenatal screening and those remaining undiagnosed.

2 Data from Scotland are no longer available from 2009 onwards.

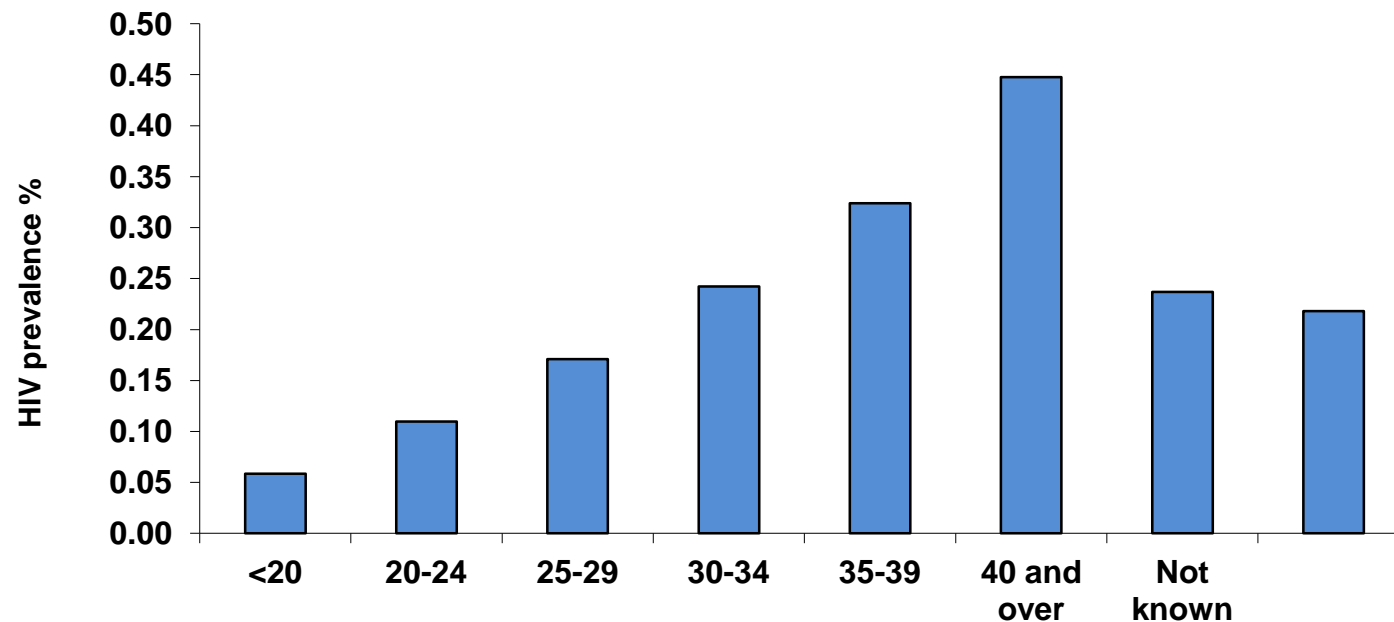
Table 3. Prevalence of HIV¹ in women giving birth in England by world region of birth: 2001 - 2010

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Unknown	%	0.23	0.32	0.54	0.43	0.28	0.26	0.37	0.39	0.21	0.40	0.32
	n/N	32 13,975	32 10,078	63 11,603	66 15,505	146 52,654	58 22,461	62 16,808	21 5,336	10 4,768	29 7,348	519 160,536
Sub-Saharan Africa	%	2.51	2.85	2.51	2.40	2.58	2.57	2.45	2.44	2.33	2.28	2.47
	n/N	292 11,635	399 14,022	474 18,883	548 22,799	535 20,708	645 25,061	630 25,706	582 23,852	714 30,705	615 26,965	5,434 220,336
Central America & Caribbean	%	0.37	0.63	0.64	0.79	0.66	0.61	0.70	0.78	1.02	0.57	0.69
	n/N	7 1,913	14 2,232	17 2,636	24 3,050	18 2,729	19 3,094	20 2,856	20 2,565	33 3,239	16 2,850	188 27,164
Central & East Asia	%	0	0	0	0.03	0	0.04	0.03	0.02	0.03	0.00	0.02
	n/N	0 1,936	0 2,275	0 3,370	1 3,892	0 3,780	2 5,106	2 5,860	1 5,360	2 7,322	0 6,947	8 45,848
South East Asia	%	0.07	0.25	0.17	0.19	0.21	0.41	0.13	0.20	0.28	0.58	0.27
	n/N	1 1,526	5 2,037	5 2,986	7 3,608	7 3,386	16 3,871	5 3,912	7 3,425	13 4,597	25 4,338	91 33,686
Southern Asia	%	0.01	0.03	0.03	0.02	0.03	0.01	0.02	0.04	0.02	0.03	0.02
	n/N	2 13,478	4 15,247	6 18,110	5 24,605	8 23,309	3 26,477	7 28,217	8 21,268	6 31,459	9 31,756	58 233,926
Eastern Europe	%	0.07	0	0.09	0.06	0.08	0.06	0.06	0.08	0.05	0.10	0.07
	n/N	1 1,481	0 2,112	3 3,272	3 4,799	5 5,905	7 11,116	8 14,418	11 14,013	11 21,318	21 20,932	70 99,366
South & West Europe	%	0.14	0.13	0.14	0.22	0.18	0.16	0.15	0.12	0.18	0.10	0.15
	n/N	7 5,064	7 5,515	11 7,753	19 8,663	14 7,723	14 8,563	13 8,762	10 8,086	21 11,727	10 10,817	126 82,673
Rest	%	0.06	0.05	0.02	0.08	0.09	0.08	0.05	0.05	0.08	0.10	0.07
	n/N	6 9,655	6 11,048	3 14,908	13 16,897	15 15,987	15 18,922	10 19,580	10 18,750	19 25,142	24 23,564	121 174,453
UK	%	0.03	0.04	0.05	0.04	0.04	0.04	0.04	0.05	0.04	0.05	0.04
	n/N	42 121,275	50 134,208	87 167,857	83 217,484	77 194,193	91 219,608	100 229,905	77 167,848	126 287,486	124 265,076	857 2,004,940
Total	%	0.22	0.26	0.27	0.24	0.25	0.25	0.24	0.28	0.29	0.22	0.24
	n/N	390 181,938	517 198,774	669 251,378	769 321,302	825 330,374	870 344,279	857 356,024	747 270,503	955 427,763	874 400,593	7,473 3,082,928

Data Source: Unlinked anonymous seroprevalence of newborn infant dried blood spots.

1 Includes previously diagnosed, those diagnosed through antenatal screening and those remaining undiagnosed.

Figure 5. HIV prevalence¹ among women giving birth in England by age group: 2011

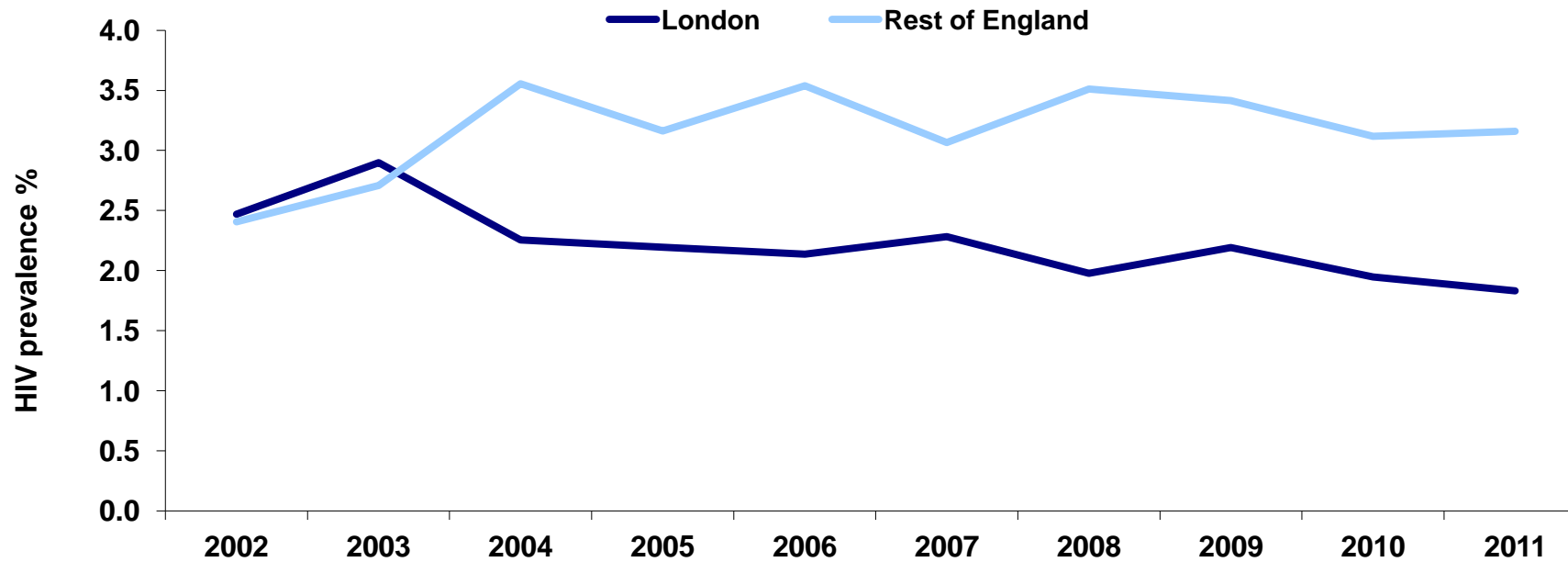


Age Group	<20	20-24	25-29	30-34	35-39	40 and over	Not known	Total
Positive DBS	9	64	159	245	187	67	143	874
Tested DBS	15,360	58,407	92,789	100,964	57,828	15,041	60,204	400,593
Prevalence	0.06%	0.11%	0.17%	0.24%	0.32%	0.45%	0.24%	0.22%

Data Source: Unlinked anonymous seroprevalence of newborn infant dried blood spots.

¹ Includes previously diagnosed, those diagnosed through antenatal screening and those remaining undiagnosed

Figure 4. Prevalence of HIV¹ in sub Saharan African born women giving birth by area of residence: England



		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
London	Positive DBS	242	334	343	363	276	408	354	408	367	325
	Tested DBS	9,802	11,525	15,205	16,551	12,914	17,887	17,899	18,616	18,854	17,742
	Prevalence	2.47%	2.90%	2.26%	2.19%	2.14%	2.28%	1.98%	2.19%	1.95%	1.83%
Rest of England	Positive DBS	42	65	126	176	121	142	266	172	286	283
	Tested DBS	1,746	2,400	3,543	5,567	3,419	4,632	7,574	5,037	9,172	8,957
	Prevalence	2.41%	2.71%	3.56%	3.16%	3.54%	3.07%	3.51%	3.41%	3.12%	3.16%

Data Source: Unlinked anonymous seroprevalence of newborn infant dried blood spots.

1 Includes previously diagnosed, those diagnosed through antenatal screening and those remaining undiagnosed.