

III Encuentro VIH/SIDA:

hacia el tratamiento como prevención en pacientes VIH

The PISCIS Cohort contribution to the Epidemiological Surveillance of HIV and the HIV Treatment Cascade in Catalonia

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Aula Magna Gustavo Pittaluga, Escuela Nacional de Sanidad
Instituto de Salud Carlos III, Madrid



Generalitat de Catalunya
Departament de Salut

**Colin Campbell, Anna Esteve, Jordi Casabona and PISCIS
Study Group**

CEEISCAT, ASPCAT

aesteve@iconcologia.net



Generalitat de Catalunya
**Agència de Salut Pública
de Catalunya**



Centre d'Estudis Epidemiològics
sobre les Infeccions de Transmissió
Sexual i Sida de Catalunya

Outline

- Descripción de la Cohorte PISCIS

- Contribuciones de la Cohorte PISCIS
 - Vigilancia epidemiológica del VIH en Cataluña
 - Cálculo de indicadores de progreso
 - Cascada de servicios en Cataluña
 - Investigación clínica y guías de tratamiento

- Conclusiones y retos

PISCIS Cohort 1998-2011

Description

Open multicentric observational cohort study

Inclusion criteria:

- patients VIH +
- aged ≥ 16 years
- newly seen in the participating centers

14 Spanish Hospitals:

- 12 hospitals in Catalonia,
- 2 hospitals in the Balearic Islands

PISCIS Cohort Study

Description

- Starting date: January 1998
- Records of demographic, clinical, laboratory and treatment
- Quality was assessed by means of quality-control reports for each center
- Periodic record linkage with Mortality Registries
- Coordinating Center: Centre d'Estudis Epidemiològics sobre les ITS i Sida de Catalunya (CEEISCAT)

PISCIS Cohort Study

Description

- Dataset updated until Dec2011:
 - N=14,675 HIV infected patients
 - 73.726 person-years of follow-up

- Participating in international and national collaborations:
 - COHERE-EUROCOORD, HIV-CAUSAL, ART-CC
 - coRIS

PISCIS Cohort Study

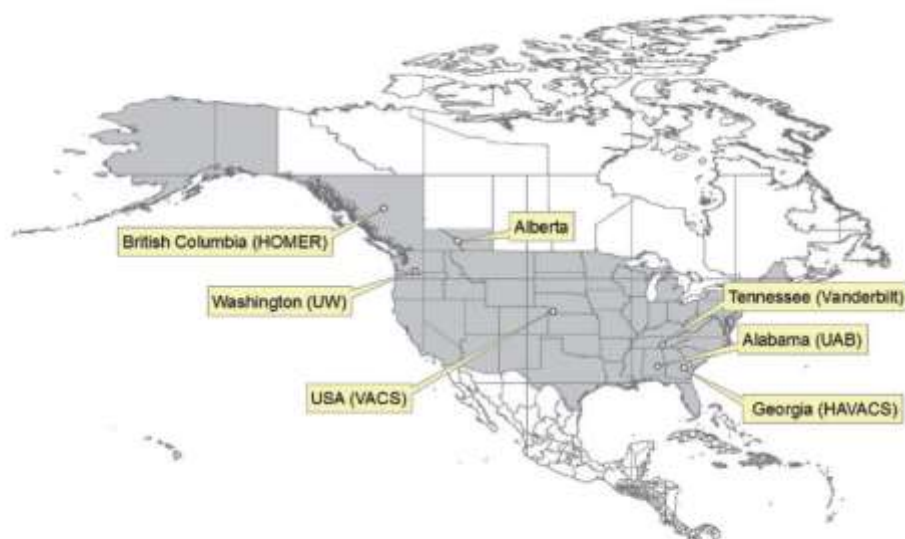


Figure 1 Map of North American cohorts in the Antiretroviral Therapy Cohort Collaboration

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International Journal of Epidemiology, 2013, 42, doi:10.1093/ije/dyt019

COHORT PROFILE

Cohort profile: Antiretroviral Therapy Cohort Collaboration (ART-CC)



Figure 2 Map of European cohorts in the Antiretroviral Therapy Cohort Collaboration
EuroSIDA covers 31 European countries plus Israel and Argentina; the Infección por HIV y SIDA (PISCIS) Cohort includes two regions: Catalonia and the Balearic Islands

PISCIS Cohort 1998-2011

Patient characteristics

	Total Cohort PISCIS n(%)	Nous Diagnòstics n(%)
TOTAL	14549 (100,0%)	7694 (100,0%)
Sexe(homes)	11265 (77,4%)	6107 (79,4%)
Edat al ingrés		
<24	731 (5,1%)	519 (6,9%)
25-45	10929 (76,5%)	5473 (73,0%)
45-49	1014 (7,1%)	481 (6,4%)
>=50	1604 (11,2%)	1026 (13,7%)
N missings	271	195
Grup de Transmissió		
UDVP	4240 (29,2%)	1023 (13,3%)
Homosexual/bisexual	4968 (34,2%)	3383 (44,0%)
Home heterosexual	2053 (14,1%)	1479 (19,2%)
Dona heterosexual	1962 (13,5%)	1223 (15,9%)
Altres	1313 (9,0%)	581 (7,6%)
N missings	13	5

PISCIS Cohort 1998-2011

Patient characteristics

	Total Cohort PISCIS n(%)	Nous Diagnòstics n(%)
TOTAL	14549 (100,0%)	7694 (100,0%)
Naïf al ingrés	9476 (65,1%)	
CD4+ basal		
cd4<200	3723 (32,3%)	2183 (33,7%)
200<=cd4<350	2501 (21,7%)	1315 (20,3%)
cd4>=350	5316 (46,1%)	2985 (46,0%)
CD4+ basal (mediana)	367,07[149,0;523,5]	360,82[132,0;526,0]
Diagnòstic de SIDA al ingrés	2883 (19,8%)	1329 (17,3%)
Diagnòstic de SIDA durant seguiment	938 (6,4%)	497 (6,5%)
Estatus		
En seguiment	9189 (63,2%)	5532 (71,9%)
Exitus	1253 (8,6%)	504 (6,6%)
Persones-any de seguiment	72378.6	39106.1

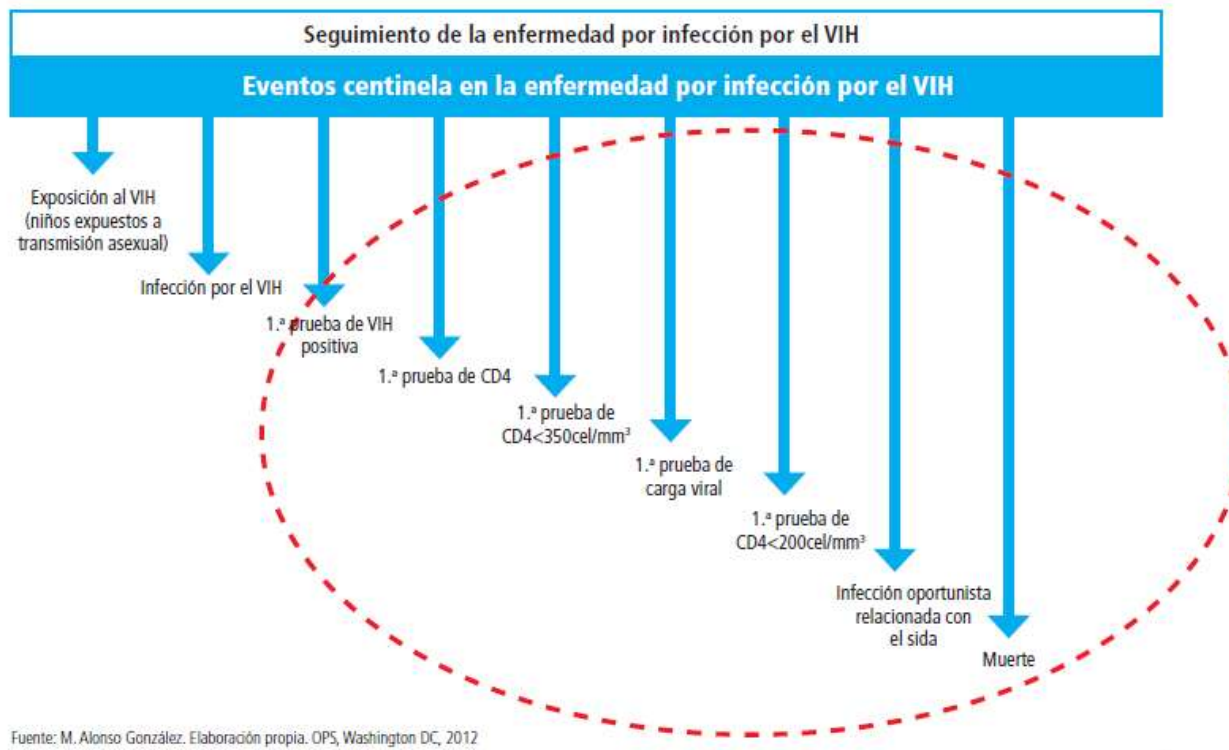


PISCIS Cohort complements HIV Surveillance

- Key feature is individual longitudinal surveillance
- Basic source of information for the Integrated Epidemiological Surveillance of HIV and STIs in Catalonia (SIVES)
- Describes the socio-demographic, epidemiological, clinical and biological characteristics of the new HIV diagnoses
- Monitors the long-term clinical outcome of patients with HIV infection
- Assesses the impact of antiretroviral therapy on the progression of the infection
- Provides core indicators for monitoring HIV/AIDS epidemic

Reportable events captured by a comprehensive longitudinal surveillance system of HIV

Figura 7 Eventos notificables captados mediante un sistema integral de vigilancia de la infección por el VIH



Source: Organización Panamericana de la Salud. Vigilancia de la infección por el VIH basada en la notificación de casos: recomendaciones para mejorar y fortalecer los sistemas de vigilancia del VIH. Washington, D.C.: OPS; 2012.

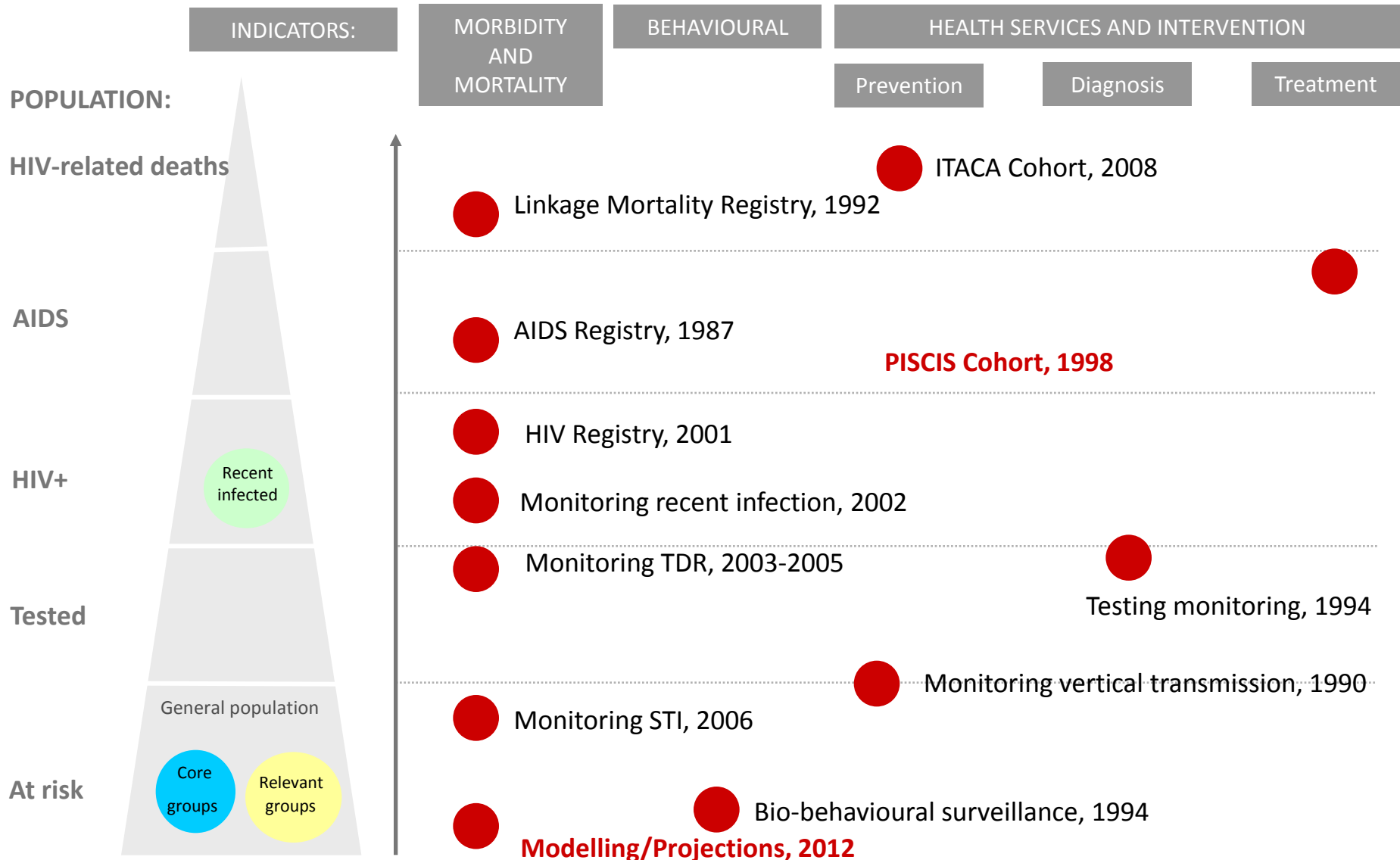
Health indicators derived from the PISCIS Cohort

Mortality indicators	Population	Estimated value	
Mortality rate in patients AIDS diagnosed (per 1000 person-years)	Global	27.3	
	Gender	Men	28.5
		Women	23.1
	Risk group	IDU	34.0
		Heterosexual	17.9
		Heterosexual men	29.2
		Heterosexual women	14.2
		Others	36.5
Percentage of AIDS cases who live more than 18 months	Global	90.0	
Percentage of AIDS cases who live more than 10 years	Global	25.0	

Health indicators derived from the PISCIS Cohort

Treatment indicators	Population	Estimated value
	Global	92.6
Percentage of HIV cases who lived more than 5 years after ART start	Late presenters	91.0
	New HIV diagnosis	96.8
Life expectancy in patients who start ART (in years)	A los 20 años	40.5
	A los 35 años	30.0
Potential years of life lost before age 65 years due to HIV infection in patients who initiate ART (per 1.000 persons-years)	Global	303.8
GARP 4.1 INDICATOR. Percentage of HIV cases on TAR	Global	92.4
GARP 4.2 INDICATOR. Percentage of HIV cases on ART 12 months after ART initiation	Global	89.2
Percentage of cases with undetectable viral load at 6 months after ART initiation	Global	94.9

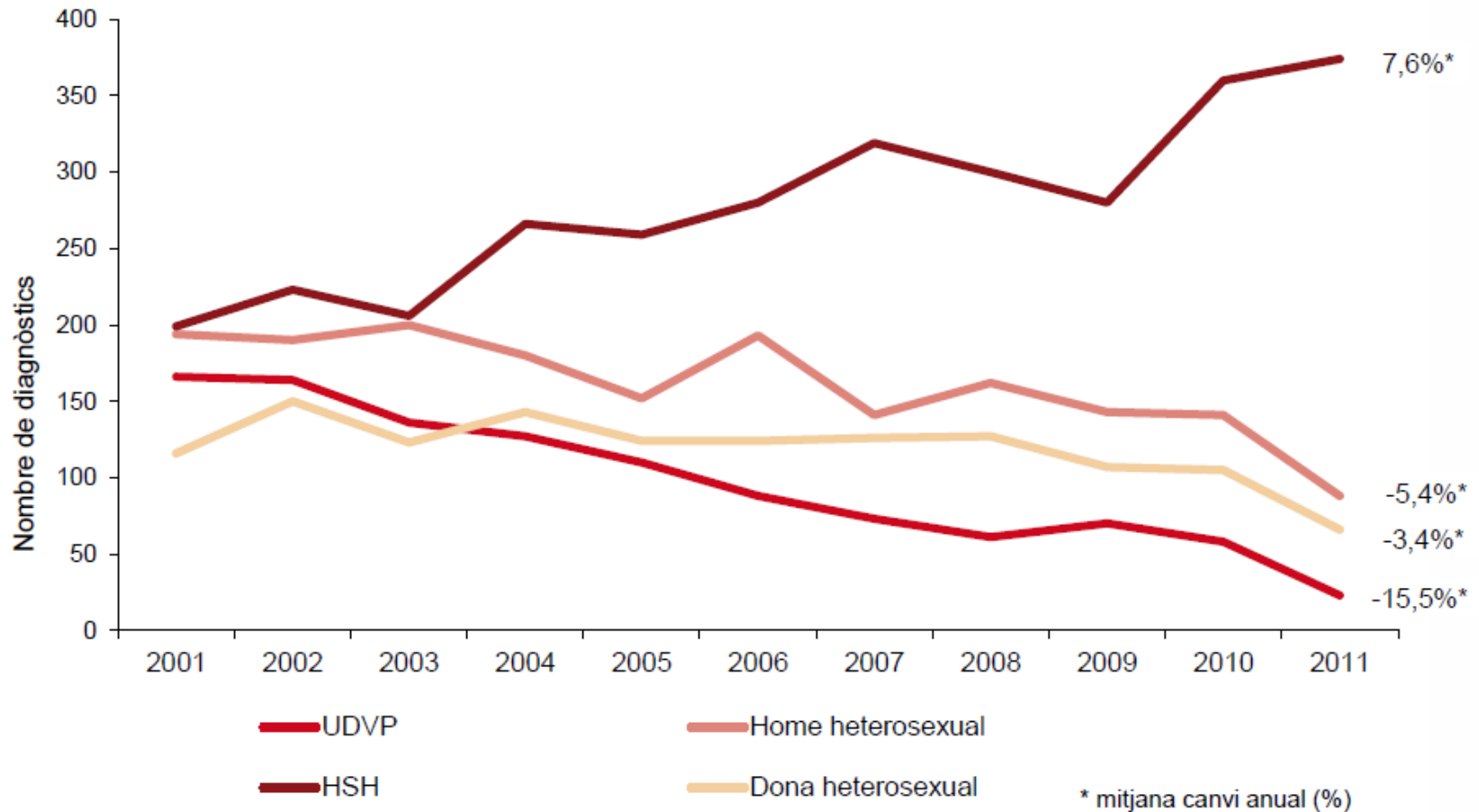
Integrated HIV/AIDS Surveillance, Catalonia 1990-2011



Are observational Cohorts representative?

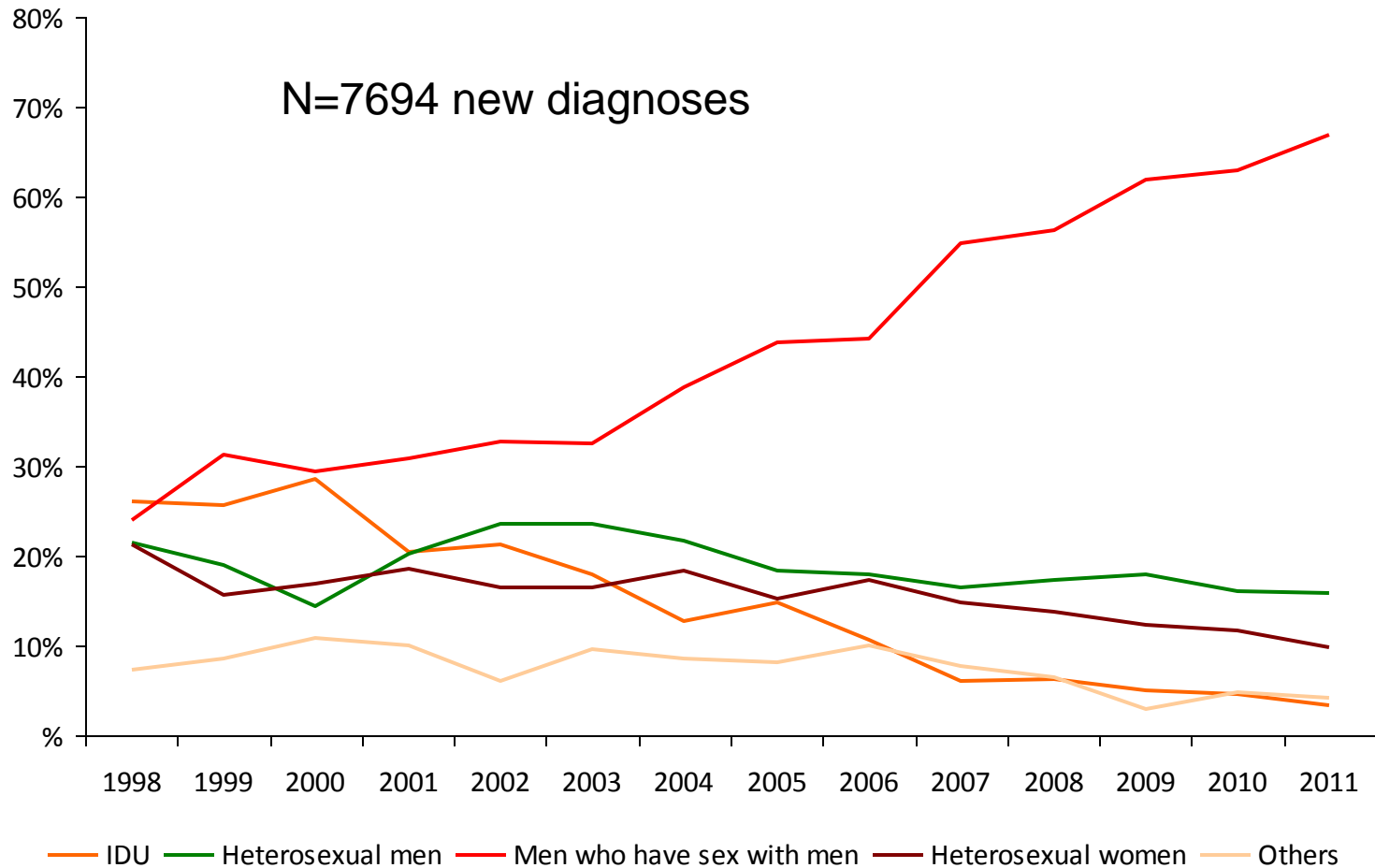
- It is an aspiration of many cohorts!
- PISCIS covers about 70 – 75% of all new diagnosis of HIV in Catalunya, Balears is population-based
- Includes naive and non-naive patients
- May be less representative of those diagnosed before 1998

New diagnosis of HIV, Registre de VIH de Catalunya, 2001-2011.



Source: SIVES 2012

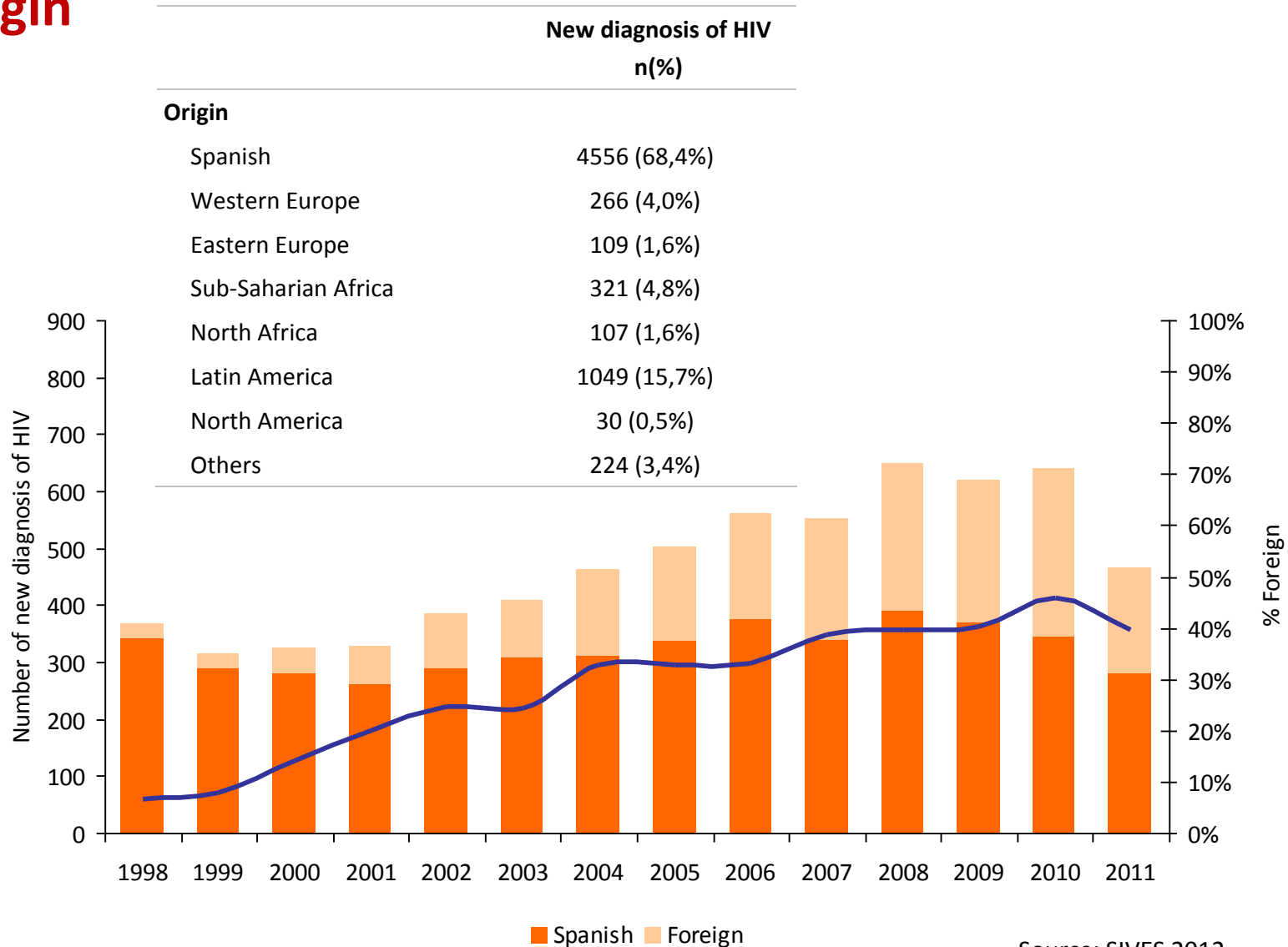
New diagnosis of HIV, PISCIS Cohort, 1998-2011.



Source: SIVES 2012

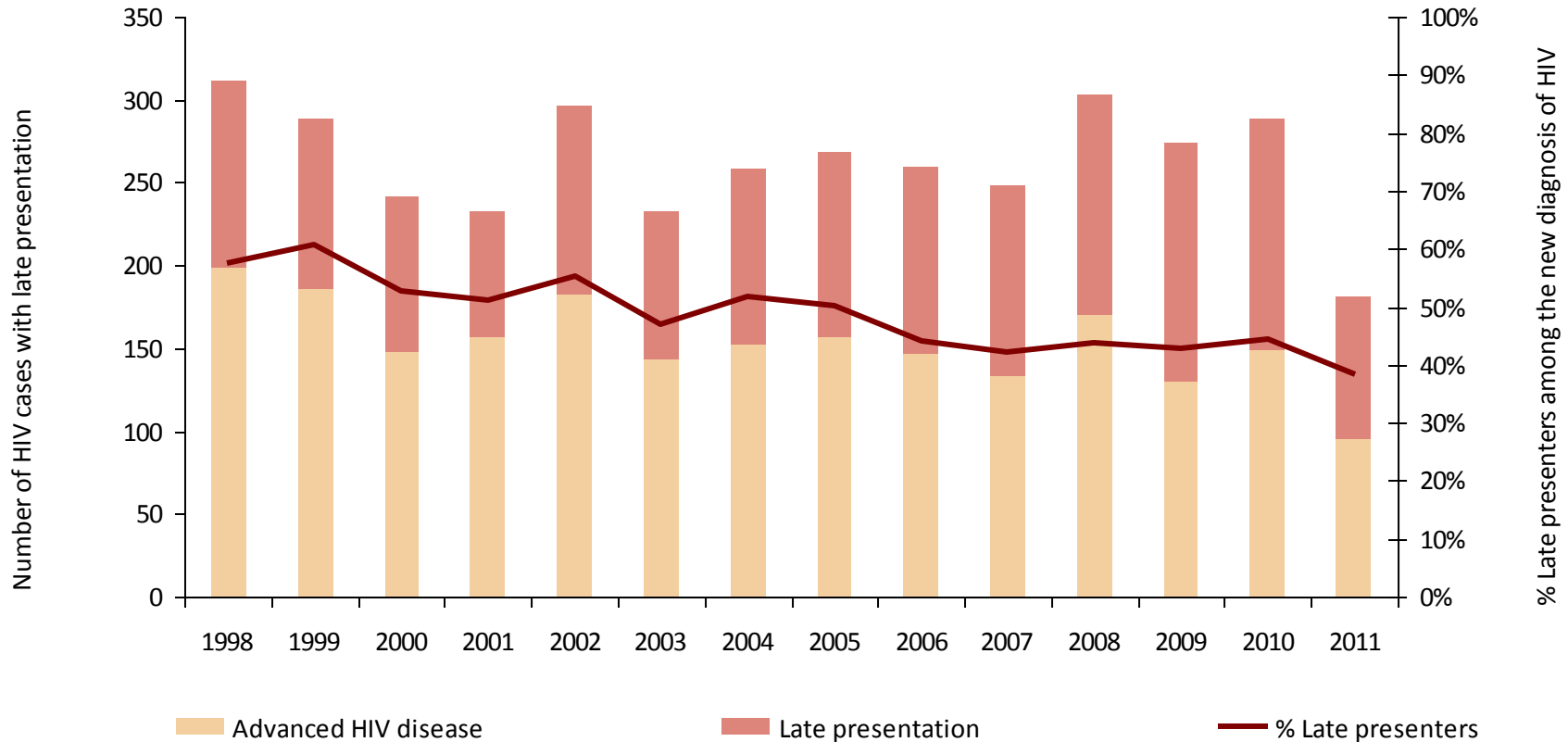
New diagnosis of HIV, PISCIS Cohort 1998-2011

Origin



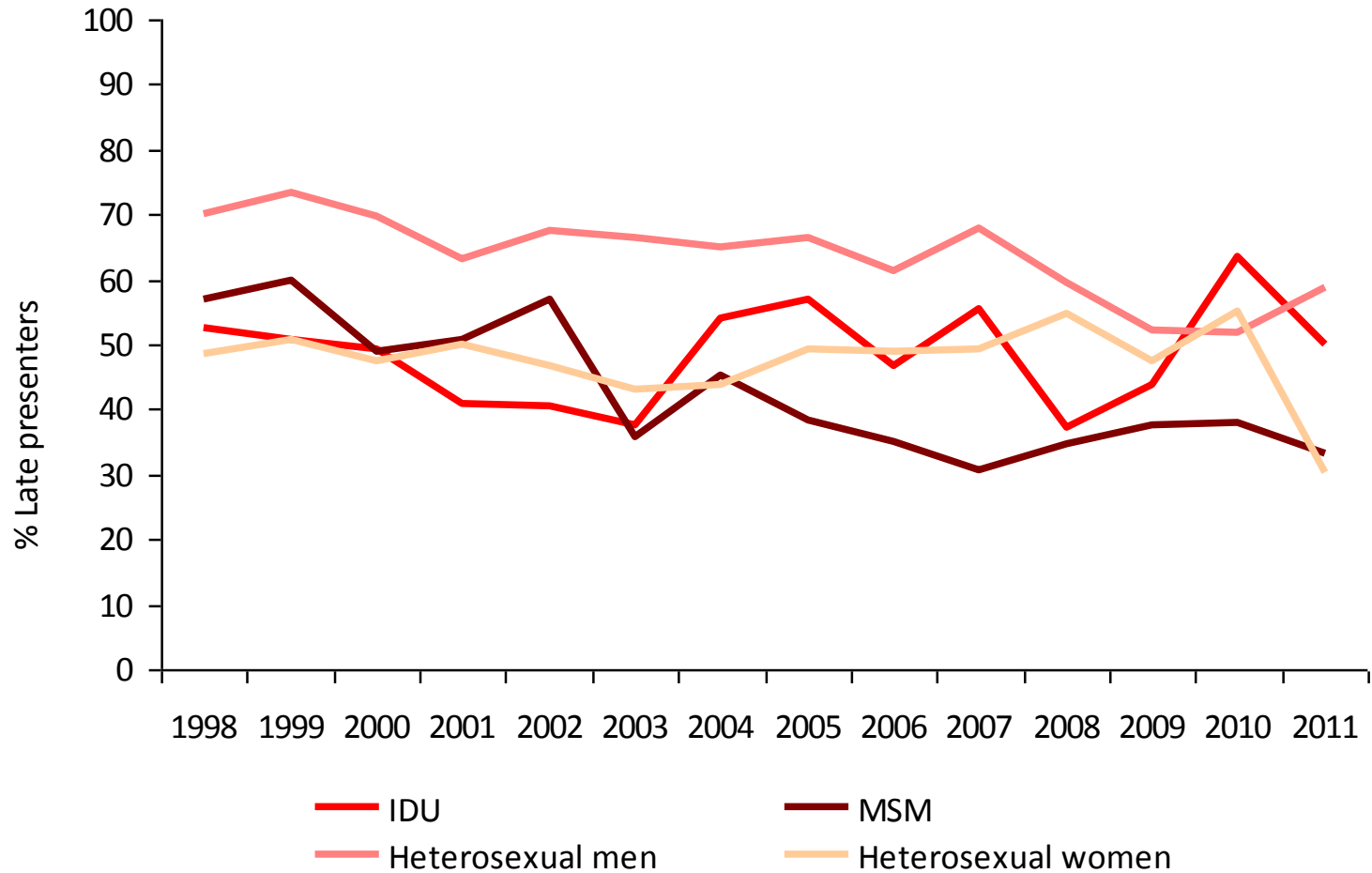
Source: SIVES 2012

Late presenters among new diagnosis of HIV



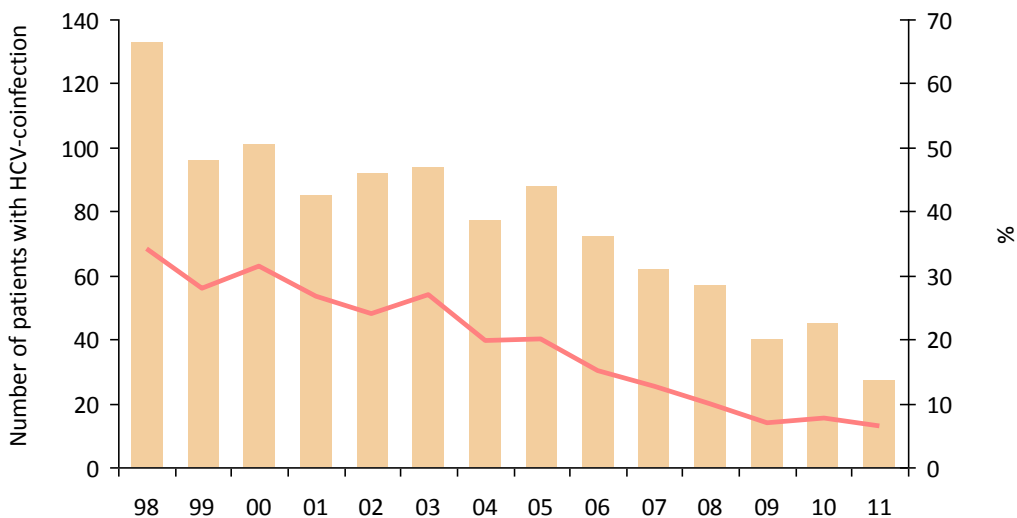
European Late Presenter Consensus Working Group. HIV Med. 2011 Jan;12(1):61-4. Late presentation of HIV infection: a consensus definition.

Late presenters among new diagnosis of HIV



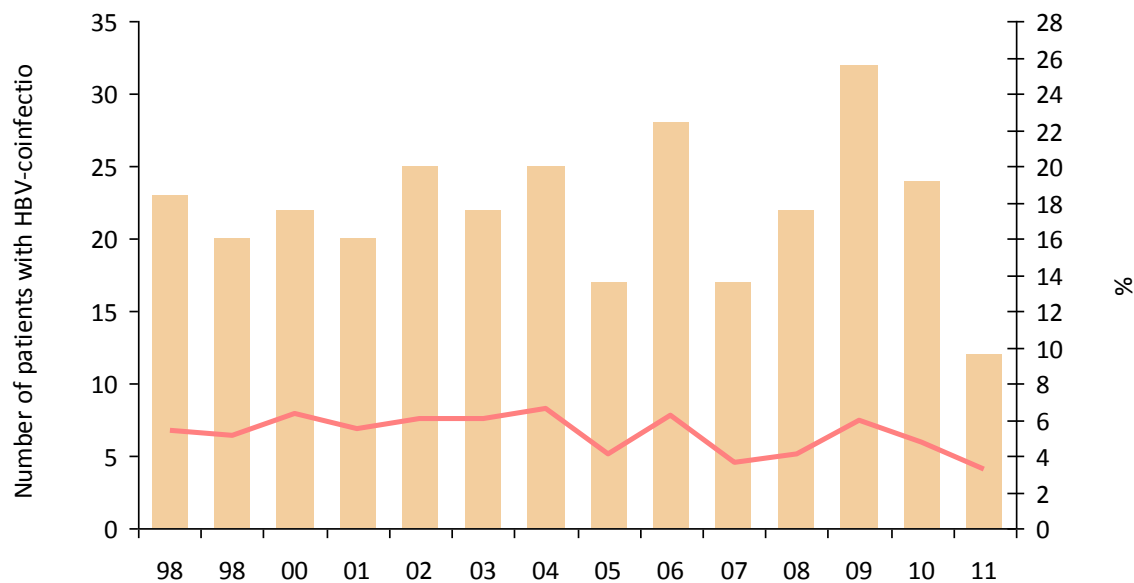
Source: SIVES 2012

HCV and HBV coinfection in new HIV diagnosis

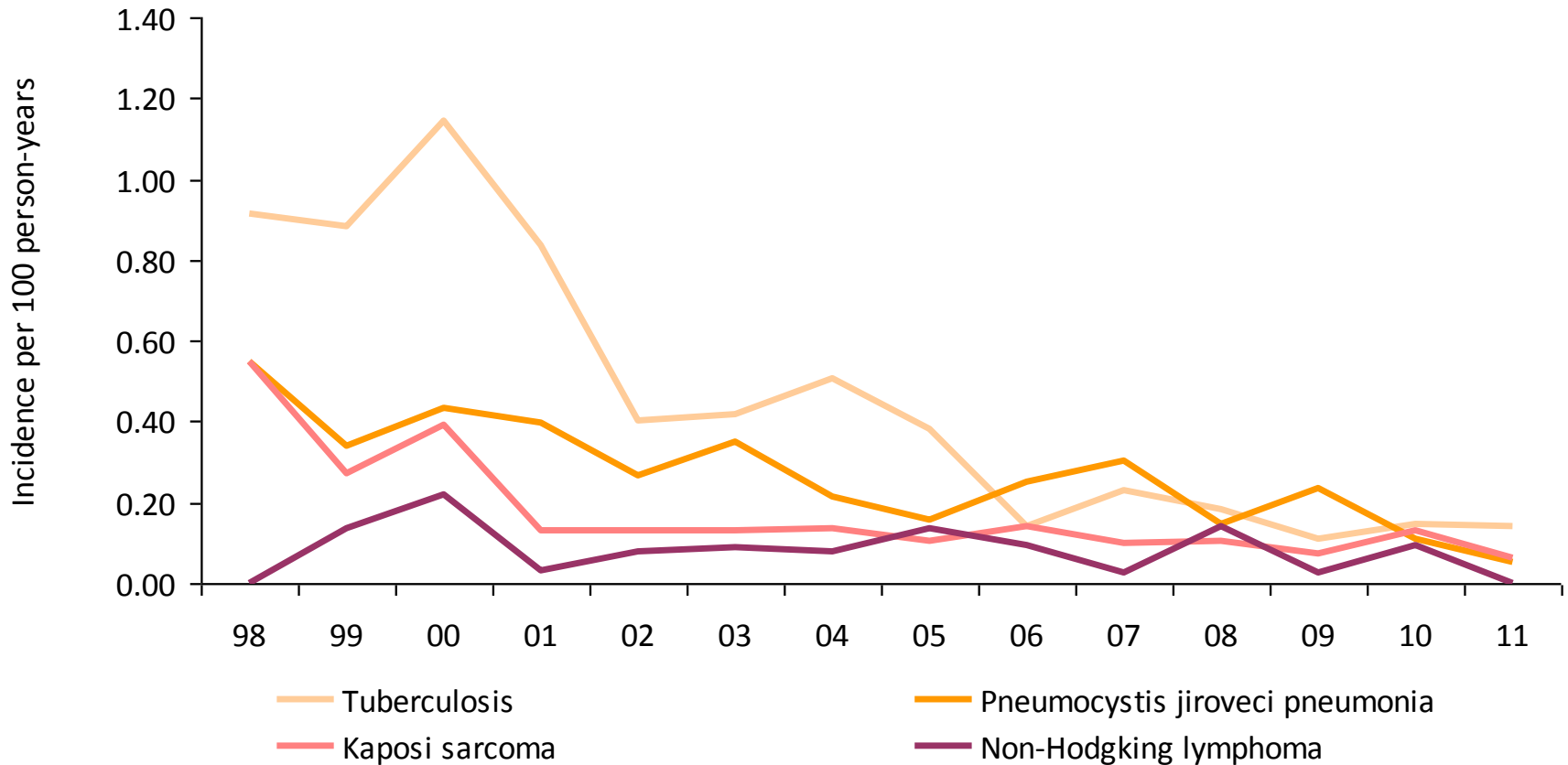


Source: SIVES 2012

Source: SIVES 2012

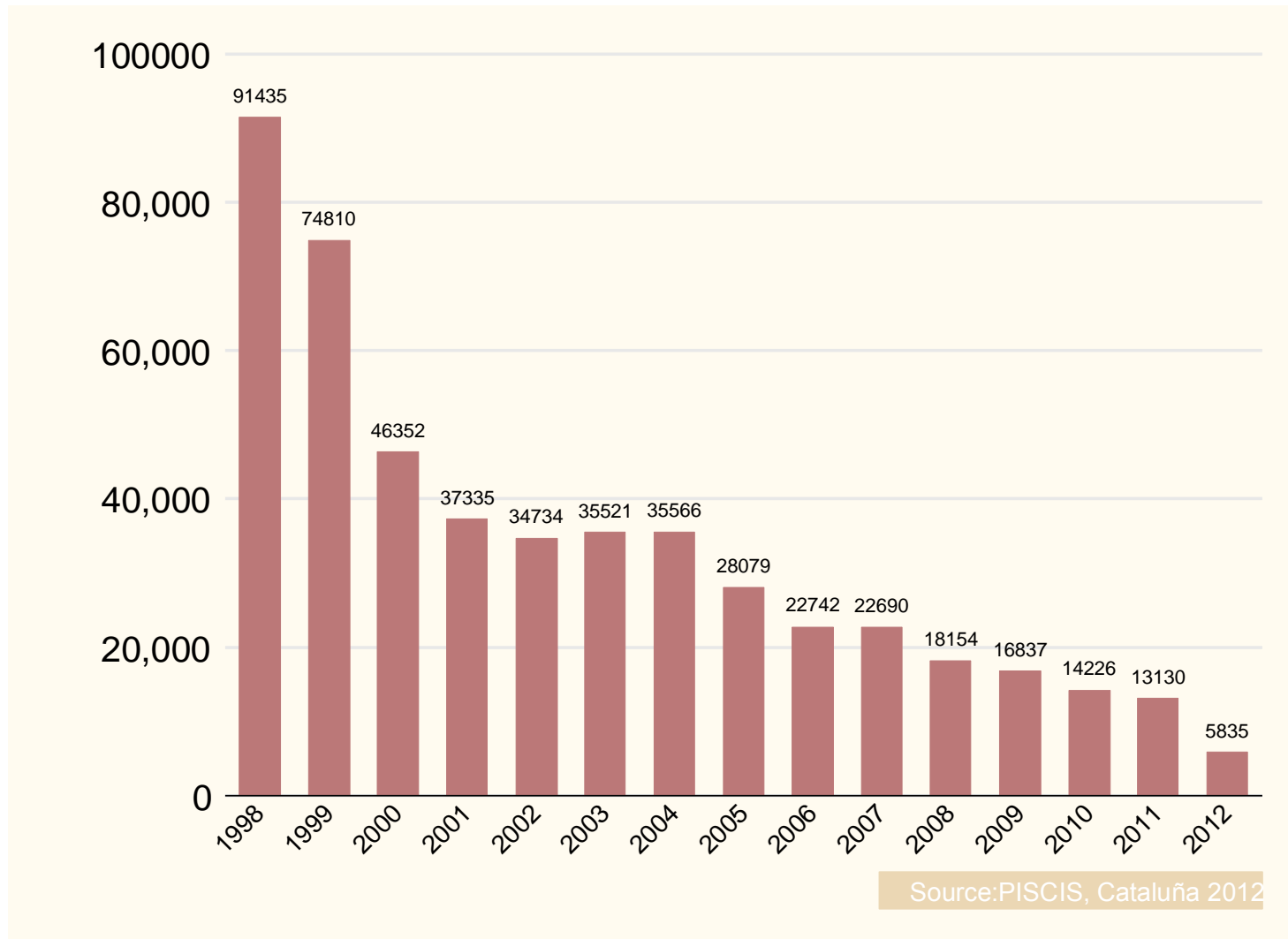


Incidence of opportunistic infections in the PISCIS Cohort

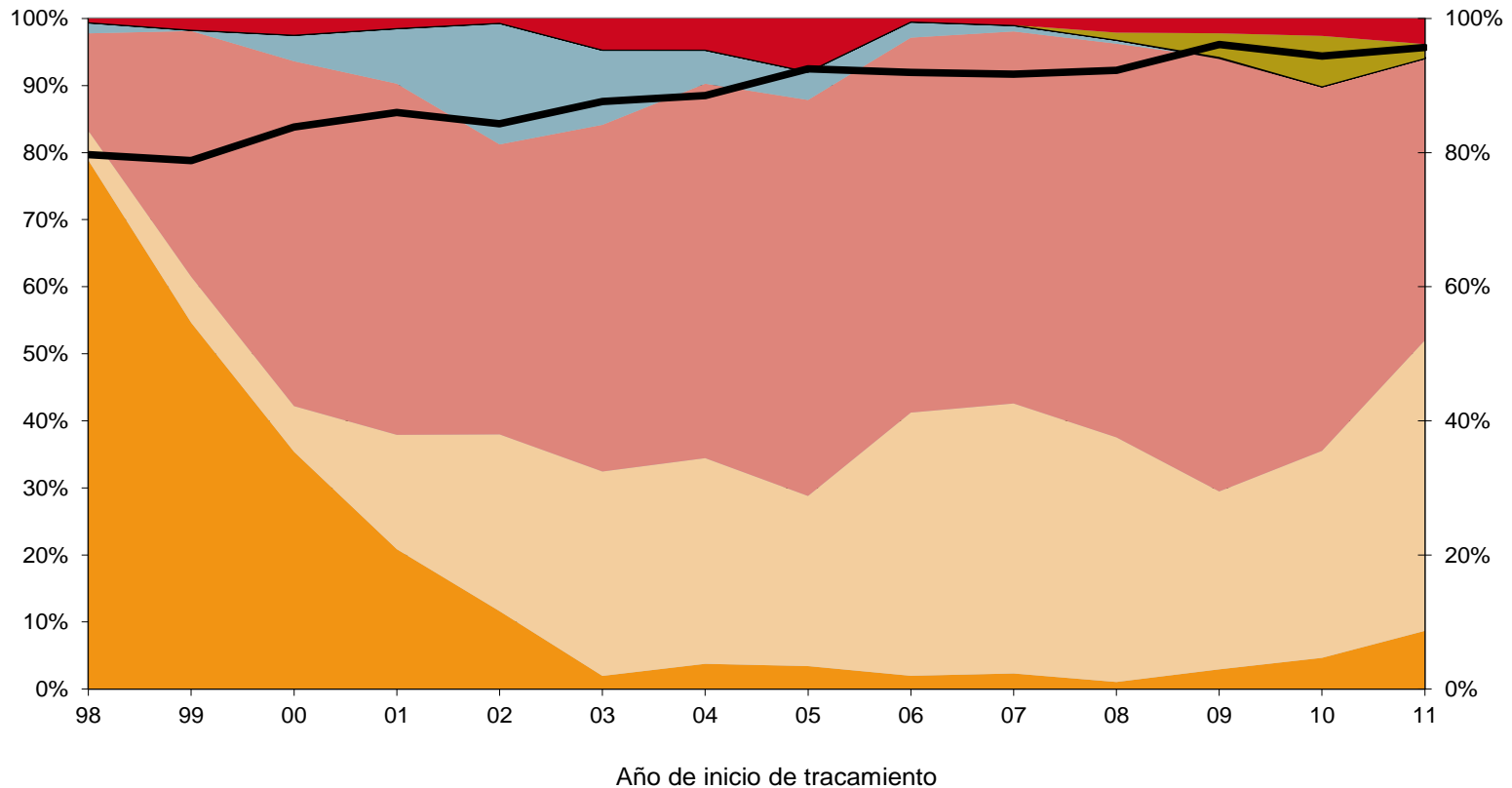


Source: SIVES 2012

Mean Viral load in all patients in the PISCIS Cohort, by year



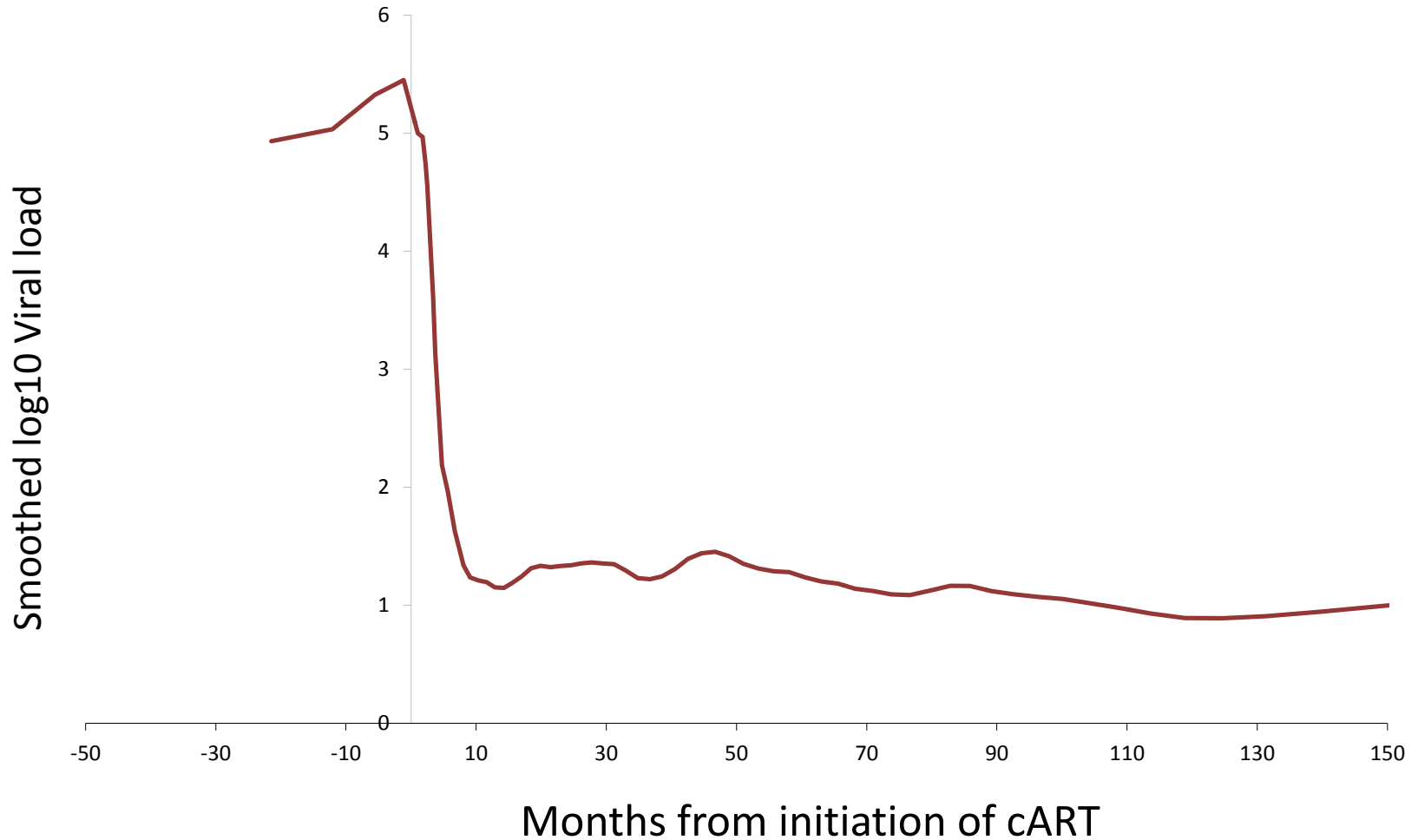
First-line ART regimen in naive patients, PISCIS Cohort



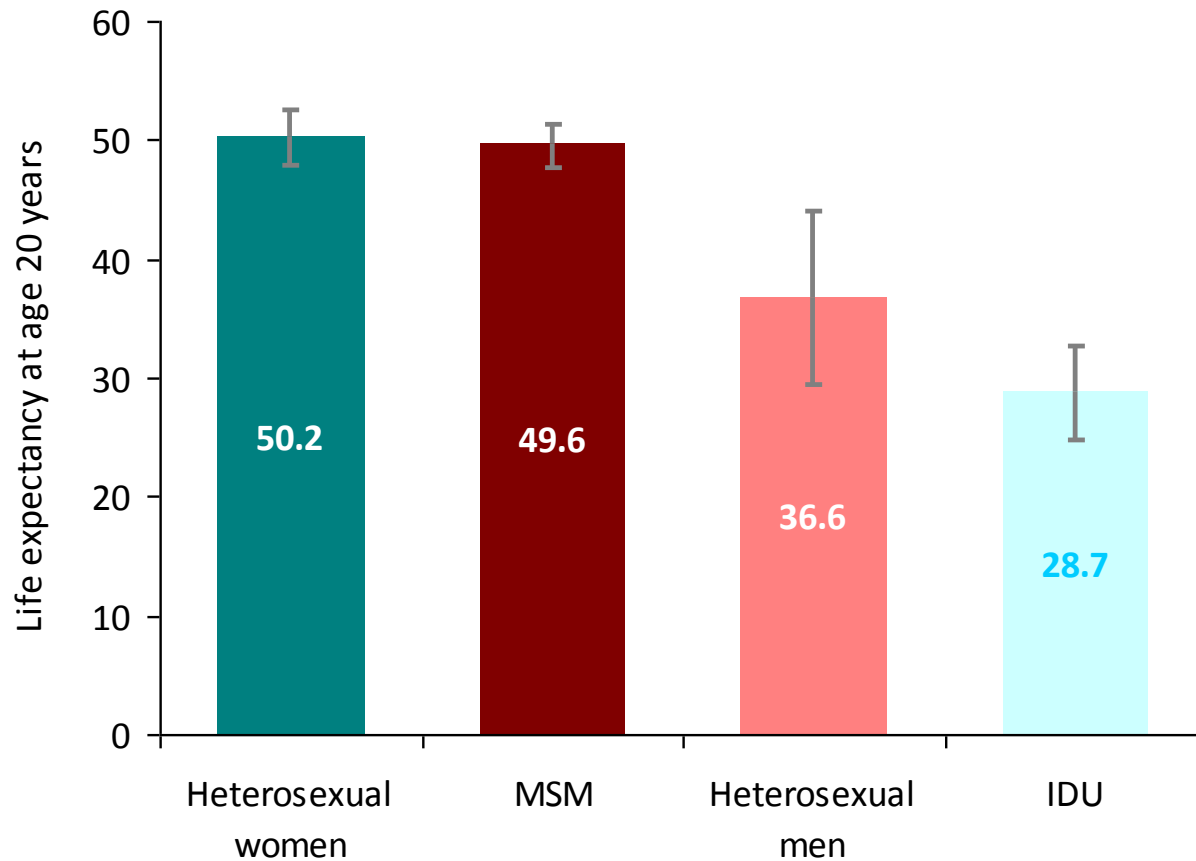
- Basado en inhibidor de la proteasa
- Basado en no nucleósido
- Basado en antagonista de CCR5
- Otros
- Basado en inhibidor de la proteasa potenciado
- Basado en tres análogos de nucleósido
- Basado en inhibidor de la integrasa
- cv indetectable als 6 mesos de l'inici del ttm

Source: SIVES 2012

Mean Log₁₀ Viral load in naive patients starting ART, PISCIS Cohort



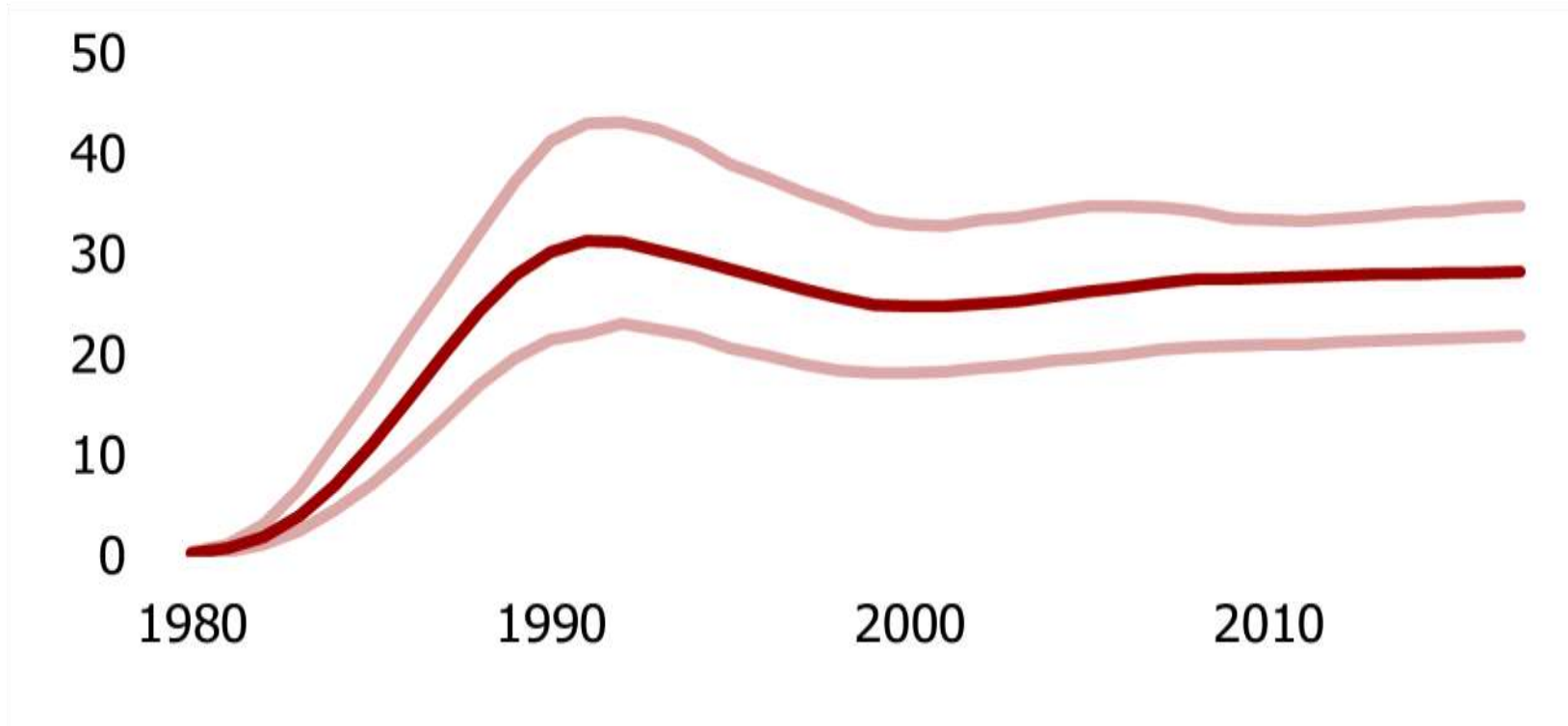
Life expectancy at age 20 years in naive patients, PISCIS Cohort



Source: SIVES 2012

Modelling and projections

Figure 1: Total population (1000's) of PLWH in Catalonia 1980-2017



Fuente: Sives 2012, Spectrum projection package 2011

The HIV Treatment Cascade

- Recently, the Integrated Epidemiological Surveillance of HIV and STIs in Catalonia has reported the HIV Treatment Cascade
- Graphically represents the HIV population at various stages of care
- It has become a tool for public health services to assess access to care, its quality throughout the process and the identification of major gaps
- Comparison with other countries is also possible

Methods

Derivation of each stage of the treatment cascade

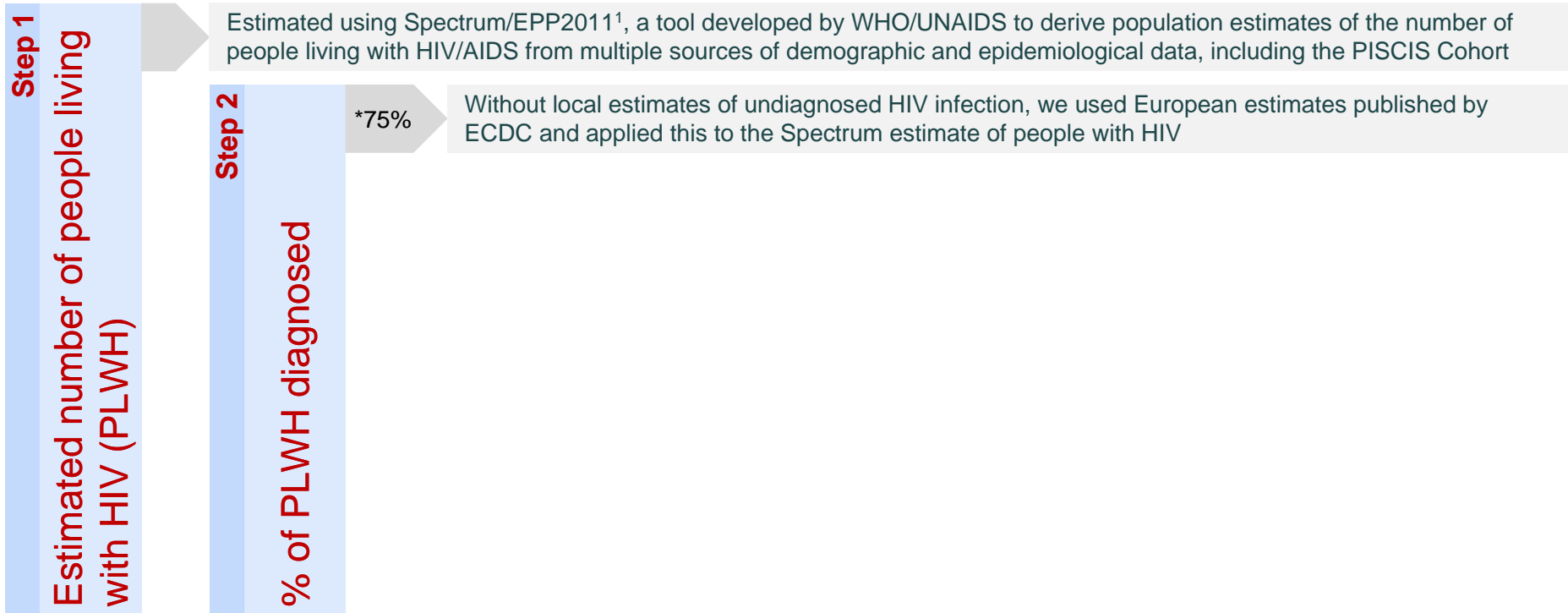
Step 1

Estimated number of people living with HIV (PLWH)

Estimated using Spectrum/EPP2011¹, a tool developed by WHO/UNAIDS to derive population estimates of the number of people living with HIV/AIDS from multiple sources of demographic and epidemiological data, including the PISCIS Cohort

Methods

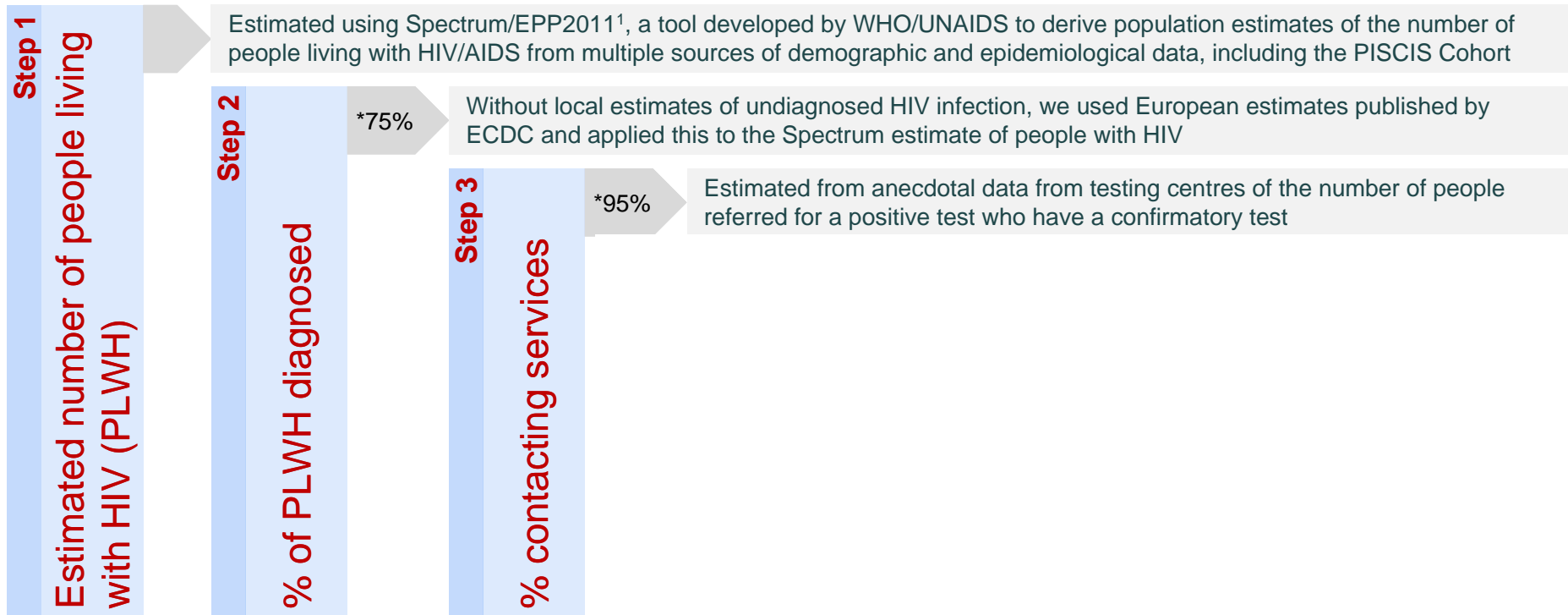
Derivation of each stage of the treatment cascade



* Percentage is applied to the previous columns

Methods

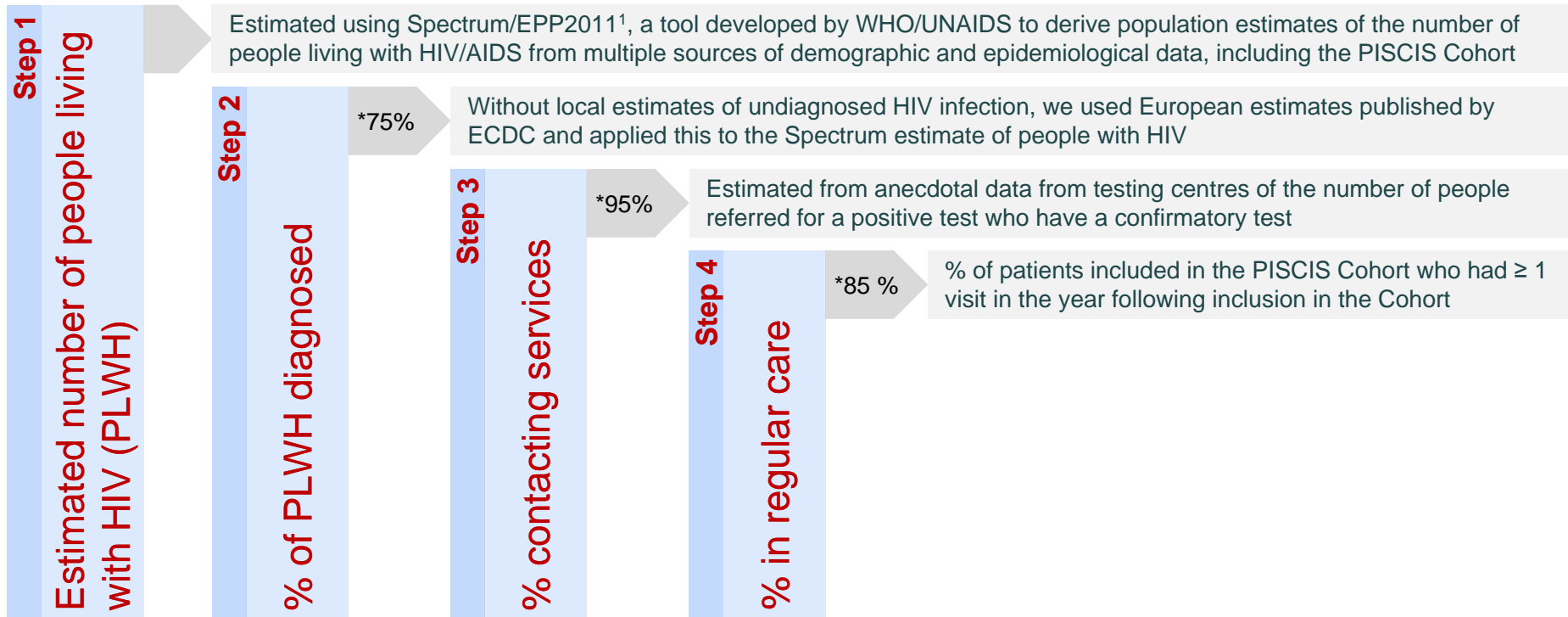
Derivation of each stage of the treatment cascade



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Methods

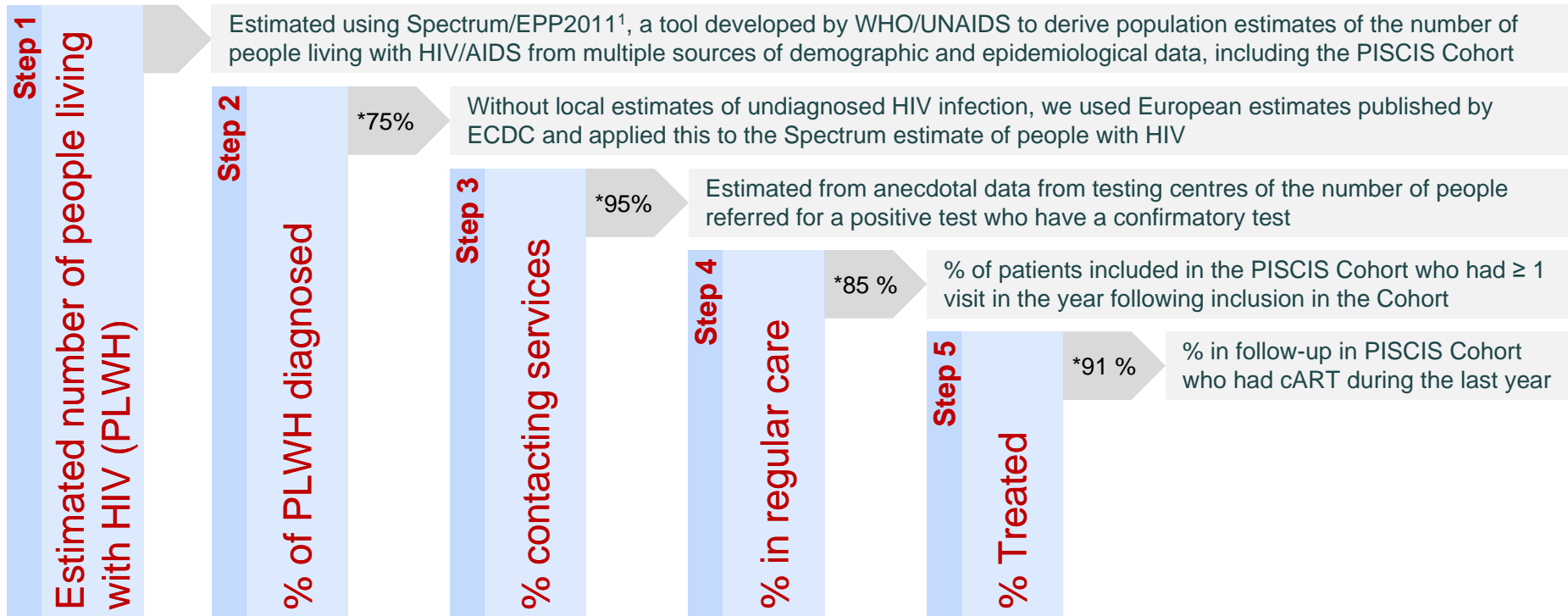
Derivation of each stage of the treatment cascade



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Methods

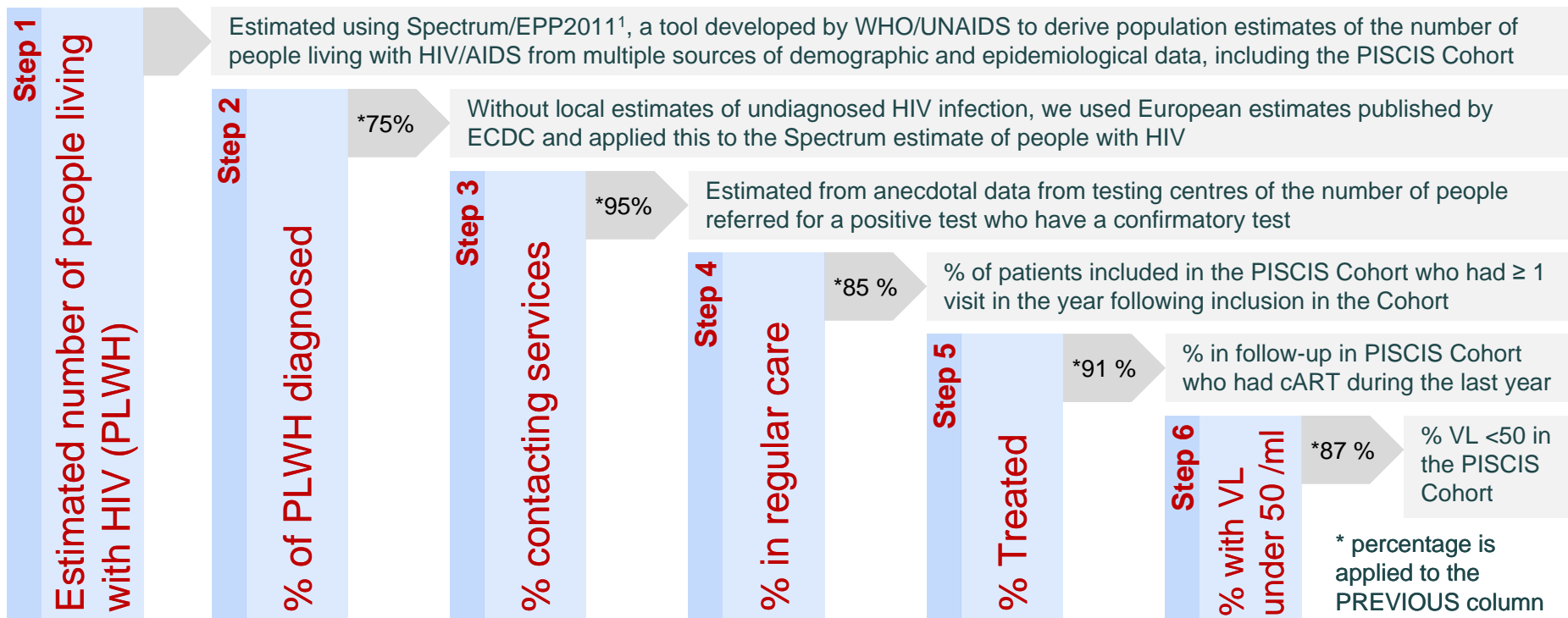
Derivation of each stage of the treatment cascade



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Methods

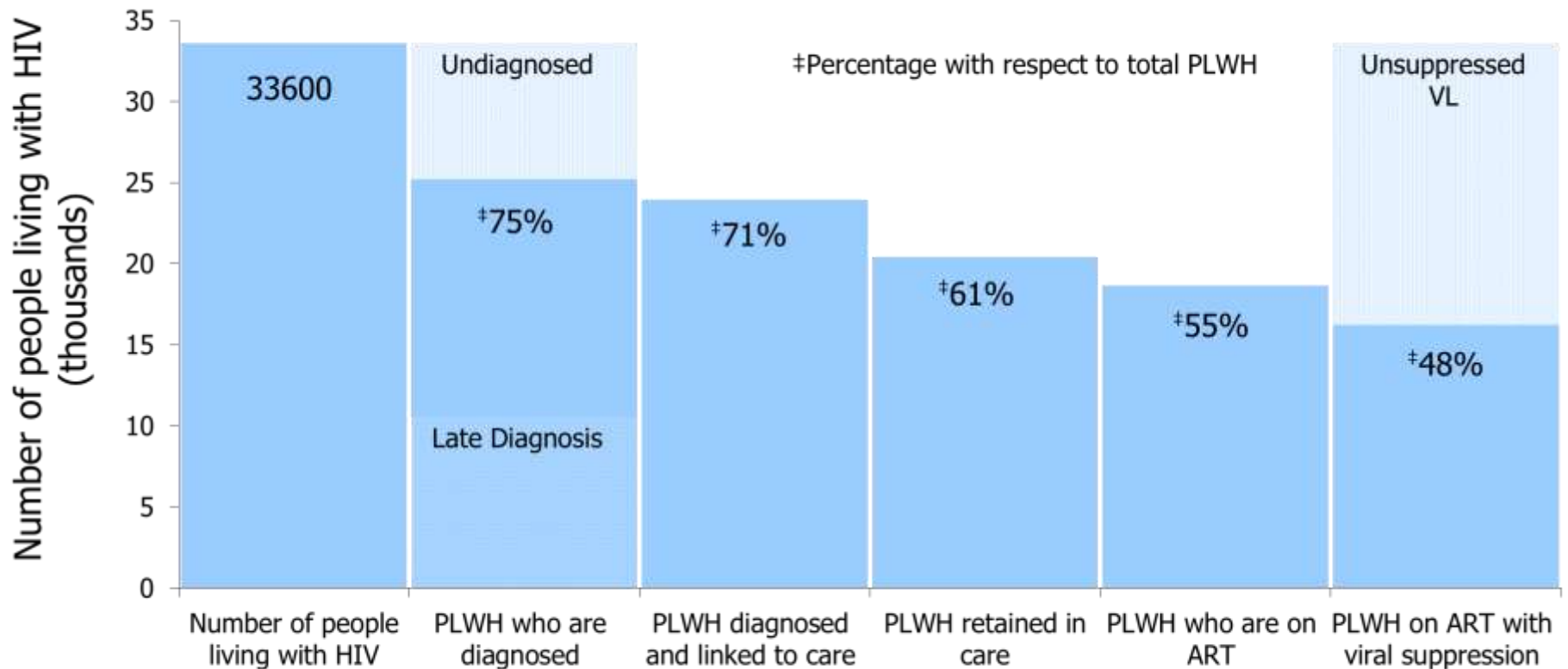
Derivation of each stage of the treatment cascade



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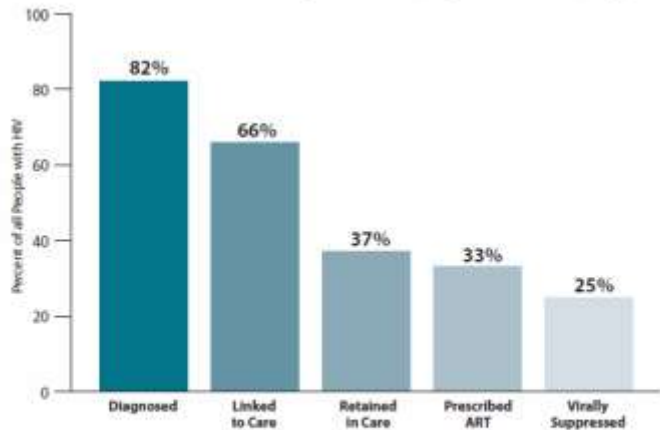
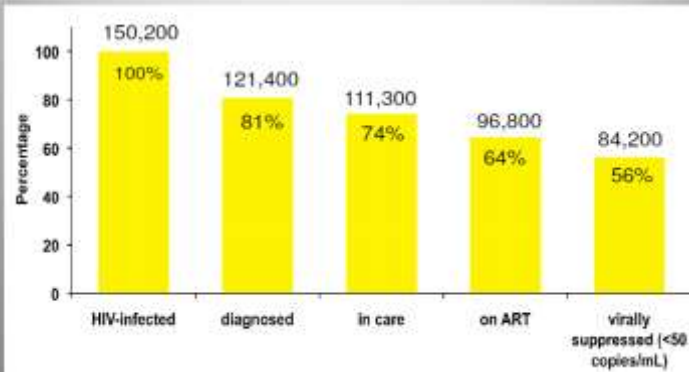
Results

The Treatment Cascade for Catalonia in 2011



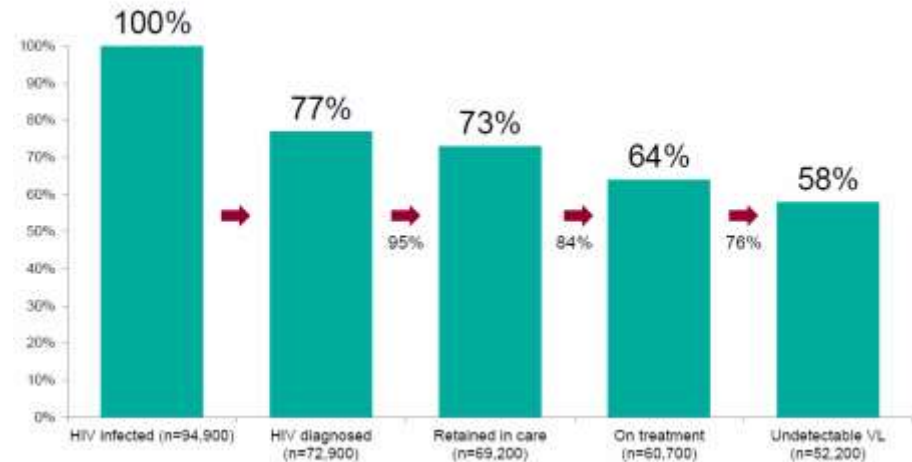
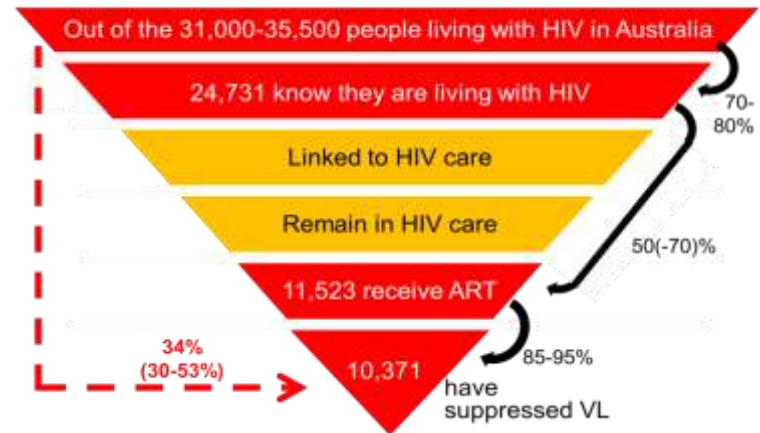
The HIV Treatment Cascade : Francea, Australia, USA, UK

Estimated number and percentage of HIV-infected persons engaged in selected stages of the continuum of HIV care

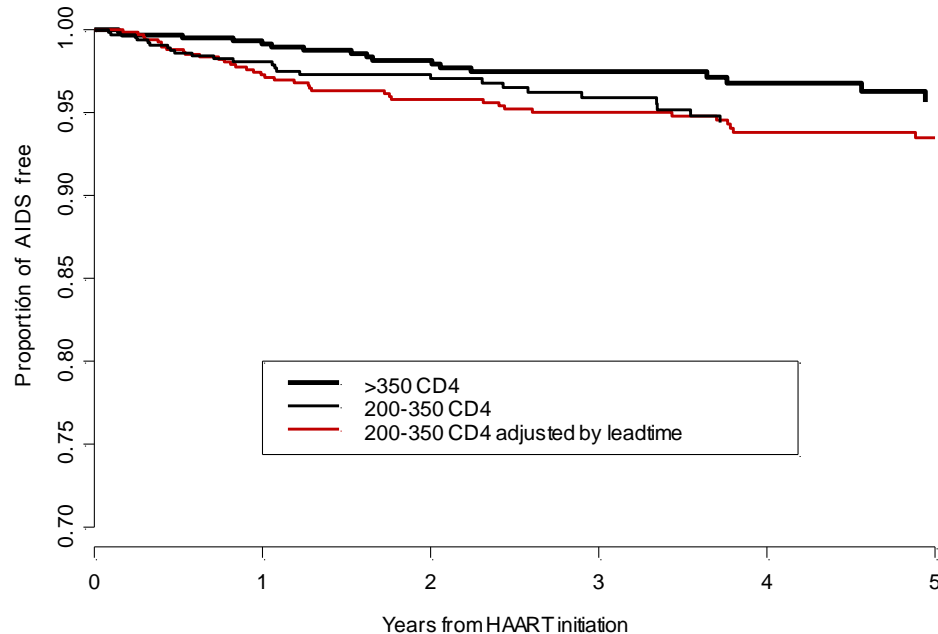


JULY 2012

Treatment cascade in Australia



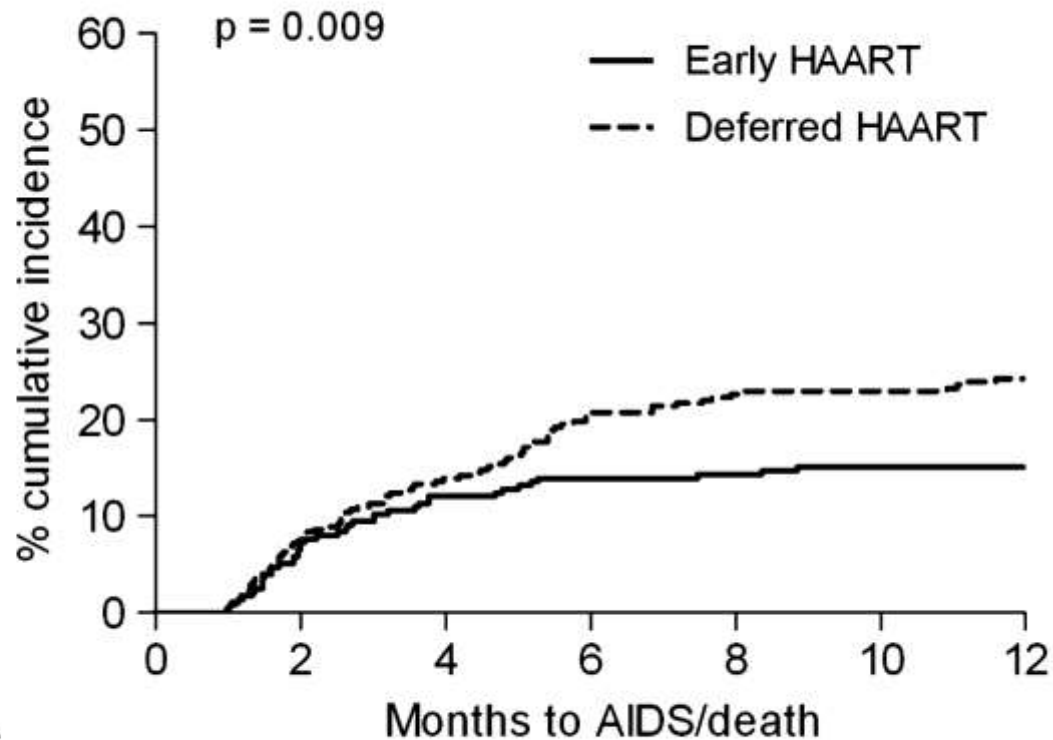
Contribution to clinical guidelines: Assessment of the optimal time to initiate cART



CD4	leadtime	n	AIDS	HR	95% CI
>350	-	625	17	1	-
200-350	Unadjusted	650	25	1.56	(0.84-2.90)
200-350	Adjusted	670	45	1.85	(1.03-3.33)

Jaén et al. J Acquir Immune Defic Syndr. 2008

Contribution to clinical guidelines: Optimal timing for initiation of cART in individuals presenting with AIDS



No at risk	0	2	4	6	8	10	12
Early HAART	277	256	239	230	222	213	205
Deferred HAART	348	321	292	261	247	239	230

Final remarks

- The PISCIS Cohort is an essential information source generating information on the quality of HIV screening programs and health care
- It is advisable to maintain the PISCIS Cohort as a permanent source of information to complement and enhance existing surveillance systems,
- and increasing the population representativeness in the forthcoming years

Future challenges

- Financiamiento insuficiente
- Coordinaciones más eficientes
- LOPD
- Cobertura de morbilidad importante: envejecimiento, cardiovascular, viral hepatitis (genotype, new treatments), cáncer

PISCIS Study Group

Coordinators: J. Casabona (Centre d'Estudis Epidemiològics sobre les Infeccions de Transmissió Sexual i Sida de Catalunya: CEEISCAT), Jose M. Miró (Hospital Clínic-Idibaps, Universitat de Barcelona).

Field Coordinator: C. Campbell (CEEISCAT).

Steering committee: J. Casabona, A. Esteve, C. Campbell (CEEISCAT), Jose M. Miró (Hospital Clínic-Idibaps, Universitat de Barcelona), D. Podzamczar (Hospital Universitari de Bellvitge-IDIBELL), J. Murillas (Hospital Son Espases de Mallorca).

Scientific committee: JM Gatell, C. Manzano (Hospital Clínic-Idibaps, Universitat de Barcelona), C. Tural, B. Clotet (Fundació Lluita contra la Sida, Fundació Irsicaixa, Hospital Universitari Germans Trias i Pujol, Universitat Autònoma de Barcelona), E. Ferrer (Hospital Universitari de Bellvitge-IDIBELL), M. Riera (Hospital Son Espases de Mallorca), F. Segura, G. Navarro (Corporació Sanitària i Universitària Parc Taulí, Universitat Autònoma de Barcelona), L. Force (Hospital de Mataró, Consorci Sanitari del Maresme), J. Vilaró (Hospital General de Vic), A. Masabeu (Hospital de Palamós), I. García (Hospital General d'Hospitalet), M. Guadarrama (Hospital Comarcal de l'Alt Penedès), C. Cifuentes, F. Homar (Hospital Son Llàtzer), D. Dalmau, À. Jaen (Hospital Universitari Mútua de Terrassa), P. Domingo (Hospital de la Santa Creu i Sant Pau), V. Falcó, A. Curran (Hospital Universitari Vall d'Hebron), C. Campbell, C. Agustí (CEEISCAT).

Data Management and Statistical Analysis: A. Esteve, A. Montoliu (CEEISCAT), I. Pérez (Hospital Clínic-Idibaps, Universitat de Barcelona), Jordi Curto (Hospital Universitari de Bellvitge-IDIBELL)

Technical Support: F. Sánchez (CEEISCAT), F. Gargoulas (Hospital Son Espases y Hospital Son Llàtzer), A. Gómez (Hospital Comarcal de l'Alt Penedès), JC Rubia (Hospital General d'Hospitalet)

Associated investigators: L. Zamora, J.L. Blanco, F. Garcia-Alcaide, E. Martínez, J. Mallolas, (Hospital Clínic-Idibaps, Universitat de Barcelona), JM. Llibre, G. Sirera, J. Romeu, A. Jou, E. Negro, C. Miranda (Fundació Lluita contra la Sida, Hospital Universitari Germans Trias i Pujol, Universitat Autònoma de Barcelona), M. Saumoy, JM. Tiraboschi, A. Imaz, F. Bolao, C. Cabellos, C. Peña, S. DiYacovo (Hospital Universitari de Bellvitge-IDIBELL), M. Sala, M. Cervantes, M.J. Amengual, M. Navarro, V. Segura (Corporació Sanitària i Universitària Parc Taulí, Universitat Autònoma de Barcelona,) P. Barrufet, (Hospital de Mataró, Consorci Sanitari del Maresme), J. Molina, M. Alvaro, J. Mercadal (Hospital Alt Penedès de Vilafranca), T. Payeras (Hospital Son Llàtzer).

Civil Society Representatives:

Juane Fernández (Comitè 1er de Desembre), Jesús E. Ospina (RedVIH)