

EPI-VIH Study

HIV prevalence in clients of a network of HIV/STI centres, 2000-2008

Participating centres:

Centro de ETS de Granada.
Centro de ETS "Costa del Sol" de Málaga.
Unidad de Promoción de Apoyo a la Salud (UPAS). Málaga
Centro de Diagnóstico y Prevención de ETS de Sevilla.
Unidad de ETS, Hospital Monte Naranco de Oviedo.
Unidad de ETS de Gijón.
Centro Dermatológico de Tenerife.
Sección de Vigilancia Epidemiológica. Servicio Salud Pública y C.O.F. "La Cagiga" Santander
Unidad ITS, CAP Drassanes de Barcelona.
Centro Sanitario Sandoval Servicio Madrileño de Salud (SMS).
Programa de Prevención del SIDA y ETS del Ayuntamiento de Madrid.
Unidad de Prevención y Educación Sanitaria sobre SIDA de Murcia.
Unidad ETS-SIDA. Centro de Salud Área II. Cartagena.
COFES Iturrama. Pamplona (Navarra).
Centro ETS Vitoria. Comarca Araba-Osakidetza.
Servicio de ETS. Sección de Enfermedades Infecciosas, Hospital de Basurto de Bilbao.
Plan del SIDA del País Vasco. San Sebastián.
Servicio de Epidemiología y Promoción de la Salud, La Rioja. Logroño.
Centro de Información y Prevención del Sida de Castellón.
Centro de Información y Prevención del Sida de Alicante.
Centro de Información y Prevención del Sida de Valencia.

Coordination:

Centro Nacional de Epidemiología, Instituto de Salud Carlos III.
Secretaría del Plan Nacional sobre Sida.

Financing:

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OBJECTIVES

- To describe the characteristics of persons tested for HIV in the HIV/STI centres that comprise the study network.
- To describe the characteristics of new HIV diagnoses in these HIV/STI centres.
- To describe the HIV prevalence, total and by sex, age, transmission route, year of diagnosis and region of birth.

METHODS

Design: Longitudinal descriptive study.

Period: 2000-2008.

Setting: Twenty HIV diagnostic centres, 13 of which also diagnose sexually transmitted infections (STI) (Table 1).

The STI centre "Costa del Sol" of Malaga ceased functioning in 2003, and since 2004 has been incorporated into the Health Promotion and Support Unit (Spanish acronym, UPAS). The STI unit of the Drassanes Primary Care Centre of Barcelona participated during the period 2000-2007.

Inclusion criterion: Persons who were voluntarily tested for HIV in any of the participating centres. Only confirmed results were considered.

The presence of HIV antibodies in serum was determined by the ELISA technique, and reactive samples were confirmed by Western blot or immunofluorescence.

First visits were distinguished from repeat visits. If successive visits were made within the same year, only the last visit was considered, and in case of successive visits in different years, the last visit in each year was considered. Thus, the same person may appear in different years.

No personal identifying information was used.

Table 1. Persons tested for HIV by centre and year of test

CENTER	Number of persons								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Centro de ETS de Granada	500	702	759	834	1,068	1,029	1,225	1,335	1,351
Centro de ETS "Costa del Sol" de Málaga	313	358	163	-	-	-	-	-	-
Unidad Promoción y Apoyo a la Salud (UPAS). Málaga	-	-	-	-	323	557	671	746	747
Centro de Diagnóstico y Prevención de ETS de Sevilla	1,581	1,629	1,713	1,816	1,754	1,796	2,009	2,256	3,130
Unidad de ETS, Hospital Monte Naranco de Oviedo	539	285	700	916	1,002	1,045	1,025	968	906
Unidad de ETS de Gijón	642	703	694	872	1,019	1,084	1,125	1,138	1,146
Centro Dermatológico de Tenerife	689	767	1,006	1,124	1,269	1,258	1,449	1,145	1,042
Sección Vigilancia Epidemiológica.COF La Cagiga.Santander	183	18	26	49	192	166	189	171	222
Unidad ITS, CAP Drassanes de Barcelona	1,448	2,452	2,814	3,044	2,717	2,079	2,209	1,286	-
Centro Sanitario Sandoval, Madrid	3,794	4,184	4,025	4,272	4,436	4,639	4,878	5,184	5,256
Programa de Prevención del SIDA y ETS del Ayto. Madrid	632	634	663	462	1,036	1,471	1,594	1,798	2,268
U. de Prev. y Educación Sanitaria sobre SIDA de Murcia	160	158	138	115	111	130	106	110	136
Unidad ETS-SIDA. Centro de Salud Área II. Cartagena	135	137	168	161	173	185	152	182	225
COFES Iturrama, Navarra	154	227	145	190	140	142	185	163	241
Centro ETS Vitoria. Comarca Araba-Osakidetza	145	209	247	245	249	353	314	286	234
Servicio de ETS, Hospital de Basurto de Bilbao	928	1,007	1,111	1,307	1,318	1,452	1,107	1,731	1,943
Plan del SIDA del País Vasco. San Sebastián	443	460	607	513	564	541	507	714	906
Sº Epidemiología y Promoción de la Salud, Logroño	135	166	276	230	202	195	186	119	208
Centro de Información y Prevención del Sida, Castellón	650	660	583	505	624	512	458	476	560
Centro de Información y Prevención del Sida, Alicante	1,453	1,398	2,107	1,784	1,958	1,820	1,926	2,028	2,058
Centro de Información y Prevención del Sida, Valencia	1,694	1,796	1,977	2,082	2,281	2,251	2,379	2,694	3,091
TOTAL	16,218	17,950	19,922	20,521	22,436	22,705	22,694	24,530	25,670

Analysis: The frequency distribution of the variables of interest was calculated both for all persons tested for HIV and for new HIV diagnoses. The prevalence of HIV infection was calculated as the number of persons diagnosed divided by the total number tested. The χ^2 test for trend was used to evaluate the trend during the period, and differences with $p<0.05$ were considered statistically significant.

RESULTS

a) Characteristics of persons tested for HIV

During the years 2000-2008 a total of 193,640 HIV tests were performed in the participating centres. Some 64.3% were conducted in persons attending for the first time, and the rest in individuals who had previously been tested for HIV in the same centre.

The number of requests for the test, both in first and repeat visits, increased considerably during the period. First visits increased from 10,940 in 2000 to 16,533 in 2008 (51.1%), and the annual number of repeat visits from 5,278 in 2000 to 9,137 in 2008 (73.1%) (Tables 2 and 3).

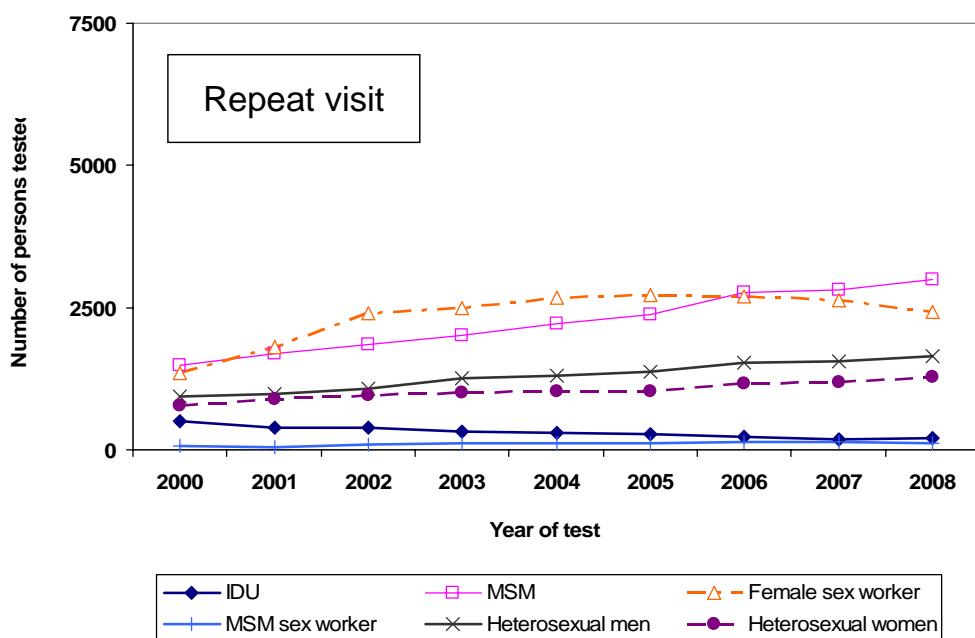
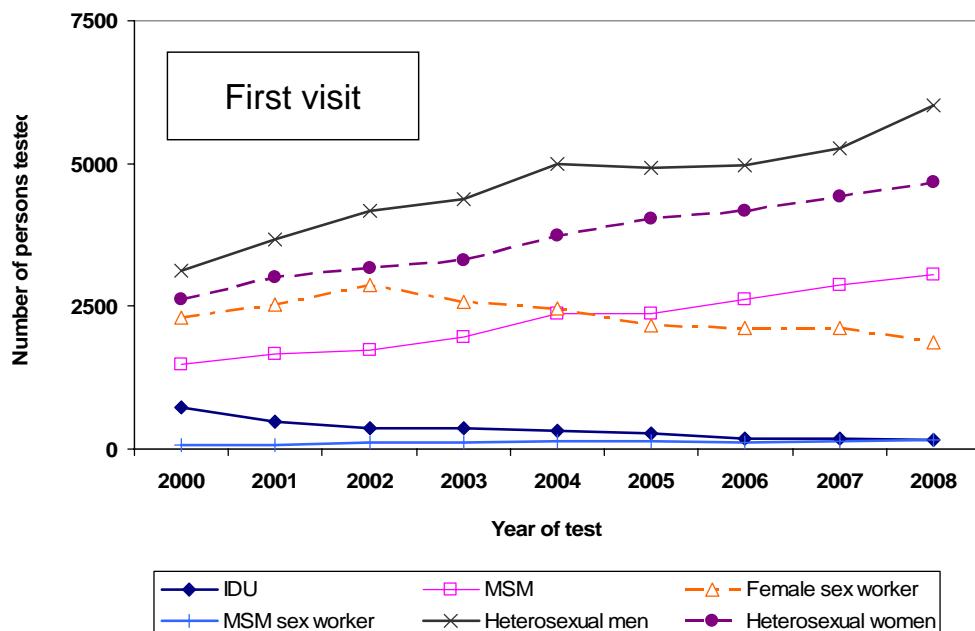
During the study period, the percentage of women was 45.6% (range: 41.6%-49.2%) for first visits and 46.7% (range: 42.8%-50.5%) for repeat visits. Persons aged 20-29 years constituted the principal age group in first visits, while those aged 25-34 years were the main age group in repeat visits (Tables 2 and 3).

By HIV transmission route, the largest percentage of test requests in the first visit was in heterosexual men, who also showed a clear upward trend during the period, from 28.6% in 2000 to 36.4% in 2008 ($p<0.05$). They were followed by heterosexual women, who constituted 26.7% (range: 23.9%-28.5%) of all first visits, a proportion that was stable between 2000 and 2002 and then increased, and female sex workers, who made up 16.9% (range: 11.3%-22.4%), a percentage that remained stable up to 2002 and then decreased significantly beginning in 2003 ($p<0.05$). Men who have sex with men (MSM) showed an increase in the percentage of first visits from 2003 (15.0%) to 2008 (18.4%) ($p<0.05$). It is notable that test requests on the part of intravenous drug users (IDUs) decreased throughout the period, the only group in which this occurred (Table 2 and Figure 1).

The distribution of these categories was different in the repeat visits, where the main group was female sex workers, who represented 30.6% of repeat visits for the whole period (range: 26.5%-33.9%), presenting an increasing proportion up to 2002 and then decreasing from 2003 to 2008 ($p<0.05$). The following group was MSM, who represented 29.2% of all repeat visits, a percentage that remained stable up to 2005 and increased thereafter ($p<0.05$). The same as seen in first visits, IDU requests for HIV tests decreased systematically (Table 3 and Figure 1).

By region of birth, 36.5% (range: 33.8%-40.3%) of test requests in first visits during the period were found in persons whose origin was other than Spain, with an increase in this percentage up to 2002 and a decrease in the period 2003-2008 ($p<0.05$). In repeat visits, the percentage of persons from other countries was 39.9%; this percentage increased considerably between 2000 and 2005 (from 28.6% to 42.4%), after which it stabilized in the last 3 years. The primary region of birth, regardless of type of visit, was Latin America (Tables 2 and 3).

Figure 1. Description of persons tested for HIV, by year of test, type of visit and route of transmission.



*IDU: Intravenous drug user; MSM: Men who have sex with men

Table 2. Characteristics of persons tested for HIV by year of test. First visits.

	2000		2001		2002		2003		2004		2005		2006		2007		2008		Total	
	First visit		First visit		First visit		First visit		First visit		First visit		First visit		First visit		First visit		First visit	
	N	(%)	N	(%)																
Sex																				
Man	5,635	51.5	6,088	50.9	6,496	50.6	6,876	52.7	7,978	55.2	7,890	54.9	8,144	55.3	8,659	55.7	9,581	58.0	67,347	54.1
Woman	5,294	48.4	5,849	48.9	6,320	49.2	6,133	47.0	6,435	44.5	6,454	44.9	6,533	44.4	6,813	43.9	6,868	41.6	56,699	45.6
Transgender female	11	0.1	17	0.1	31	0.2	28	0.2	35	0.2	38	0.3	49	0.3	61	0.4	80	0.5	350	0.3
Age group (years)																				
<15	19	0.2	12	0.1	16	0.1	29	0.2	18	0.1	26	0.2	33	0.2	32	0.2	27	0.2	212	0.2
15-19	600	5.5	545	4.6	625	4.9	568	4.4	631	4.4	678	4.7	823	5.6	758	4.9	816	4.9	6,044	4.9
20-24	3,039	27.8	3,243	27.1	3,424	26.7	3,325	25.5	3,279	22.7	3,269	22.7	3,313	22.5	3,543	22.8	3,627	21.9	30,062	24.2
25-29	2,881	26.4	3,088	25.8	3,468	27.0	3,541	27.2	3,995	27.7	3,828	26.6	4,020	27.3	4,247	27.3	4,243	25.7	33,311	26.8
30-34	1,835	16.8	2,239	18.7	2,247	17.5	2,404	18.4	2,625	18.2	2,758	19.2	2,662	18.1	2,873	18.5	3,283	19.9	22,926	18.4
35-39	1,240	11.3	1,300	10.9	1,466	11.4	1,355	10.4	1,728	12.0	1,663	11.6	1,725	11.7	1,789	11.5	1,934	11.7	14,200	11.4
40-44	627	5.7	745	6.2	821	6.4	838	6.4	960	6.6	994	6.9	1,029	7.0	1,075	6.9	1,174	7.1	8,263	6.6
45-49	340	3.1	343	2.9	366	2.8	474	3.6	554	3.8	523	3.6	567	3.8	572	3.7	647	3.9	4,386	3.5
>=50	351	3.2	435	3.6	414	3.2	502	3.9	649	4.5	647	4.5	559	3.8	650	4.2	773	4.7	4,980	4.0
Transmission route (mutually exclusive)																				
IDU or ex-IDU	723	6.6	490	4.1	359	2.8	376	2.9	317	2.2	271	1.9	187	1.3	185	1.2	159	1.0	3,067	2.5
MSM	1,473	13.5	1,674	14.0	1,737	13.5	1,955	15.0	2,382	16.5	2,381	16.5	2,619	17.8	2,863	18.4	3,046	18.4	20,130	16.2
Female sex workers	2,312	21.1	2,520	21.1	2,873	22.4	2,571	19.7	2,466	17.1	2,167	15.1	2,125	14.4	2,112	13.6	1,871	11.3	21,017	16.9
MSM sex workers	63	0.6	71	0.6	111	0.9	119	0.9	127	0.9	144	1.0	113	0.8	134	0.9	170	1.0	1,052	0.8
Heterosexual men	3,125	28.6	3,674	30.7	4,171	32.5	4,388	33.7	4,982	34.5	4,916	34.2	4,964	33.7	5,273	33.9	6,017	36.4	41,510	33.4
Heterosexual women	2,617	23.9	3,003	25.1	3,176	24.7	3,314	25.4	3,740	25.9	4,028	28.0	4,175	28.3	4,429	28.5	4,684	28.3	33,166	26.7
Unknown	627	5.7	522	4.4	422	3.3	314	2.4	434	3.0	487	3.4	550	3.7	544	3.5	586	3.5	4,486	3.6
Region of birth																				
Spain	5,638	66.2	7,166	63.1	7,665	59.7	8,027	61.6	9,043	62.7	9,439	65.6	9,380	63.8	9,880	63.6	10,836	65.5	77,074	63.5
Other:	2,873	33.8	4,192	36.9	5,183	40.3	5,000	38.4	5,389	37.3	4,949	34.4	5,322	36.2	5,654	36.4	5,696	34.5	44,258	36.5
Western Europe	253	3.0	424	3.7	522	4.1	493	3.8	594	4.1	567	3.9	567	3.9	613	3.9	562	3.4	4,595	3.8
Eastern Europe	188	2.2	321	2.8	412	3.2	543	4.2	811	5.6	738	5.1	764	5.2	812	5.2	737	4.5	5,326	4.4
Latin America	2,135	25.1	2,816	24.8	3,387	26.4	3,139	24.1	3,134	21.7	2,827	19.6	3,109	21.1	3,370	21.7	3,437	20.8	27,354	22.5
Sub-Saharan Africa	119	1.4	381	3.4	525	4.1	464	3.6	464	3.2	431	3.0	489	3.3	502	3.2	575	3.5	3,950	3.3
North Africa	101	1.2	123	1.1	188	1.5	203	1.6	224	1.6	191	1.3	220	1.5	216	1.4	225	1.4	1,691	1.4
Other	77	0.9	127	1.1	149	1.2	158	1.2	162	1.1	195	1.4	173	1.2	141	0.9	160	1.0	1,342	1.1
TOTAL	10,940	100	11,954	100	12,849	100	13,037	100	14,448	100	14,394	100	14,733	100	15,540	100	16,533	100	124,428	100

IDU: Intravenous drug user; MSM: Men who have sex with men.

*Note: The percentages are calculated for the total number of cases with information for each variable.

Table 3. Characteristics of persons tested for HIV, by year of test: Repeat visits.

	2000		2001		2002		2003		2004		2005		2006		2007		2008		Total	
	Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit	
	N	(%)	N	(%)																
Sex																				
Man	2,950	55.9	3,106	51.8	3,464	49.0	3,790	50.6	4,049	50.7	4,288	51.6	4,859	54.2	4,868	54.2	5,162	56.5	36,536	52.8
Woman	2,314	43.8	2,868	47.8	3,575	50.5	3,666	49.0	3,897	48.8	3,966	47.7	4,049	45.2	4,047	45.0	3,913	42.8	32,295	46.7
Transgender female	14	0.3	22	0.4	34	0.5	28	0.4	42	0.5	55	0.7	51	0.6	71	0.8	59	0.6	376	0.5
Age group (years)																				
<15	0	0.0	1	0.0	0	0.0	2	0.0	0	0.0	2	0.0	1	0.0	3	0.0	2	0.0	11	0.0
15-19	86	1.6	104	1.7	116	1.6	95	1.3	116	1.5	95	1.1	114	1.3	123	1.4	129	1.4	978	1.4
20-24	837	15.9	949	15.8	1,125	15.9	1,126	15.1	1,126	14.1	1,086	13.1	1,078	12.0	1,049	11.7	1,047	11.5	9,423	13.6
25-29	1,241	23.5	1,455	24.3	1,704	24.1	1,767	23.6	1,978	24.8	2,023	24.4	2,137	23.9	2,147	23.9	2,067	22.6	16,519	23.9
30-34	1,306	24.8	1,475	24.6	1,645	23.3	1,712	22.9	1,854	23.3	1,870	22.5	2,088	23.3	2,030	22.6	2,083	22.8	16,063	23.2
35-39	895	17.0	982	16.4	1,234	17.5	1,341	17.9	1,362	17.1	1,478	17.8	1,648	18.4	1,595	17.7	1,613	17.7	12,148	17.6
40-44	473	9.0	513	8.6	645	9.1	727	9.7	806	10.1	894	10.8	967	10.8	1,033	11.5	1,102	12.1	7,160	10.4
45-49	213	4.0	267	4.5	312	4.4	365	4.9	364	4.6	456	5.5	487	5.4	528	5.9	550	6.0	3,542	5.1
>=50	224	4.2	249	4.2	289	4.1	344	4.6	362	4.5	403	4.9	440	4.9	478	5.3	544	6.0	3,333	4.8
Transmission route (mutually exclusive)																				
IDU or ex-IDU	493	9.3	390	6.5	391	5.5	310	4.1	291	3.6	278	3.3	235	2.6	182	2.0	199	2.2	2,769	4.0
MSM	1,485	28.1	1,681	28.0	1,856	26.2	2,022	27.0	2,208	27.6	2,379	28.6	2,775	31.0	2,807	31.2	2,990	32.7	20,203	29.2
Female sex workers	1,355	25.7	1,813	30.2	2,396	33.9	2,482	33.2	2,667	33.4	2,728	32.8	2,687	30.0	2,631	29.3	2,424	26.5	21,183	30.6
MSM sex workers	63	1.2	57	1.0	94	1.3	104	1.4	105	1.3	114	1.4	127	1.4	127	1.4	112	1.2	903	1.3
Heterosexual men	929	17.6	980	16.3	1,080	15.3	1,252	16.7	1,305	16.3	1,377	16.6	1,535	17.1	1,559	17.3	1,645	18.0	11,662	16.8
Heterosexual women	785	14.9	897	15.0	951	13.4	1,002	13.4	1,034	12.9	1,020	12.3	1,160	12.9	1,197	13.3	1,271	13.9	9,317	13.5
Unknown	168	3.2	178	3.0	305	4.3	312	4.2	378	4.7	413	5.0	442	4.9	483	5.4	496	5.4	3,175	4.6
Region of birth																				
Spain	2,274	71.4	3,740	65.4	4,326	61.2	4,345	58.8	4,636	58.2	4,785	57.6	5,252	58.7	5,175	57.9	5,493	60.1	40,026	60.1
Other:	909	28.6	1,975	34.6	2,746	38.8	3,045	41.2	3,334	41.8	3,517	42.4	3,694	41.3	3,765	42.1	3,642	39.9	26,627	39.9
Western Europe	52	1.6	115	2.0	125	1.8	143	1.9	135	1.7	141	1.7	193	2.2	173	1.9	161	1.8	1,238	1.9
Eastern Europe	43	1.4	100	1.7	149	2.1	185	2.5	295	3.7	352	4.2	340	3.8	397	4.4	393	4.3	2,254	3.4
Latin America	725	22.8	1,577	27.6	2,203	31.2	2,385	32.3	2,555	32.1	2,632	31.7	2,766	30.9	2,818	31.5	2,714	29.7	20,375	30.6
Sub-Saharan Africa	41	1.3	103	1.8	176	2.5	211	2.9	241	3.0	254	3.1	226	2.5	260	2.9	271	3.0	1,783	2.7
North Africa	34	1.1	46	0.8	67	0.9	68	0.9	61	0.8	78	0.9	102	1.1	78	0.9	69	0.8	603	0.9
Other	14	0.4	34	0.6	26	0.4	53	0.7	47	0.6	60	0.7	67	0.7	39	0.4	34	0.4	374	0.6
TOTAL	5,278	100	5,996	100	7,073	100	7,484	100	7,988	100	8,309	100	8,961	100	8,986	100	9,137	100	69,212	100

IDU: Intravenous drug user; MSM: Men who have sex with men.

*Note: The percentages are calculated for the total number of cases with information for each variable.

b) Description of new HIV diagnoses

A total of 4,403 new HIV infections were diagnosed during the period. Of this 3,219 (73.1%) were detected in first visits. The absolute number of new diagnoses in first visits decreased between 2000 and 2002 (from 345 to 303), and increased in 2003, when there were 329 new diagnoses, rising to 464 diagnoses in 2008. In repeat visits, this number was stable between 2000 and 2004, with a steady increase thereafter, from 122 cases in 2005 to 217 in 2008 (Tables 4 and 5).

Some 77.0% (range: 69.8-81.5%) of cases diagnosed in first visits were in men, compared to 86.5% in repeat visits. Persons aged 25-34 comprised the largest age group throughout the period, both in first and repeat visits (Tables 4 and 5).

The largest percentage of diagnoses in first visits was in MSM and IDUs, but while the number of diagnoses in the latter group decreased from 139 (40.3%) in 2000 to 31 (6.7%) in 2008 ($p<0.05$), it increased in MSM from 109 (31.6%) to 287 (61.9%) between 2000 and 2008 ($p<0.05$) (Table 4, Figure 2).

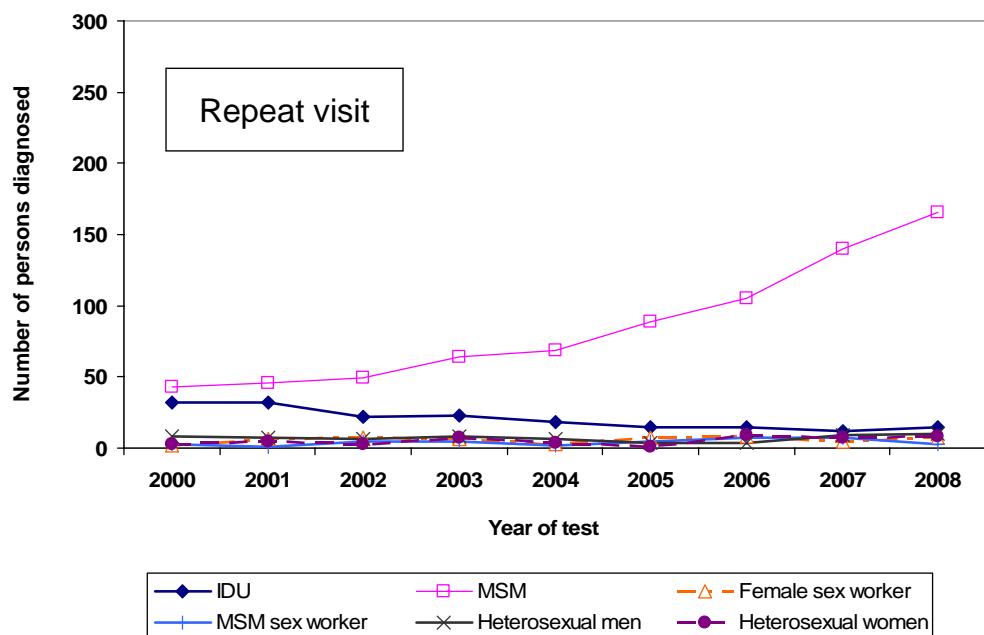
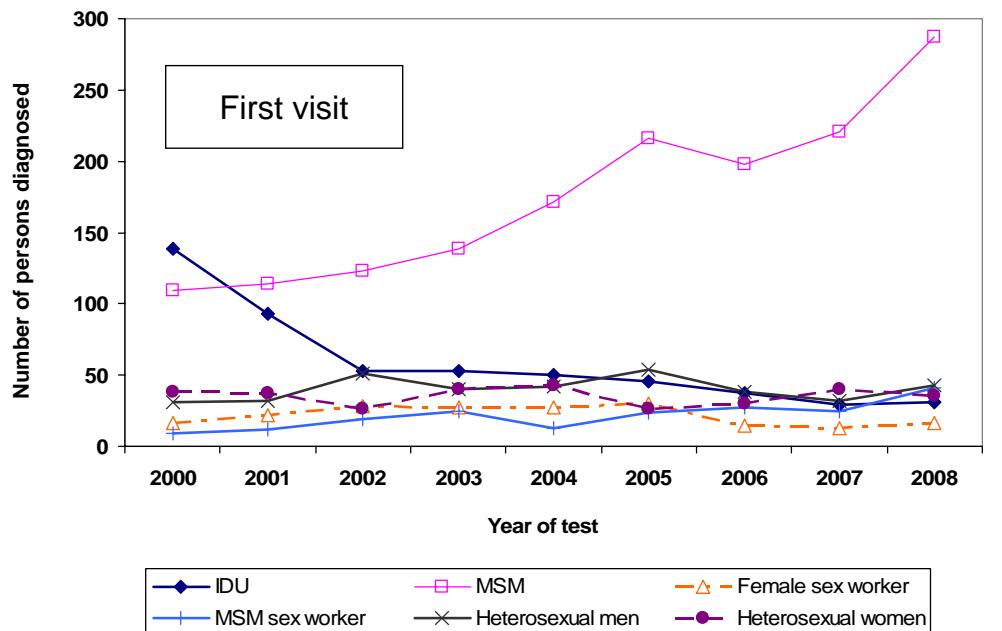
These were also the two largest categories in repeat visits, with the same trend observed, falling from 32 (34.0%) diagnoses in 2000 to 15 (6.9%) in 2008 for IDUs, and rising from 43 (45.7%) diagnoses to 166 (76.5%) in MSM ($p<0.05$) (Table 5, Figure 2).

Female sex workers made up 4.6% of diagnoses in first visits in 2000, rising to 9.2% in 2002, and then decreasing to 3.4% in 2008 ($p<0.05$). In repeat visits the proportion went from 2.1% to 3.2% between 2000 and 2008, a difference that was not statistically significant (Tables 4 and 5).

Heterosexual men comprised 9.0% of diagnoses in first visits in 2000, increasing to 16.8% in 2002 and decreasing to 9.3% in 2008 ($p<0.05$). The proportion in heterosexual women varied between 6.5% and 12.3% during the period, a difference that did not reach statistical significance. With respect to repeat visits, fluctuations were seen in these percentages in both men and women throughout the period (Tables 4 and 5).

Among persons diagnosed in the first visit, the proportion of those from other countries increased from 23.6% in 2000 to 47.9% in 2002 ($p<0.05$) and stabilized in the following years. In repeat visits, an upward trend was seen throughout the period ($p<0.05$). The main region of birth among those diagnosed was Latin America (Tables 4 and 5).

Figure 2. Description of new HIV diagnoses, by year of test, type of visit and route of transmission



*IDU: Intravenous drug user; MSM: Men who have sex with men

Table 4. Characteristics of new HIV diagnoses by year of test. First visits.

	2000		2001		2002		2003		2004		2005		2006		2007		2008		Total	
	First visit		First visit		First visit		First visit		First visit		First visit		First visit		First visit		First visit		First visit	
	N	(%)	N	(%)																
Sex																				
Man	260	75.4	220	69.8	227	74.9	242	73.6	261	74.4	326	81.5	281	80.5	285	78.5	376	81.0	2,478	77.0
Woman	85	24.6	91	28.9	66	21.8	81	24.6	82	23.4	63	15.8	56	16.0	61	16.8	66	14.2	651	20.2
Transgender female	0	0.0	4	1.3	10	3.3	6	1.8	8	2.3	11	2.8	12	3.4	17	4.7	22	4.7	90	2.8
Age group (years)																				
<15	0	0.0	0	0.0	0	0.0	1	0.3	1	0.3	0	0.0	0	0.0	1	0.3	0	0.0	3	0.1
15-19	5	1.4	5	1.6	5	1.7	5	1.5	9	2.6	4	1.0	5	1.4	12	3.3	14	3.0	64	2.0
20-24	56	16.2	51	16.2	44	14.5	50	15.2	51	14.5	66	16.5	42	12.0	53	14.6	81	17.5	494	15.3
25-29	76	22.0	50	15.9	75	24.8	88	26.7	74	21.1	76	19.0	101	28.9	111	30.6	118	25.4	769	23.9
30-34	82	23.8	82	26.0	81	26.7	75	22.8	72	20.5	112	28.0	61	17.5	71	19.6	96	20.7	732	22.7
35-39	77	22.3	65	20.6	53	17.5	68	20.7	72	20.5	66	16.5	70	20.1	50	13.8	52	11.2	573	17.8
40-44	24	7.0	36	11.4	32	10.6	24	7.3	42	12.0	43	10.8	41	11.7	34	9.4	44	9.5	320	9.9
45-49	10	2.9	8	2.5	6	2.0	13	4.0	16	4.6	16	4.0	18	5.2	15	4.1	32	6.9	134	4.2
>=50	15	4.3	18	5.7	7	2.3	5	1.5	14	4.0	17	4.3	11	3.2	16	4.4	27	5.8	130	4.0
Transmission route (mutually exclusive)																				
IDU or ex-IDU	139	40.3	93	29.5	53	17.5	53	16.1	50	14.2	46	11.5	37	10.6	29	8.0	31	6.7	531	16.5
MSM	109	31.6	114	36.2	123	40.6	139	42.2	171	48.7	216	54.0	198	56.7	221	60.9	287	61.9	1,578	49.0
Female sex workers	16	4.6	22	7.0	28	9.2	27	8.2	27	7.7	30	7.5	15	4.3	13	3.6	16	3.4	194	6.0
MSM sex workers	9	2.6	12	3.8	19	6.3	25	7.6	13	3.7	24	6.0	27	7.7	25	6.9	41	8.8	195	6.1
Heterosexual men	31	9.0	32	10.2	51	16.8	40	12.2	42	12.0	54	13.5	38	10.9	32	8.8	43	9.3	363	11.3
Heterosexual women	38	11.0	37	11.7	26	8.6	40	12.2	43	12.3	26	6.5	30	8.6	40	11.0	36	7.8	316	9.8
Unknown	3	0.9	5	1.6	3	1.0	5	1.5	5	1.4	4	1.0	4	1.1	3	0.8	10	2.2	42	1.3
Region of birth																				
Spain	185	76.4	202	64.7	158	52.1	182	55.3	200	57.0	220	55.0	177	50.9	193	53.2	263	56.7	1,780	57.2
Other:	57	23.6	110	35.3	145	47.9	147	44.7	151	43.0	180	45.0	171	49.1	170	46.8	201	43.3	1,332	42.8
Western Europe	9	3.7	16	5.1	9	3.0	15	4.6	15	4.3	18	4.5	12	3.4	8	2.2	12	2.6	114	3.7
Eastern Europe	3	1.2	5	1.6	14	4.6	9	2.7	9	2.6	14	3.5	16	4.6	14	3.9	19	4.1	103	3.3
Latin America	35	14.5	62	19.9	81	26.7	76	23.1	85	24.2	106	26.5	115	33.0	115	31.7	143	30.8	818	26.3
Sub-Saharan Africa	8	3.3	22	7.1	32	10.6	34	10.3	33	9.4	32	8.0	15	4.3	26	7.2	23	5.0	225	7.2
North Africa	1	0.4	3	1.0	7	2.3	9	2.7	6	1.7	6	1.5	7	2.0	4	1.1	2	0.4	45	1.4
Other	1	0.4	2	0.6	2	0.7	4	1.2	3	0.9	4	1.0	6	1.7	3	0.8	2	0.4	27	0.9
TOTAL	345	100	315	100	303	100	329	100	351	100	400	100	349	100	363	100	464	100	3,219	100

IDU: Intravenous drug user; MSM: Men who have sex with men.

*Note: The percentages are calculated for the total number of cases with information for each variable.

Table 5. Characteristics of new HIV diagnoses by year of test. Repeat visits.

	2000		2001		2002		2003		2004		2005		2006		2007		2008		Total	
	Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit		Repeat visit	
	N	(%)																		
Sex																				
Man	77	81.9	78	79.6	81	81.8	95	83.3	96	88.1	107	87.7	128	86.5	164	89.6	198	91.2	1,024	86.5
Woman	16	17.0	19	19.4	18	18.2	19	16.7	11	10.1	12	9.8	20	13.5	17	9.3	19	8.8	151	12.8
Transgender female	1	1.1	1	1.0	0	0.0	0	0.0	2	1.8	3	2.5	0	0.0	2	1.1	0	0.0	9	0.8
Age group (years)																				
<15	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
15-19	0	0.0	1	1.0	1	1.0	0	0.0	2	1.8	1	0.8	1	0.7	0	0.0	2	0.9	8	0.7
20-24	2	2.1	5	5.1	10	10.1	9	7.9	8	7.3	9	7.4	11	7.4	15	8.2	27	12.4	96	8.1
25-29	30	31.9	22	22.4	25	25.3	26	22.8	23	21.1	25	20.5	36	24.3	50	27.3	42	19.4	279	23.6
30-34	23	24.5	33	33.7	24	24.2	29	25.4	29	26.6	40	32.8	35	23.6	39	21.3	44	20.3	296	25.0
35-39	21	22.3	22	22.4	21	21.2	25	21.9	27	24.8	23	18.9	36	24.3	45	24.6	52	24.0	272	23.0
40-44	6	6.4	7	7.1	11	11.1	16	14.0	12	11.0	18	14.8	20	13.5	19	10.4	23	10.6	132	11.1
45-49	2	2.1	3	3.1	3	3.0	6	5.3	5	4.6	3	2.5	8	5.4	10	5.5	14	6.5	54	4.6
>=50	10	10.6	5	5.1	4	4.0	3	2.6	3	2.8	3	2.5	1	0.7	5	2.7	13	6.0	47	4.0
Transmission route (mutually exclusive)																				
IDU or ex-IDU	32	34.0	32	32.7	22	22.2	23	20.2	18	16.5	15	12.3	15	10.1	12	6.6	15	6.9	184	15.5
MSM	43	45.7	46	46.9	49	49.5	64	56.1	69	63.3	89	73.0	105	70.9	140	76.5	166	76.5	771	65.1
Female sex workers	2	2.1	6	6.1	7	7.1	6	5.3	3	2.8	7	5.7	8	5.4	5	2.7	7	3.2	51	4.3
MSM sex workers	3	3.2	1	1.0	5	5.1	5	4.4	2	1.8	5	4.1	7	4.7	7	3.8	3	1.4	38	3.2
Heterosexual men	8	8.5	7	7.1	6	6.1	8	7.0	6	5.5	4	3.3	4	2.7	9	4.9	10	4.6	62	5.2
Heterosexual women	3	3.2	5	5.1	3	3.0	7	6.1	4	3.7	1	0.8	9	6.1	7	3.8	8	3.7	47	4.0
Unknown	3	3.2	1	1.0	7	7.1	1	0.9	7	6.4	1	0.8	0	0.0	3	1.6	8	3.7	31	2.6
Region of birth																				
Spain	40	83.3	79	89.8	74	74.7	89	79.5	81	75.0	94	77.7	104	70.3	126	69.2	166	76.5	853	76.0
Other:	8	16.7	9	10.2	25	25.3	23	20.5	27	25.0	27	22.3	44	29.7	56	30.8	51	23.5	270	24.0
Western Europe	0	0.0	1	1.1	3	3.0	1	0.9	3	2.8	2	1.7	5	3.4	6	3.3	0	0.0	21	1.9
Eastern Europe	1	2.1	0	0.0	2	2.0	1	0.9	2	1.9	3	2.5	2	1.4	1	0.5	5	2.3	17	1.5
Latin America	6	12.5	7	8.0	14	14.1	15	13.4	18	16.7	20	16.5	33	22.3	45	24.7	36	16.6	194	17.3
Sub-Saharan Africa	0	0.0	1	1.1	6	6.1	4	3.6	3	2.8	1	0.8	2	1.4	1	0.5	6	2.8	24	2.1
North Africa	1	2.1	0	0.0	0	0.0	0	0.0	0	0.0	1	0.8	2	1.4	2	1.1	1	0.5	7	0.6
Other	0	0.0	0	0.0	0	0.0	2	1.8	1	0.9	0	0.0	0	0.0	1	0.5	3	1.4	7	0.6
TOTAL	94	100	98	100	99	100	114	100	109	100	122	100	148	100	183	100	217	100	1,184	100

IDU: Intravenous drug user; MSM: Men who have sex with men.

*Note: The percentages are calculated for the total number of cases with information for each variable.

c) Description of HIV prevalence

The global HIV prevalence in first visits in 2000-2008 was 2.6%, which is higher than the 1.7% found in repeat visits. The HIV prevalence in first visits fluctuated between 3.2% and 2.8%, with no significant trend observed in the period. In repeat visits a stabilization was seen between 2000 and 2005, followed by an increase after that date ($p<0.05$) (Tables 6 and 7, Figure 3).

In first visits, the HIV prevalence in men fell from 4.6% in 2000 to 3.9% in 2008, and in women from 1.6% to 1.0% in the same years, although the decline was statistically significant only in the latter case. In repeat visits, the prevalence in men remained stable between 2000 and 2006, and increased in the last 2 years of the period ($p<0.05$), and in women it remained stable throughout the period (Tables 6 and 7).

By route of transmission, in first visits the highest prevalence was in IDUs, with a decrease seen between 2000 and 2003 (from 19.2% to 14.1%), followed by a stabilization between 2004 and 2008. In repeat visits, the prevalence in IDUs fluctuated between 6.5% in 2000 and 7.5% in 2008, with no clear trend (Tables 6 and 7).

Among MSM without other risk exposures, the HIV prevalence in the first visit fluctuated between 7.4% in 2002 and 7.2% in 2004, stabilizing at higher levels in the following years and reaching 9.4% in 2008. In repeat visits, the prevalence clearly increased during the period (from 2.9% to 5.6%) ($p<0.05$). Also of note is the high prevalence in MSM sex workers: the prevalence in the first visit for the overall period was 18.5%, and 4.2% in repeat visits (non-statistically significant trends). The prevalence was much lower in the remaining transmission categories than in IDUs and MSM - around 1-1.2% in first visits and less than 1% in repeat visits. A significant downward trend in heterosexual men and women was seen in first visits (Tables 6 and 7).

Among persons from other countries, the situation with respect to those from Spain is heterogeneous. For the whole period and in first visits, natives from Sub-Saharan Africa and Latin America had significantly higher prevalences than Spaniards ($p<0.05$). Conversely, the highest prevalences in repeat visits were seen in

Spaniards and persons from Western Europe. The prevalence in repeat visits in Spaniards was significantly higher than in persons from Eastern Europe, Latin America and Sub-Saharan Africa ($p<0.05$) (Figure 4). With regard to the prevalence trend, increased prevalence was observed in Latin Americans in both first and repeat visits (Tables 6 and 7).

Figure 3. HIV prevalence (%) by year of test and type of visit, 2000-2008

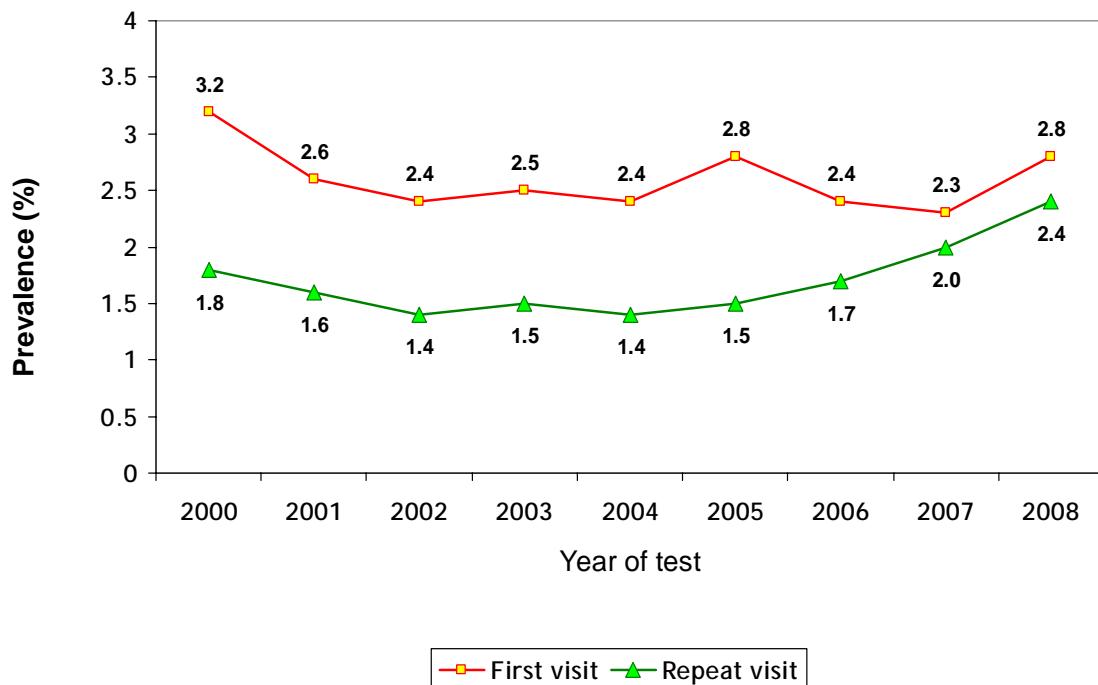


Figure 4. HIV prevalence (%) by region of birth and type of visit, 2000-2008

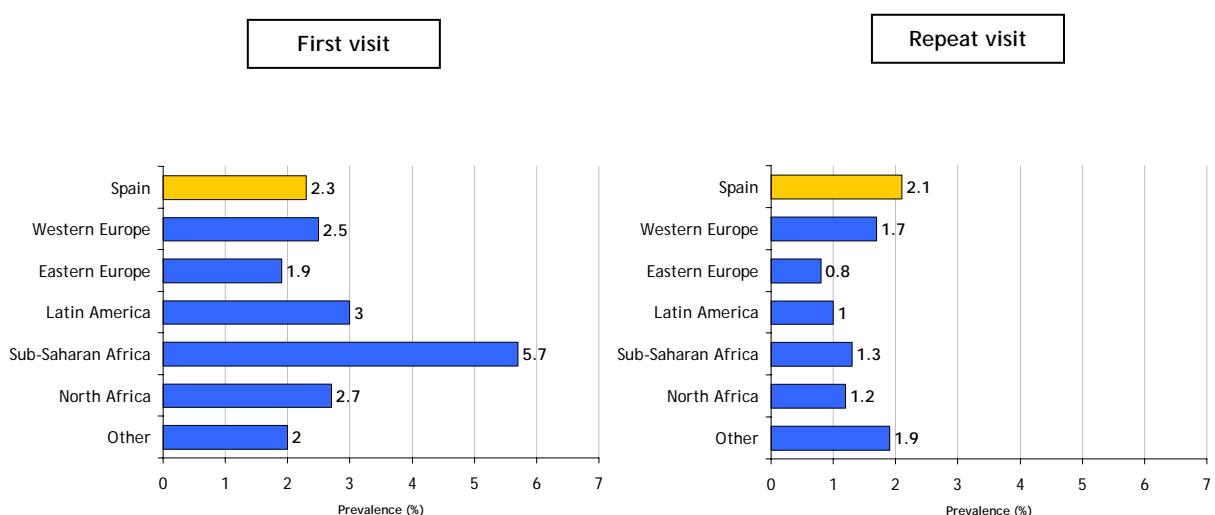


Table 6. HIV prevalence (%) by year of test. First visits.

Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	TOTAL
	%	%	%	%	%	%	%	%	%	%
Sex										
Man	4.6	3.6	3.5	3.5	3.3	4.1	3.5	3.3	3.9	3.7
Woman	1.6	1.6	1.0	1.3	1.3	1.0	0.9	0.9	1.0	1.1
Transgender female	0.0	23.5	32.3	21.4	22.9	28.9	24.5	27.9	27.5	25.7
Age group (years)										
<15	0.0	0.0	0.0	3.4	5.6	0.0	0.0	3.1	0.0	1.4
15-19	0.8	0.9	0.8	0.9	1.4	0.6	0.6	1.6	1.7	1.1
20-24	1.8	1.6	1.3	1.5	1.6	2.0	1.3	1.5	2.2	1.6
25-29	2.6	1.6	2.2	2.5	1.9	2.0	2.5	2.6	2.8	2.3
30-34	4.5	3.7	3.6	3.1	2.7	4.1	2.3	2.5	2.9	3.2
35-39	6.2	5.0	3.6	5.0	4.2	4.0	4.1	2.8	2.7	4.0
40-44	3.8	4.8	3.9	2.9	4.4	4.3	4.0	3.2	3.7	3.9
45-49	2.9	2.3	1.6	2.7	2.9	3.1	3.2	2.6	4.9	3.1
>=50	4.3	4.1	1.7	1.0	2.2	2.6	2.0	2.5	3.5	2.6
Transmission route (mutually exclusive)										
IDU or ex-IDU	19.2	19.0	14.8	14.1	15.8	17.0	19.8	15.7	19.5	17.3
MSM	7.4	6.8	7.1	7.1	7.2	9.1	7.6	7.7	9.4	7.8
Female sex workers	0.7	0.9	1.0	1.1	1.1	1.4	0.7	0.6	0.9	0.9
MSM sex workers	14.3	16.9	17.1	21.0	10.2	16.7	23.9	18.7	24.1	18.5
Heterosexual men	1.0	0.9	1.2	0.9	0.8	1.1	0.8	0.6	0.7	0.9
Heterosexual women	1.5	1.2	0.8	1.2	1.1	0.6	0.7	0.9	0.8	1.0
Unknown	0.5	1.0	0.7	1.6	1.2	0.8	0.7	0.6	1.7	0.9
Region of birth										
Spain	3.3	2.8	2.1	2.3	2.2	2.3	1.9	2.0	2.4	2.3
Other:	2.0	2.6	2.8	2.9	2.8	3.6	3.2	3.0	3.5	3.0
Western Europe	3.6	3.8	1.7	3.0	2.5	3.2	2.1	1.3	2.1	2.5
Eastern Europe	1.6	1.6	3.4	1.7	1.1	1.9	2.1	1.7	2.6	1.9
Latin America	1.6	2.2	2.4	2.4	2.7	3.7	3.7	3.4	4.2	3.0
Sub-Saharan Africa	6.7	5.8	6.1	7.3	7.1	7.4	3.1	5.2	4.0	5.7
North Africa	1.0	2.4	3.7	4.4	2.7	3.1	3.2	1.9	0.9	2.7
Other	1.3	1.6	1.3	2.5	1.9	2.1	3.5	2.1	1.3	2.0
TOTAL	3.2	2.6	2.4	2.5	2.4	2.8	2.4	2.3	2.8	2.6

Table 7. HIV prevalence (%) by year of test. Repeat visits.

Variables	2000	2001	2002	2003	2004	2005	2006	2007	2008	TOTAL
	%	%	%	%	%	%	%	%	%	%
Sex										
Man	2.6	2.5	2.3	2.5	2.4	2.5	2.6	3.4	3.8	2.8
Woman	0.7	0.7	0.5	0.5	0.3	0.3	0.5	0.4	0.5	0.5
Transgender female	7.1	4.5	0.0	0.0	4.8	5.5	0.0	2.8	0.0	2.4
Age group (years)										
<15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-19	0.0	1.0	0.9	0.0	1.7	1.1	0.9	0.0	1.6	0.8
20-24	0.2	0.5	0.9	0.8	0.7	0.8	1.0	1.4	2.6	1.0
25-29	2.4	1.5	1.5	1.5	1.2	1.2	1.7	2.3	2.0	1.7
30-34	1.8	2.2	1.5	1.7	1.6	2.1	1.7	1.9	2.1	1.8
35-39	2.3	2.2	1.7	1.9	2.0	1.6	2.2	2.8	3.2	2.2
40-44	1.3	1.4	1.7	2.2	1.5	2.0	2.1	1.8	2.1	1.8
45-49	0.9	1.1	1.0	1.6	1.4	0.7	1.6	1.9	2.5	1.5
>=50	4.5	2.0	1.4	0.9	0.8	0.7	0.2	1.0	2.4	1.4
Transmission route (mutually exclusive)										
IDU or ex-IDU	6.5	8.2	5.6	7.4	6.2	5.4	6.4	6.6	7.5	6.6
MSM	2.9	2.7	2.6	3.2	3.1	3.7	3.8	5.0	5.6	3.8
Women sex workers	0.1	0.3	0.3	0.2	0.1	0.3	0.3	0.2	0.3	0.2
MSM sex workers	4.8	1.8	5.3	4.8	1.9	4.4	5.5	5.5	2.7	4.2
Heterosexual men	0.9	0.7	0.6	0.6	0.5	0.3	0.3	0.6	0.6	0.5
Heterosexual women	0.4	0.6	0.3	0.7	0.4	0.1	0.8	0.6	0.6	0.5
Unknown	1.8	0.6	2.3	0.3	1.9	0.2	0.0	0.6	1.6	1.0
Region of birth										
Spain	1.8	2.1	1.7	2.0	1.7	2.0	2.0	2.4	3.0	2.1
Other:	0.9	0.5	0.9	0.8	0.8	0.8	1.2	1.5	1.4	1.0
Western Europe	0.0	0.9	2.4	0.7	2.2	1.4	2.6	3.5	0.0	1.7
Eastern Europe	2.3	0.0	1.3	0.5	0.7	0.9	0.6	0.3	1.3	0.8
Latin America	0.8	0.4	0.6	0.6	0.7	0.8	1.2	1.6	1.3	1.0
Sub-Saharan Africa	0.0	1.0	3.4	1.9	1.2	0.4	0.9	0.4	2.2	1.3
North Africa	2.9	0.0	0.0	0.0	0.0	1.3	2.0	2.6	1.4	1.2
Other	0.0	0.0	0.0	3.8	2.1	0.0	0.0	2.6	8.8	1.9
TOTAL	1.8	1.6	1.4	1.5	1.4	1.5	1.7	2.0	2.4	1.7

CONCLUSIONS

- ☒ The number of HIV tests performed clearly increased throughout the period, both in first and repeat visits.
- ☒ Most HIV tests in first visits were performed in heterosexual people, whereas in repeat visits the main groups were female sex workers and MSM.
- ☒ The number of test performed in MSM and heterosexuals increased, in both first and repeat visits, and in female sex workers only in repeat visits. Among IDU, the number of test performed decreased in both first and repeat visits.
- ☒ Over one-third of those tested, in both first and repeat visits, were from other countries. The most frequent region of birth was Latin America.
- ☒ The absolute number of new HIV diagnoses in first visits decreased between 2000 and 2002, increasing thereafter. In repeat visits the increase was seen after 2005
- ☒ Among new HIV diagnoses, MSM were the largest group throughout the period, comprising 61.9% of all diagnoses in first visits in 2008 and 76.5% in repeat visits.
- ☒ HIV prevalence in first visits was higher than in repeat visits. In first visits the prevalence ranged between 3.2% and 2.8%, with no significant trend during the period. In repeat visits an increase was seen starting in 2005.
- ☒ In first visits, the highest HIV prevalence was detected in MSM sex workers, followed by IDUs and MSM. In repeat visits, the highest HIV prevalence was detected in IDUs. A downward trend was seen in the prevalence in heterosexual men and women in first visits and an upward trend in MSM in repeat visits. No significant changes were observed in the remaining groups, regardless of the type of visit.
- ☒ HIV prevalence was higher in natives of Sub-Saharan Africa and Latin America than in Spaniards in first visits, whereas in repeat visits the prevalence was significantly higher in Spaniards than in migrants.
- ☒ The results obtained in this study reflect the epidemiological situation of persons who attend HIV/STI diagnostic centres; thus, they can not be considered representative of the situation in other segments of the population.

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