HIV in Austria

44th Report of the Austrian HIV Cohort Study

Innsbruck, May 31st, 2023

HIV / AIDS
in Austria

44th Report of the
Austrian HIV Cohort Study

Edited by Robert Zangerle, MD
Professor of Dermatovenerology and Infectious Diseases
Medical University of Innsbruck
Innsbruck, Austria

Authors:
Gisela Leierer
Michaela Rappold
Stefanie Strickner
Robert Zangerle

e-mail: lki.ha.hiv-kohorte@tirol-kliniken.at

1 INTRODUCTION 5
2 ORGANIZATION OF THE AUSTRIAN HIV COHORT STUDY 6
3 FUNDING 7
4 COHORT PARTICIPANTS 8
4.1 Definition of Cohort participants 8
4.2 HIV, AIDS and Death per calendar year 9
4.3 Recruitment and follow-up of cohort participants 10
4.4 Patients currently in care 12
4.4.1 Overall 12
4.4.2 Number of patients currently on antiretroviral therapy 13
4.4.3 How many persons living with HIV (PLHIV) are there in Austria? 14
4.5 Use of antiretroviral drugs to prevent HIV infection 15
5 HIV/AIDS SURVEILLANCE IN AUSTRIA 16
5.1 Mode of transmission 16
5.1.1 All modes of transmission 16
5.1.2 Categories of heterosexually acquired infections 17
5.1.3 Mother-to-child-transmission 20
5.2 Sex 22
5.3 Age 23
5.3.1 Age at time of HIV diagnosis 23
5.3.2 Age of patients currently in care 25
5.4 Nationality and country of birth 27
5.4.1 Overview 27
5.4.2 Nationality: HIV diagnoses between 2020 and 2022 28
5.4.3 Nationality 29
5.4.4 Refugees from Ukraine (up to March 1st 2023) 30
5.5 Residence 30
5.5.1 Population size of area of residence 30
5.5.2 Residence: Federal states 31
5.6 Stage of HIV disease 32
5.6.1 Lowest ever measured CD4 cell count 32
5.6.2 Proportion of Patients with AIDS 32
6 DIAGNOSIS OF HIV AND PRESENTATION TO AN HIV CENTRE 33
6.1 Presentation to an HIV centre 33
6.2 Patients diagnosed since 2001 36
6.2.1 Frequency of early and late diagnoses 36
6.2.2 Factors associated with an „early" diagnosis in patients diagnosed since 2001 38
6.2.3 Factors associated with a „late" diagnosis in patients diagnosed since 2001 39
6.2.4 Factors associated with mortality in patients diagnosed since 2001 40
7 ANTIRETROVIRAL THERAPY (ART) 41
7.1 Patients currently in care regarding treatment status 41
7.2 Regimens of antiretroviral therapy 41
7.3 CD4 cell counts at initiation of ART 43
7.3.1 CD4 cell counts at initiation of ART 43
7.3.2 Median CD4 count at ART initiation 43
7.4 Initial therapy 45
7.4.1 Number of persons who started ART in the respective year 45
7.4.2 Regimens of the initial therapy 45
7.5 ART switches and interruptions 47
7.5.1 Switches and interruptions of ART during the first year of treatment 47
7.5.1.1 All switches, excluding switches from TDF to TAF containing regimens 47
7.5.2 ART switches and interruptions per calendar year 48
7.5.2.1 All switches, excluding switches from TDF to TAF containing regimens 48

7.5.3 Risk factors for treatment switches during the first year of treatment, excluding switches from TDF to TAF containing regimens 49
7.5.4 Risk factors for treatment interruptions (TI) during the first year of treatment 50
7.6 FREQUENCY OF DRUG DOSING 51
7.6.1 Overview 51
7.6.2 Most frequent used regimen to treat HIV (March 2023) 51

8 DISEASE PROGRESSION AND RESPONSE TO ART 52

8.1 HIV RNA (VIRAL LOAD) 52
8.1.1 Last HIV RNA in patients currently in care regardless of ART 52
8.1.2 The continuum of care in Austria 54
8.1.3 Last HIV RNA in patients on ART 55
8.1.3.1 Last HIV RNA of patients on ART at different points in time 55
8.1.3.2 Last HIV RNA of patientst on ART according to transmission category 56
8.1.4 Risk factors for viral replication 57

9 GLOSSARY 58

10 AUSTRIAN HIV COHORT STUDY GROUP 59

1 Introduction

At the end of the year 2001, representatives of 5 Austrian HIV treatment centres (AKH Vienna, Otto-Wagner-Hospital Vienna, AKH Linz, LKH Innsbruck and LKH Graz West) have founded the **„Austrian HIV Cohort Study (AHIVCOS)“**. In 2008, two more centres (LKH Salzburg and LKH Klagenfurt), in 2016 one more centre (Kaiser-Franz-Josef-Hospital Vienna) and in 2018 one more centre (Feldkirch) joined the AHIVCOS. The responsibility for the medical and scientific coordination lies with Robert Zangerle from the Medical University of Innsbruck.

Aims of Austrian cohort study are:

1) Optimization of patient management
2) HIV surveillance
3) Research projects

A special software, the *"HIV Patient Management System (HIP)"* is used in all centres and has replaced the previous *HIV data base* in 2005. The input of data is (was) done peripherally in the HIV treatment centres which consistently use the data base for clinical care. The input of laboratory findings is mostly done electronically. Apart from nurses and doctors, additional professional groups are involved in data entry in some centres (social workers, psychologists). Before data can be merged, the cohort participants are made anonymous. Therefore, it is cumbersome to identify cohort participants who are/were treated in more than just one treatment centre. This cannot be done by the use of personal data such as initials, birthday or postal code, but with HIV specific data (date of the HIV test, CD4 cell counts etc.).

***HIV Patient Management System*:**

Designed as a client-server application, the *HIP* stores its data in a persistent SQL database. The software is based on the model driven architecture paradigm and has been implemented with Microsoft .NET technology. The company DI Heinz Appoyer (now called *network vita*) was entrusted with the development of the *HIP*. The required hardware is provided by the local IT departments in the centres. In terms of data protection the programme fully complies with the Austrian data protection act (DSG 2000, valid since 1.1.2000). Access to the data base in the centres is restricted to authorized users only.

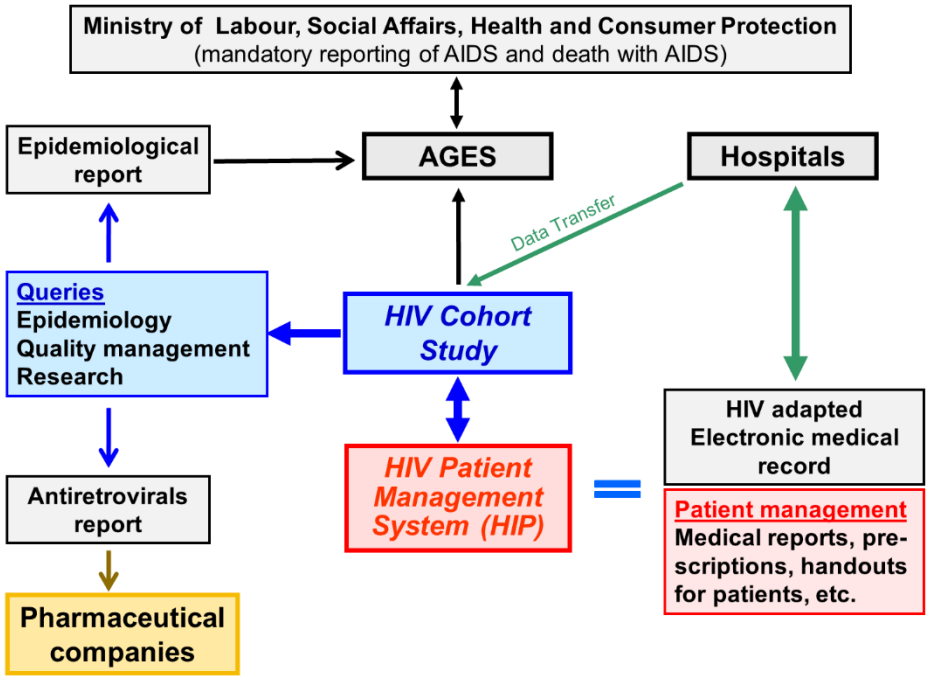
On the one hand, the *HIP* fulfils complex tasks for the clinical management of HIV infected patients, and on the other hand it allows queries and analyses to be performed by the users without restrictions. However, to allow both individual patient management and scientific queries is an enormous challenge which scientific HIV cohorts in other countries have not had to deal with. In Austria, there was no acceptance for a purely scientific data base. While for the clinical patient management the focus is on readability of diagnoses and therapies, creation of medical reports, prescriptions (trade names!), print-out of results etc., scientific queries need precise coding and categorization. Furthermore, the optimization of individual patient management requires an ongoing adjustment to the progress of information technology, whereas purely scientific data bases do not have such technological renewal pressure.

Special challenges for the *HIV Patient Management System* are:

- Checking of plausibility of the data after entry in the database
- Meeting the requirements of both clinical patient management and scientific database
- Weak/ overburdened infrastructure in HIV treatment centres

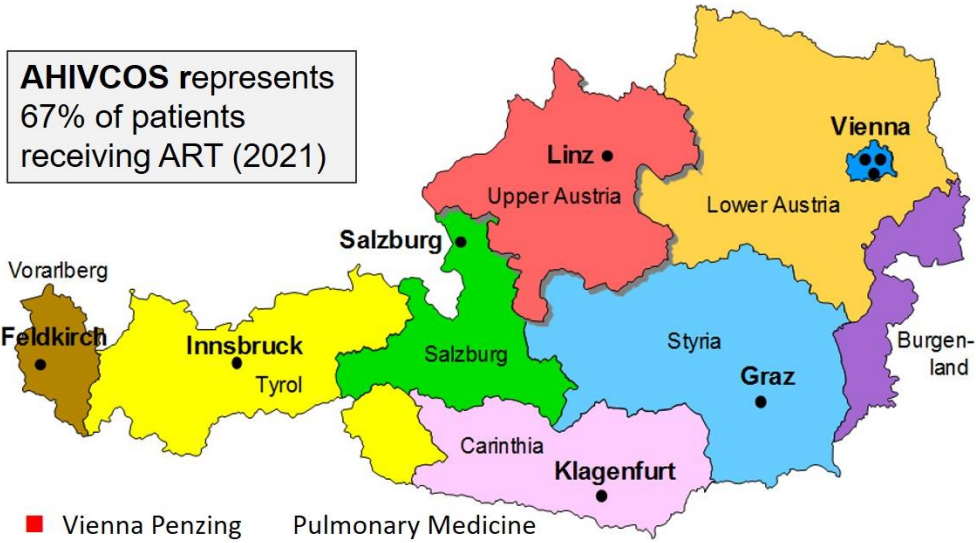
2 Organization of the Austrian HIV cohort study

The organization and further development of the HIV cohort study will stay complex, because some goals of the *Austrian HIV Cohort Study* are also of interest to health authorities and/ or institutions. The Federal Ministry of Labour, Social Affairs, Health and Consumer Protection (BMASGK, Department IX/A/7, Dr. Bernhard Benka) is in charge of HIV, whereas some agenda of this responsibility has been shifted to the Agency for Health and Food Safety (AGES). In contrast, patient care has to be provided by the different federal states, and the social insurance companies bear the costs of the HIV medication. The IT departments in the hospitals have to provide the IT hardware as well as the service/ data security. Because of the support of BMG and AGES, the collaboration between the *Austrian HIV Cohort Study* and the hospitals, especially with the local IT departments (e. g. interfaces between HIP and local IT systems) is legitimized. For IT departments, HIP as an "isolated application" is seen as an additional liability. On the other hand, hospitals have also an interest in the *HIV Patient Management System* because tasks of quality management and standardization of care can be managed more efficiently by using HIP. The establishment of the *HIV Patient Management System* is a big advance in the management of patients with HIV/AIDS („Good Chronic Disease Practice").



The development of the *HIV Patient Management System* incorporated the international standard format, the HIV Cohorts Data Exchange Protocol (HICDEP), so that data merging with networks of cohorts like ART-CC, EuroSIDA and RESPOND are greatly facilitated.

Centres of the Austrian HIV Cohort Study



Vienna Penzing	Pulmonary Medicine
Vienna AKH	Dermatovenereology
Vienna Favoriten	Infectious Diseases
Graz	Infectious Diseases
Linz	Dermatovenereology
Salzburg	Oncology/Infectious Diseases
Klagenfurt	Oncology
Innsbruck	Dermatovenereology
Feldkirch	Oncology/Infectious Diseases

3 Funding

The Austrian HIV Cohort Study (AHIVCOS) will be financed until September 2022. The maintenance and the further development of the ***HIV Patient Management System ("HIP")*** as well as the provision of epidemiological reports ***(e.g. „Report of the Austrian HIV Cohort Study")*** are secured with the public sector (AGES, by order of the Federal Ministry of Health), international cohort collaborations (RESPOND, ART-CC), the partners in the pharmaceutical industry (all companies providing HIV drugs) and the participating hospitals (routine maintenance contracts).

4 Cohort participants

4.1 Definition of Cohort participants

The Austrian HIV Cohort Study has gained approval of the ethical committees of the HIV treatment centres. With this the Austrian HIV Cohort Study has been ready to join the international network of cohorts like ART-CC, CASCADE, COHERE and RESPOND.

Inclusion criteria:

- Patients living with HIV infection

Exclusion criteria:

- Physician's decision
- Patient withholds consent

Frequency of the monitoring („Follow-up"):
Cohort participants will be examined and findings/ results documented at regular visits (at least semianually), therefore no additional costs will arise.

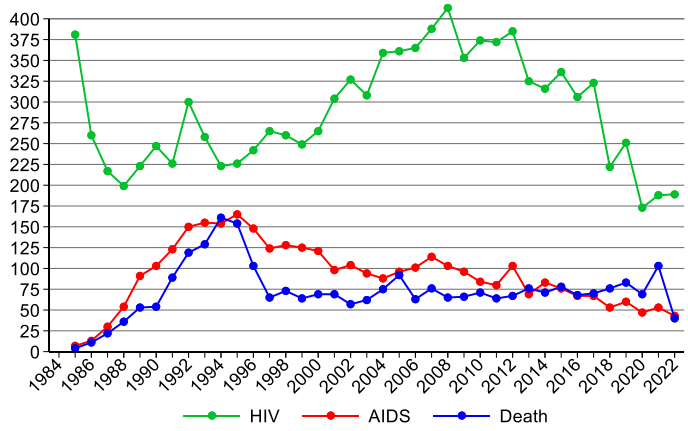
Minimal dataset:

- Last negative, first positive HIV test, seroconversion illness, AIDS diagnoses, all cases of death
- First contact with the HIV centre
- Age, sex, mode of transmission of HIV
- CD4 count, HIV RNA, co-infections and co-morbidities
- Resistances to antiretroviral drugs
- Antiretroviral therapies (past and present)
- Co-morbidities
- Co-medication

Merger of data:

- Only indirectly personal data according to the data protection act
- Semiannual (March and September)

4.2 HIV, AIDS and Death per calendar year



Year	HIV	AIDS	DEATH
1985	381	7	4
1986	260	13	11
1987	217	30	22
1988	199	54	36
1989	223	91	53
1990	247	103	54
1991	226	123	89
1992	300	150	119
1993	258	155	129
1994	223	154	161
1995	226	165	154
1996	242	148	103
1997	265	124	65
1998	260	128	73
1999	249	125	64
2000	265	121	69
2001	304	98	69
2002	327	104	57
2003	308	94	62
2004	359	88	75
2005	361	96	92
2006	365	101	63
2007	388	114	76
2008	413	103	65
2009	353	96	66
2010	374	84	71
2011	372	80	64
2012	385	103	67
2013	325	69	76
2014	316	83	71
2015	336	76	78
2016	306	67	68
2017	323	67	70
2018	222	53	76
2019	251	60	83
2020	173	47	69
2021	188	53	103
2022	189	43	40
2023	15	4	5
Total	**10994**	**3474**	**2772**

4.3 Recruitment and follow-up of cohort participants

So far, 10994 HIV infected patients providing 123337.65 years of follow-up have been recruited into the cohort study. We assume that there were more than 2772 deaths, but data entry from patients with loss of follow-up or last contact a long time ago is incomplete. Most centres do not have enough resources to enter data retrospectively.

Cumulative number of all cohort participants

	Penzing Vienna	AKH Vienna	KFJ Vienna	Linz	Salz-burg	Inns-bruck	Feld-kirch	Graz	Klagen-furt	Total
01.03.2023	2780	3291	270	1272	557	1504	152	843	323	**10994**

	Last contact with HIV treatment centre and alive or not known to be dead			
	Follow-up within the last 12 months	Living/moved to care abroad	Lost to follow-up	**Total**
Penzing Vienna	834	61	754	**1649**
AKH Vienna	1326	251	1096	**2673**
KFJ Vienna	197	10	59	**266**
Linz	690	14	169	**873**
Salzburg	323	51	136	**510**
Innsbruck	758	235	93	**1086**
Feldkirch	118	4	22	**144**
Graz	499	26	202	**727**
Klagenfurt	225	12	57	**294**
Total	**4970**	**664**	**2588**	**8222**

	Death		
	Death within the last 12 months	Death since more than 12 months	**Total**
Penzing Vienna	5	1126	**1131**
AKH Vienna	9	609	**618**
KFJ Vienna	0	6	**6**
Linz	3	396	**399**
Salzburg	2	45	**47**
Innsbruck	13	405	**418**
Feldkirch	1	7	**8**
Graz	2	114	**116**
Klagenfurt	0	29	**29**
Total	**35**	**2737**	**2772**

Risk factors for no follow-up within the last 12 months

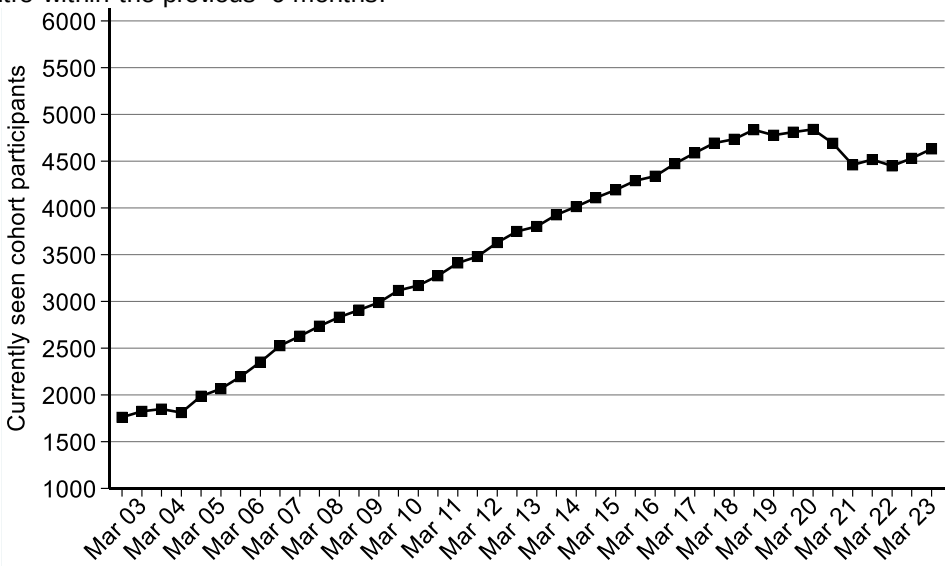
Persons with residency abroad were excluded from this analysis.

All centres	Frequencies		%	Univariable logistic Regression			Multivariable logistic Regression		
Variable	2588	7558	34.24%	**OR**	**(95%CI)**	**p-value**	**OR**	**(95%CI)**	**p-value**
Demographic characteristics									
Age at last contact									
< 30	488	706	69.12%	10.19	[8.46,12.27]	0.000	8.94	[7.30,10.93]	0.000
30-50	1583	3981	39.76%	3.01	[2.68,3.37]	0.000	2.73	[2.41,3.09]	0.000
> 50	517	2871	18.01%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
HIV transmission category									
Male IDU	267	676	39.50%	1.18	[0.99,1.39]	0.062	1.08	[0.90,1.30]	0.409
Female IDU	118	306	38.56%	1.13	[0.89,1.44]	0.320	1.11	[0.85,1.44]	0.433
Male hetero	385	1313	29.32%	0.75	[0.65,0.86]	0.000	0.89	[0.76,1.04]	0.142
Female hetero	395	1391	28.40%	0.71	[0.62,0.82]	0.000	0.70	[0.60,0.82]	0.000
Other	222	509	43.61%	1.39	[1.15,1.68]	0.001	1.10	[0.88,1.38]	0.403
MSM	1201	3363	35.71%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Population size of residence area									
Vienna	1634	3472	47.06%	3.09	[2.80,3.41]	0.000	3.02	[2.71,3.35]	0.000
Missing	54	57	94.74%	62.58	[19.52,200.60]	0.000	26.65	[8.00,88.84]	0.000
Outside Vienna	900	4029	22.34%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Nationality									
High prevalence	336	749	44.86%	1.80	[1.54,2.10]	0.000	1.61	[1.33,1.94]	0.000
Low prevalence	543	1494	36.35%	1.26	[1.12,1.43]	0.000	0.96	[0.84,1.10]	0.593
Missing	88	108	81.48%	9.73	[5.97,15.87]	0.000	4.80	[2.78,8.29]	0.000
Austria	1621	5207	31.13%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Stage of disease									
AIDS									
Yes	442	1585	27.89%	0.69	[0.61,0.78]	0.000	0.94	[0.82,1.07]	0.342
No	2146	5973	35.93%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.

4.4 Patients currently in care

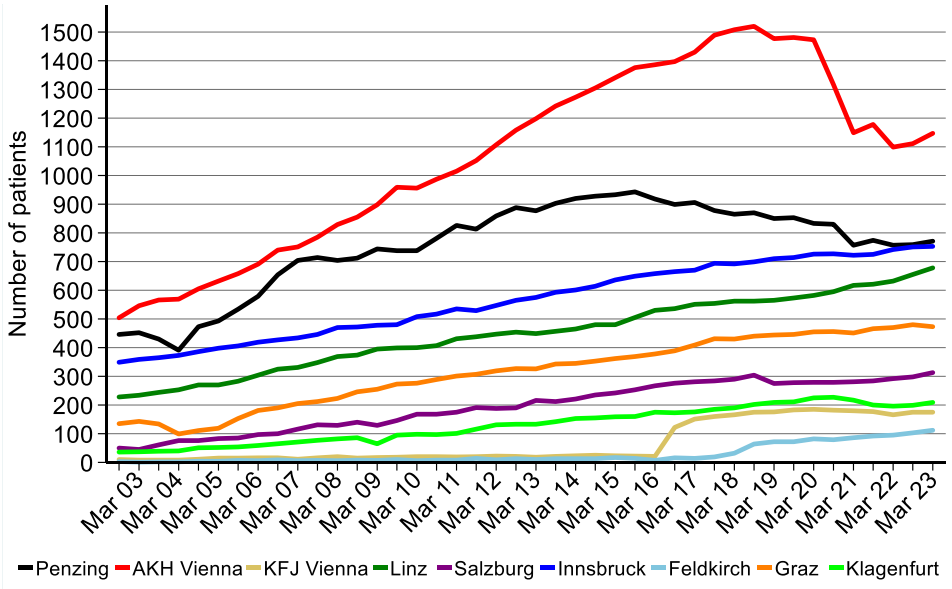
4.4.1 Overall

Patients were seen as currently in care when they had at least one contact to an HIV centre within the previous 6 months.



Number of patients currently in care

	Penzing Vienna	AKH Vienna	KFJ Vienna	Linz	Salz-burg	Inns-bruck	Feld-kirch	Graz	Klagen-furt	Total
01.03.2023	771	1147	175	678	313	753	112	473	209	**4631**

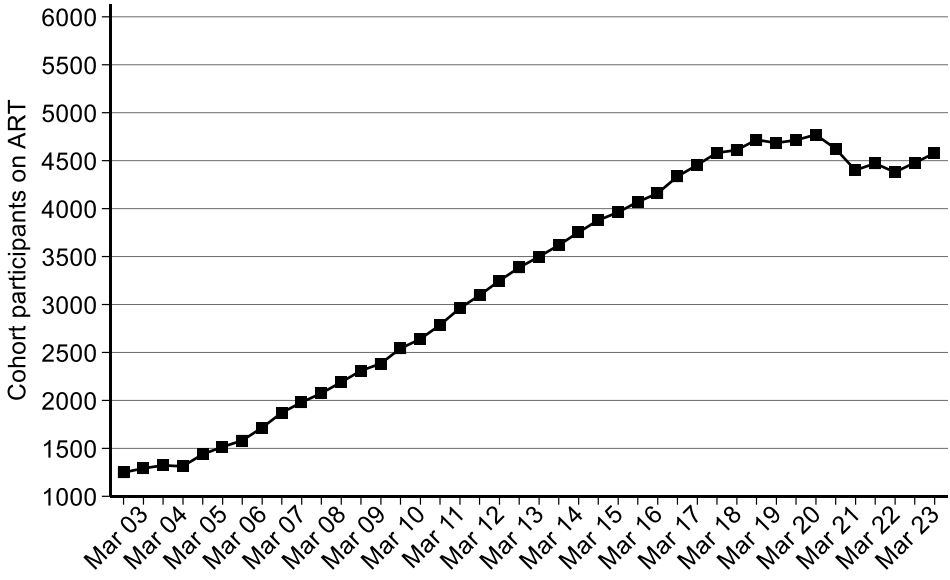


Number of currently seen patients by residence

	HIV-centre									
	Penzing Vienna	AKH Vienna	KFJ Vienna	Linz	Salz-burg	Inns-bruck	Feld-kirch	Graz	Klagen-furt	**Total**
Burgenland	21	26	9	0	0	1	0	15	0	**72**
Carinthia	0	0	0	3	6	7	0	16	201	**233**
Lower Austria	178	212	16	48	1	3	0	2	0	**460**
Upper Austria	1	4	1	604	28	5	0	1	0	**644**
Salzburg	0	0	1	6	239	32	0	1	0	**279**
Styria	2	5	1	5	7	4	0	431	3	**458**
Tyrol	0	0	0	1	3	558	0	1	0	**563**
Vorarlberg	1	0	0	1	0	122	111	0	0	**235**
Vienna	566	895	144	7	1	7	0	4	1	**1625**
Foreign/missing	2	5	3	3	28	14	1	2	4	**62**
Total	**771**	**1147**	**175**	**678**	**313**	**753**	**112**	**473**	**209**	**4631**

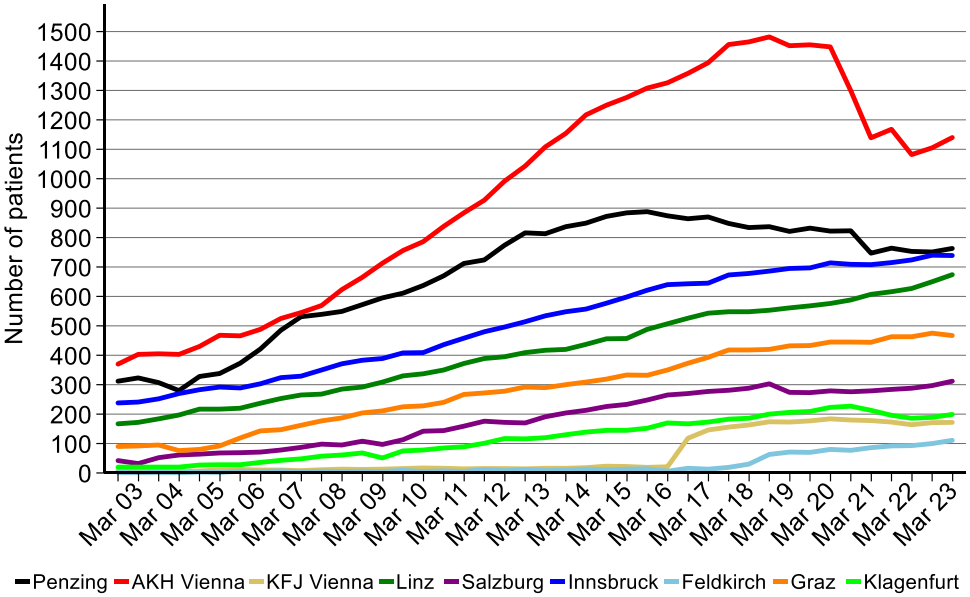
4.4.2 Number of patients currently on antiretroviral therapy

4577 patients (98.8%) were on antiretroviral therapy in the 9 HIV treatment centres. Of the 54 patients not on treatment 25 had received antiretroviral treatment at an earlier point in time (women who were on ART to prevent mother-to-child transmission, patients who received transient ART during/ after the acute HIV infection, etc.).



Number of participants currently on antiretroviral therapy

	Penzing Vienna	AKH Vienna	KFJ Vienna	Linz	Salz-burg	Inns-bruck	Feld-kirch	Graz	Klagen-furt	Total
01.03.2023	763	1140	172	674	312	739	111	467	199	**4577**



Number of participants currently on antiretroviral therapy by area of residence

	HIV-centre									
	Penzing Vienna	AKH Vienna	KFJ Vienna	Linz	Salz-burg	Inns-bruck	Feld-kirch	Graz	Klagen-furt	**Total**
Burgenland	21	26	9	0	0	1	0	15	0	**72**
Carinthia	0	0	0	3	6	7	0	16	192	**224**
Lower Austria	177	210	15	48	1	3	0	2	0	**456**
Upper Austria	1	4	1	600	28	5	0	1	0	**640**
Salzburg	0	0	1	6	238	31	0	1	0	**277**
Styria	2	5	1	5	7	4	0	425	2	**451**
Tyrol	0	0	0	1	3	548	0	1	0	**553**
Vorarlberg	1	0	0	1	0	120	110	0	0	**232**
Vienna	559	890	142	7	1	7	0	4	1	**1611**
Foreign/missing	2	5	3	3	28	13	1	2	4	**61**
Total	**763**	**1140**	**172**	**674**	**312**	**739**	**111**	**467**	**199**	**4577**

4.4.3 How many persons living with HIV (PLHIV) are there in Austria?

According to *Dachverband der Sozialversicherungsträger*, 7396 persons received ART in 2021. Within AHIVCOS 4881 persons received ART in 2021, representing 67%. According to the ECDC tool (see also page 91) between 86,5% and 92,2% of PLHIV are receiving ART. Thus, based on the number given by the *Dachverband,* the estimate for PLHIV ranges from 8000 to 8600 for end of 2021.

As of January 1st 2022, the modelling tool of ECDC reveals 7732 PLHIV. Assuming that AHIVCOS is representative for Austria, the overall estimate for PLHIV sums up to 11 540, which is a large overestimate, since the ascertainment of persons who left the country is very incomplete (e.g. migrant workers from Europe mainly in the tourism industry, rejection of asylum application or voluntary return to home country).

4.5 Use of antiretroviral drugs to prevent HIV infection

PEP

	Non-occupational PEP started in						
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Sex							
Women	37	40	63	65	44	45	42
Men	107	134	161	263	150	180	190
Age (years)							
<30	64	97	114	164	103	126	119
30-48	72	72	103	150	84	94	107
≥50	8	5	7	14	7	5	6
Area of residence							
Vienna	74	100	127	191	108	120	129
Lower Austria	4	6	10	13	21	13	17
Burgenland	1	0	1	4	4	2	2
Upper Austria	3	15	17	25	11	31	21
Salzburg	0	7	8	10	2	3	8
Tyrol	22	11	23	29	29	30	18
Vorarlberg	2	1	2	3	3	3	9
Styria	10	7	14	17	8	10	18
Carinthia	0	0	1	1	0	0	0
Missing/Foreign	28	27	21	35	8	13	10

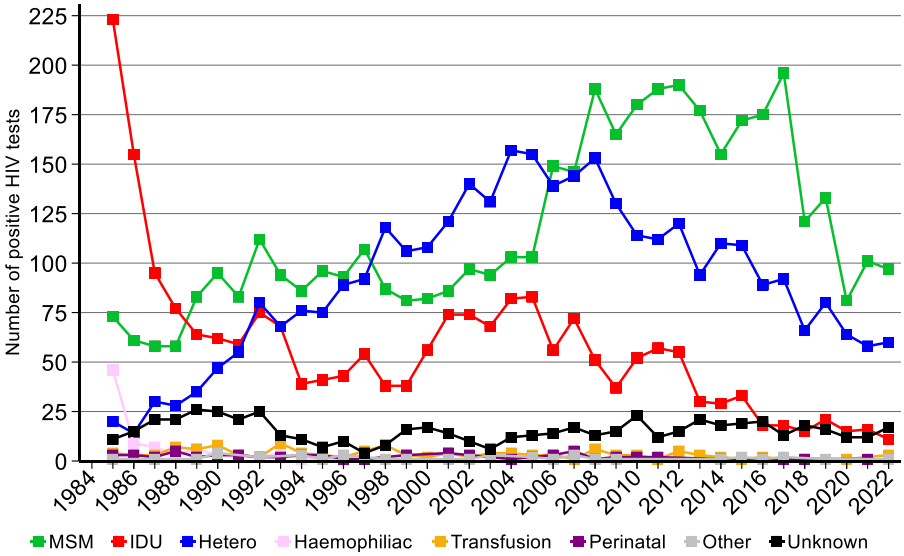
PrEP

	PrEP started in							
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**On PrEP at 01.03.2023**
Sex								
Women	0	1	3	8	4	2	5	21
Men	4	101	200	287	210	300	416	1249
Age (years)								
<30	2	32	53	83	63	110	172	402
30-48	2	64	124	186	130	157	203	733
≥50	0	6	26	26	21	35	46	135
Area of residence								
Vienna	1	81	84	133	62	86	102	457
Lower Austria	0	5	9	11	10	8	14	53
Burgenland	0	0	0	3	1	3	2	10
Upper Austria	0	0	21	28	33	51	71	198
Salzburg	0	1	5	6	2	5	24	42
Tyrol	3	12	60	87	73	118	153	351
Vorarlberg	0	1	19	12	17	21	30	86
Styria	0	1	4	10	14	8	20	57
Carinthia	0	0	0	0	1	1	1	3
Missing/Foreign	0	1	1	5	1	1	4	13

5 HIV/AIDS Surveillance in Austria

5.1 Mode of transmission

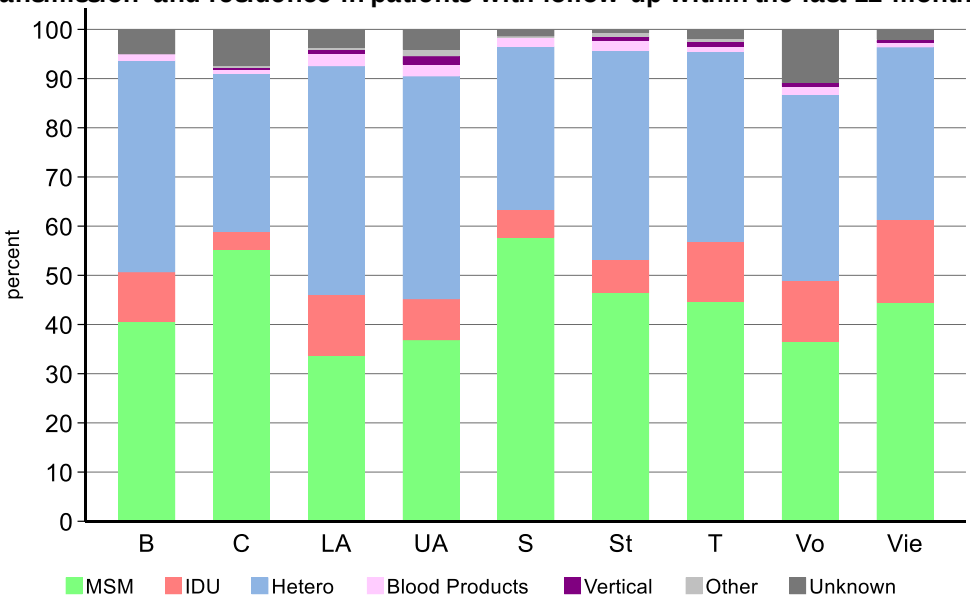
5.1.1 All modes of transmission



	BMG	AHIVCOS											
						Heterosexually							
Year	Total	MSM		IDU		infected		Others		Total	Women		
1998	313	87	33.46%	38	14.62%	118	45.38%	17	6.54%	260	61	23.46%	
1999	339	81	32.53%	38	15.26%	106	42.57%	24	9.64%	249	69	27.71%	
2000	428	82	30.94%	56	21.13%	108	40.75%	19	7.17%	265	77	29.06%	
2001	402	86	28.29%	74	24.34%	121	39.80%	23	7.57%	304	73	24.01%	
2002	442	97	29.66%	74	22.63%	140	42.81%	16	4.89%	327	92	28.13%	
2003	423	94	30.52%	68	22.08%	131	42.53%	15	4.87%	308	94	30.52%	
2004	470	103	28.69%	82	22.84%	157	43.73%	17	4.74%	359	107	29.81%	
2005	453	103	28.53%	83	22.99%	155	42.94%	20	5.54%	361	101	27.98%	
2006	435	149	40.82%	56	15.34%	139	38.08%	21	5.75%	365	88	24.11%	
2007	515	146	37.63%	72	18.56%	144	37.11%	26	6.70%	388	87	22.42%	
2008	505	188	45.52%	51	12.35%	153	37.05%	21	5.08%	413	97	23.49%	
2009	507	165	46.74%	37	10.48%	130	36.83%	21	5.95%	353	79	22.38%	
2010	487	180	48.13%	52	13.90%	114	30.48%	28	7.49%	374	70	18.72%	
2011	525	188	50.54%	57	15.32%	112	30.11%	15	4.03%	372	77	20.70%	
2012	523	190	49.35%	55	14.29%	120	31.17%	20	5.19%	385	81	21.04%	
2013	481	177	54.46%	30	9.23%	94	28.92%	24	7.38%	325	51	15.69%	
2014	403	155	49.05%	29	9.18%	110	34.81%	22	6.96%	316	70	22.15%	
2015	428	172	51.19%	33	9.82%	109	32.44%	22	6.55%	336	45	13.39%	
2016	447	175	57.19%	18	5.88%	89	29.08%	24	7.84%	306	52	16.99%	
2017	510	196	60.68%	18	5.57%	92	28.48%	17	5.26%	323	53	16.41%	
2018	323 / 74*	121	54.50%	15	6.76%	66	29.73%	20	9.01%	222	38	17.12%	
2019	336 / 94*	133	52.99%	21	8.37%	80	31.87%	17	6.77%	251	39	15.54%	
2020	283 / 49*	81	46.82%	15	8.67%	64	36.99%	13	7.51%	173	31	17.92%	
2021	310 / 66*	101	53.72%	16	8.51%	58	30.85%	13	6.91%	188	31	16.49%	
2022	395 / 78*	97	51.32%	11	5.82%	60	31.75%	21	11.11%	189	34	17.99%	
2023		10	66.67%	1	6.67%	4	26.67%	0	0.00%	15	1	6.67%	

*second number tested anonymously since 2018

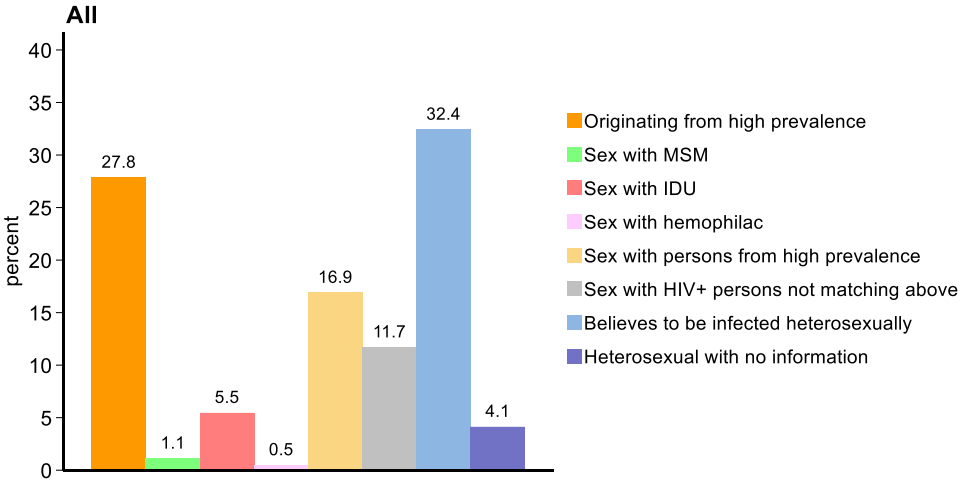
Transmission and residence in patients with follow-up within the last 12 months

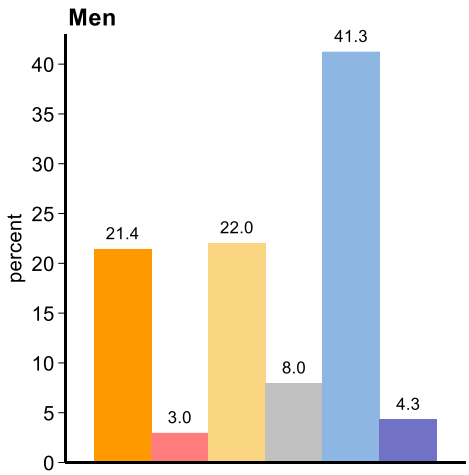


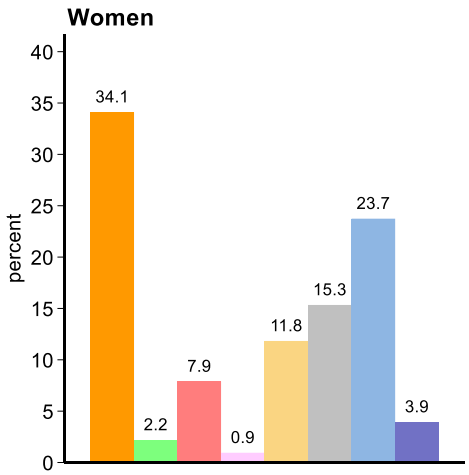
The abbreviation MSM is used for „Men who have sex with men". IDU means „Injecting Drug Use". The category IDU also includes men who are both MSM and IDU. The category "blood products" includes cohort participants who have received coagulation compounds or blood transfusions. Among the patients with a follow-up in the last 12 months, 38.71% have been infected through heterosexual contacts, 43.50% through homosexual contacts and 12.01% through the injection of drugs.

5.1.2 Categories of heterosexually acquired infections

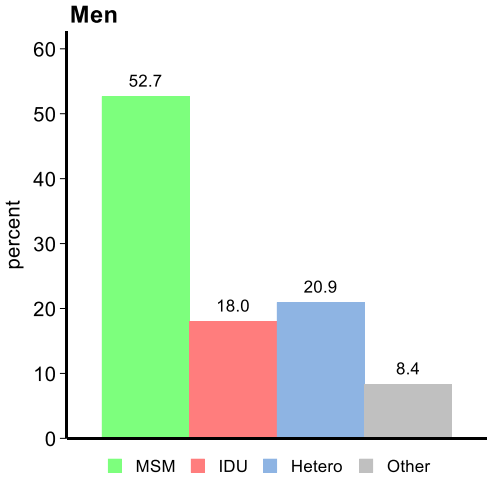
Because of missing data, the HIV treatment centre Penzing Vienna has been excluded from some analyses.

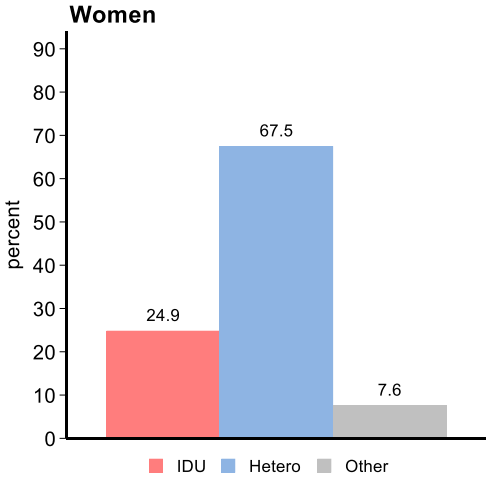




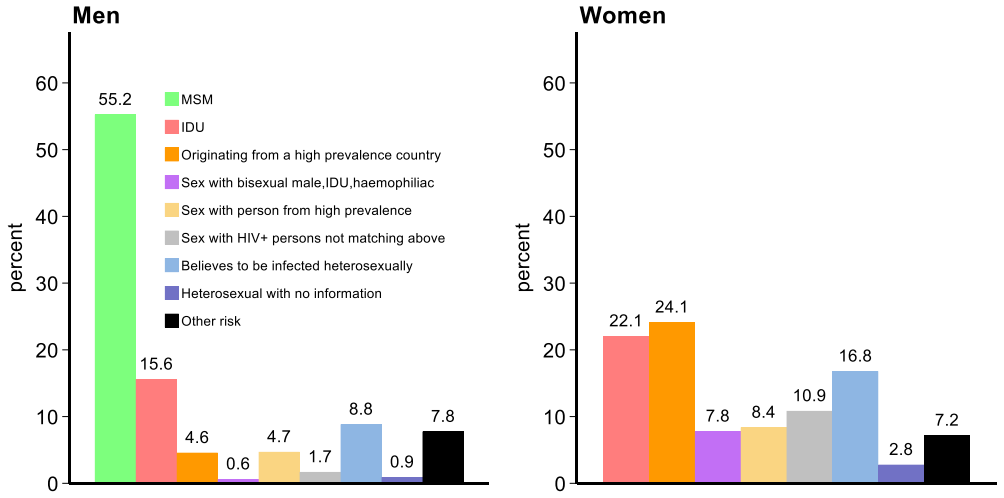


Categories of transmission

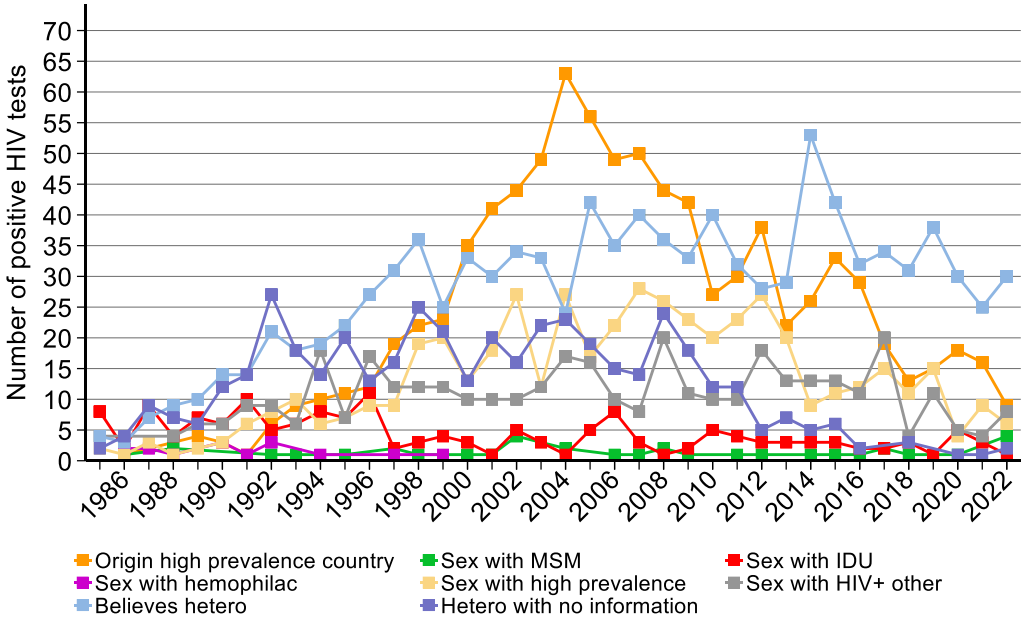




Sub-categories of transmission



Sub-categories of heterosexually acquired infections

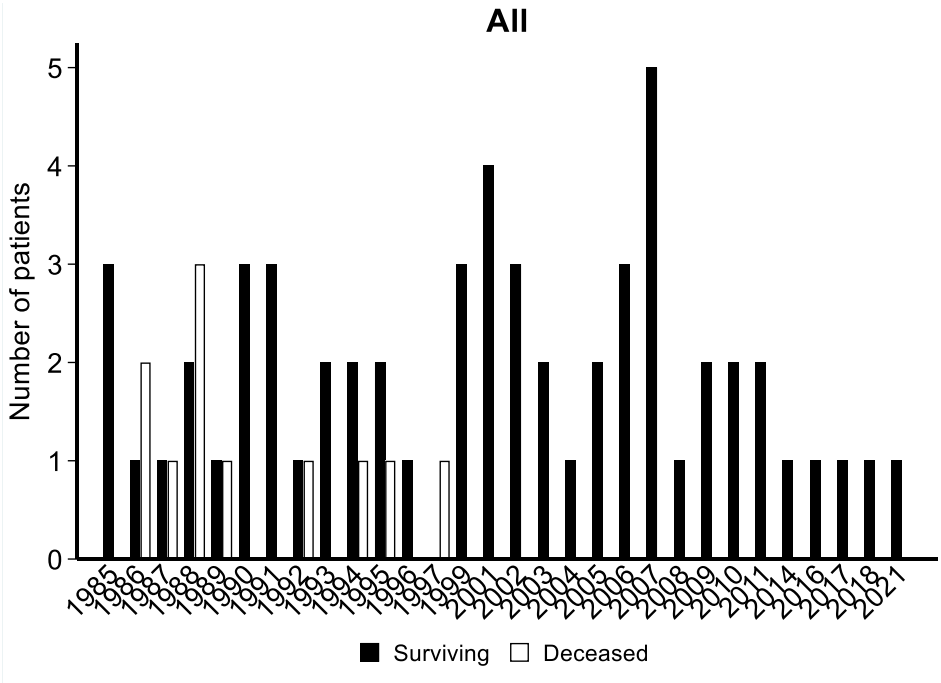


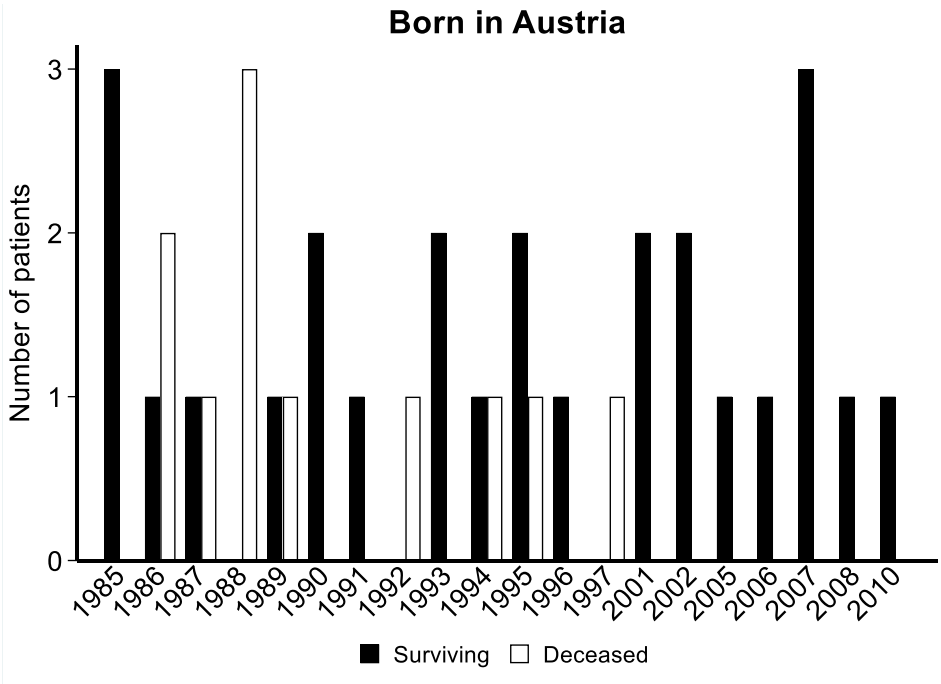
5.1.3 Mother-to-child-transmission

Nowadays, mother-to-child-transmission is the only route of HIV transmission amongst children. All HIV infected children in Austria are followed in paediatric HIV treatment centres, therefore the data presented here are related to patients who have also been in care by the adult HIV treatment centres. Obviously, these data are incomplete.

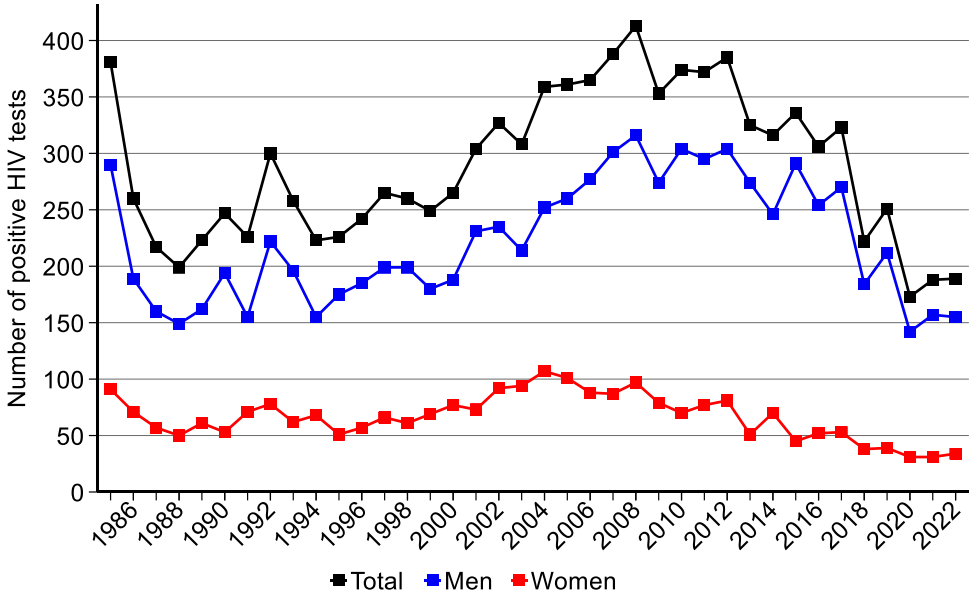
	Living participants		Deceased participants	Total
	<18 years	>18 years		
Burgenland	0	1	0	**1**
Carinthia	0	1	0	**1**
Lower Austria	1	4	0	**5**
Upper Austria	4	8	1	**13**
Salzburg	1	0	0	**1**
Styria	0	4	0	**4**
Tyrol	2	4	4	**10**
Vorarlberg	2	0	3	**5**
Vienna	6	16	3	**25**
Missing residency	0	1	0	**1**
Foreign	0	2	0	**2**
Total	**16**	**41**	**11**	**68**

In January 2010, routine HIV testing was introduced in Austria. The HIV test is part of the mother-child booklet (*Mutter-Kind-Pass*). In order to be eligible for childcare allowance *(Kinderbetreuungsgeld)* you must have the first ten examinations stipulated in the mother-child booklet done correctly and obtain proof of it.
Recently, at least two transmissions of mother-to-child in Austria have been linked to counselling with HIV denialists.


All
Number of patients
0
1
2
3
4
5
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1999
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2014
2016
2017
2018
2021
Surviving
Deceased

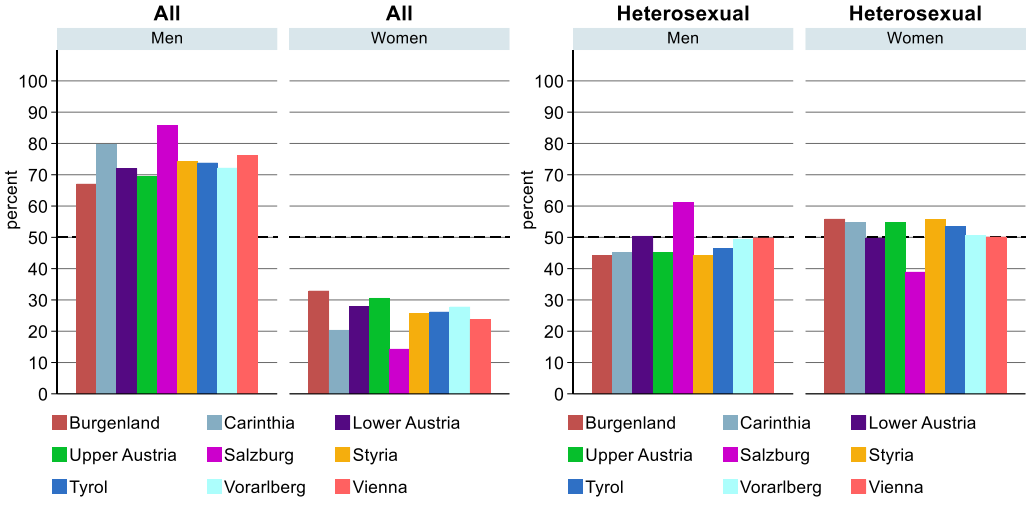

Born in Austria
Number of patients
0
1
2
3
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
2001
2002
2005
2006
2007
2008
2010
Surviving
Deceased

5.2 Sex



9 transgender women are participating in the Austrian HIV cohort study.
25.3% of the patients with a follow-up within the last 12 months are female. The rate is highest in Burgenland (32.9%) and Upper Austria (30.6%).
In the subgroup of heterosexually acquired infections, the rate of the women is 51.8%. It is highest in Burgenland (55.9%), Styria (55.8%), Carinthia (54.9%) and Upper Austria (54.9%).

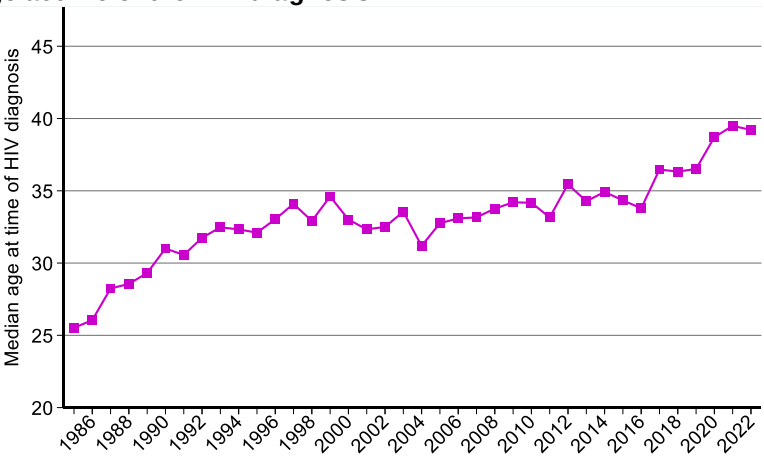
Sex of the patients with a follow-up in the last 12 months

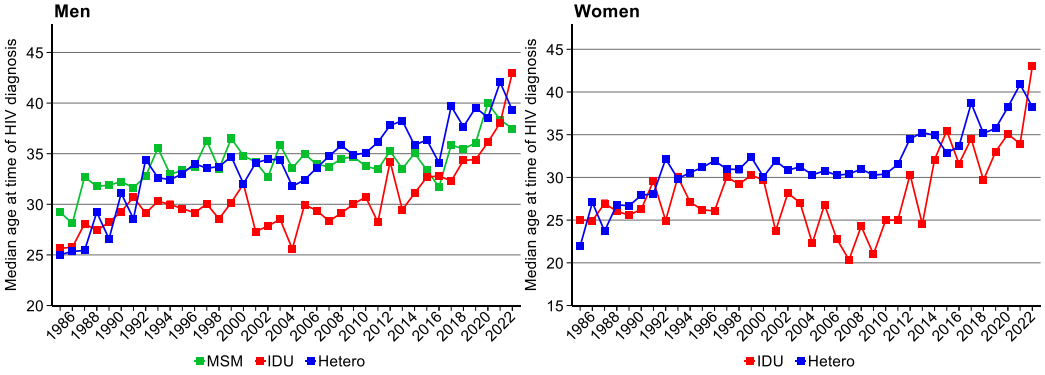


5.3 Age

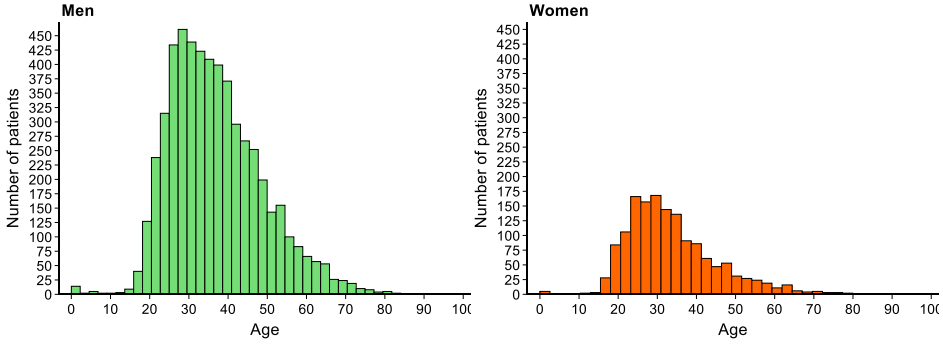
5.3.1 Age at time of HIV diagnosis

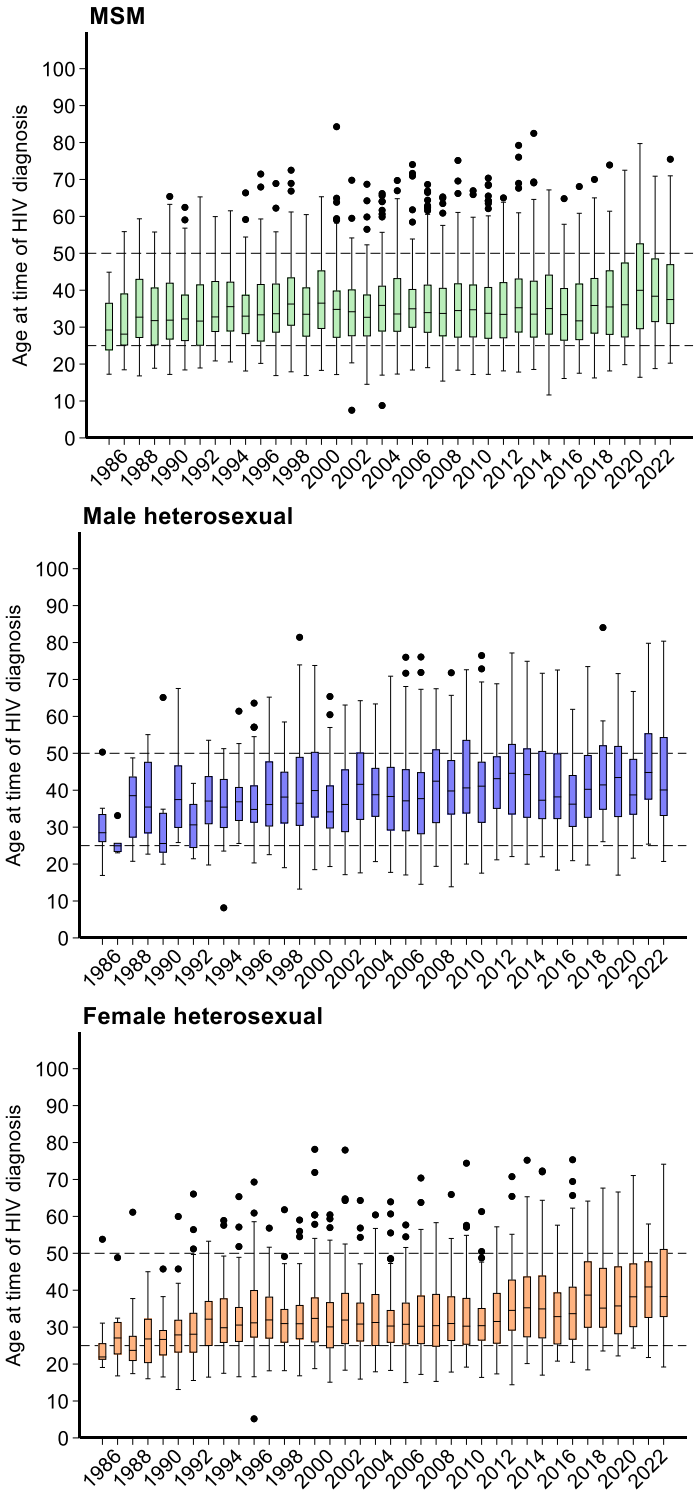
Median age at time of the HIV diagnosis





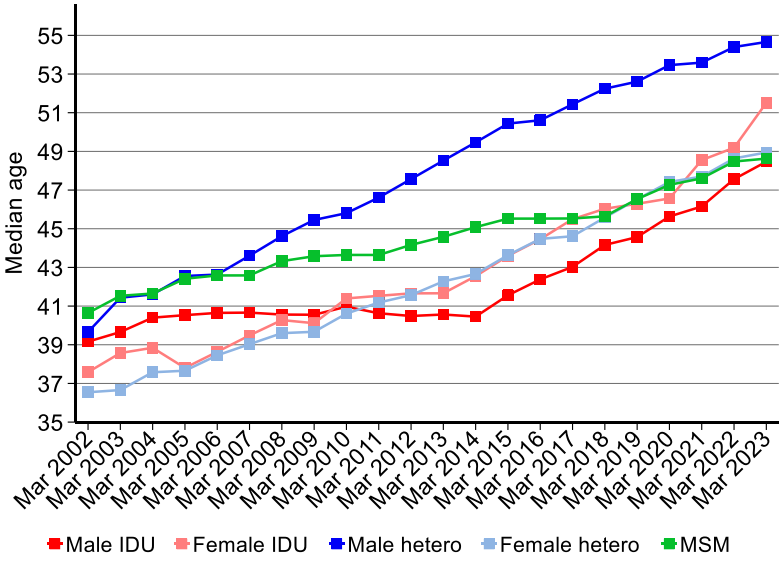
Age at time of the HIV diagnosis



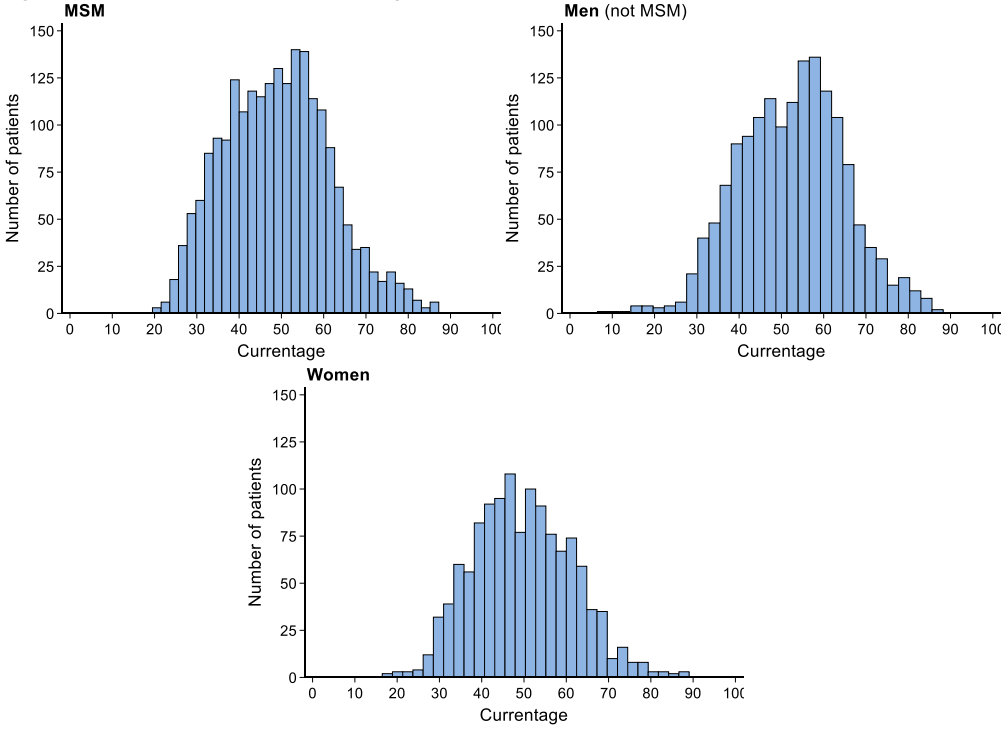

MSM
Age at time of HIV diagnosis
0
10
20
30
40
50
60
70
80
90
100
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
Male heterosexual
Age at time of HIV diagnosis
Female heterosexual
Age at time of HIV diagnosis

5.3.2 Age of patients currently in care

Overall, median age increased from 39.4 in March 2002 to 50.3 in March 2023. In MSM, median age increased from 40.7 in March 2002 to 48.6 in March 2023, in men (not MSM) from 39.5 to 53.2 and in women from 36.7 to 48.7.



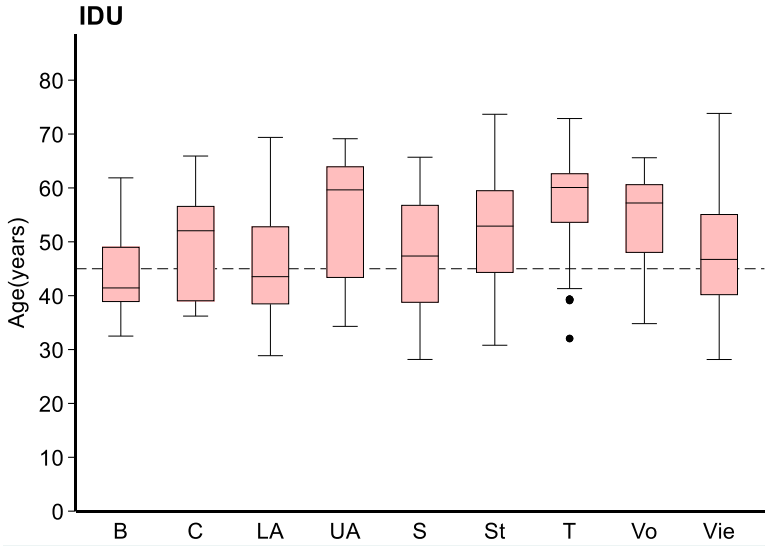
Median and average age are 50.3 and 50.3 years, respectively. 22.0% are older than 60 years, 50.8% are older than 50 years.



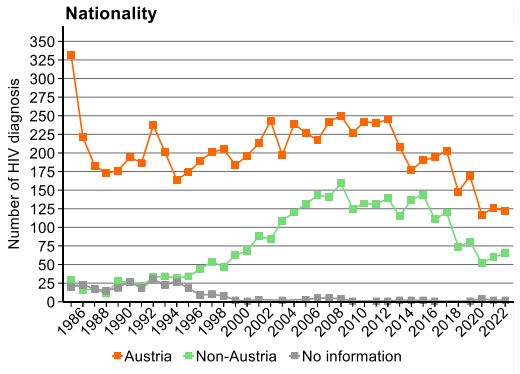
Age across the federal states: follow-up in the last 12 months

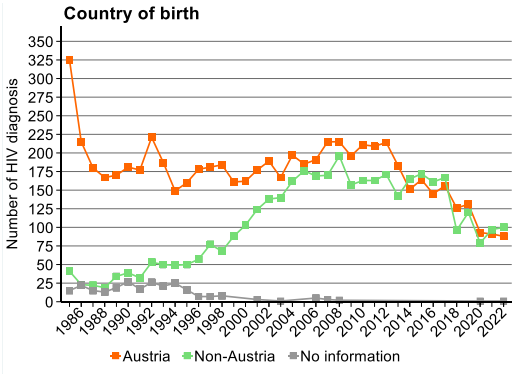
Federal state	Median Age years	≥50 years	≥60 years	≥75 years
Burgenland	51.1	55.7	21.5	1.3
Carinthia	50.8	53.3	22.7	2.4
Lower Austria	52.3	54.5	24.0	4.9
Upper Austria	49.8	49.5	24.7	2.6
Salzburg	49.2	48.6	17.8	2.4
Styria	49.1	47.6	17.4	1.6
Tyrol	53.0	57.6	26.9	3.2
Vorarlberg	51.3	53.5	23.7	5.0
Vienna	49.3	48.4	20.6	2.9
Total	**50.4**	**50.8**	**22.0**	**3.0**

Federal states: Patients with a follow-up in the last 12 months – injecting drug use



5.4 Nationality and country of birth



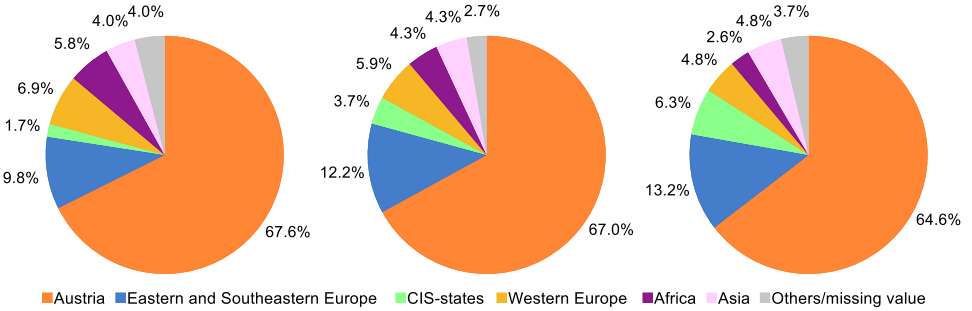


5.4.1 Overview

	BMG	AHIVCOS								
Year	Total	Austria		Low prevalence countries		High prevalence countries		Missing value		Total
1998	313	205	78.85%	29	11.15%	18	6.92%	8	3.08%	260
1999	339	184	73.90%	43	17.27%	20	8.03%	2	0.80%	249
2000	428	196	73.96%	37	13.96%	31	11.70%	1	0.38%	265
2001	402	213	70.07%	49	16.12%	39	12.83%	3	0.99%	304
2002	442	243	74.31%	49	14.98%	35	10.70%	0	0.00%	327
2003	423	197	63.96%	58	18.83%	51	16.56%	2	0.65%	308
2004	470	239	66.57%	62	17.27%	58	16.16%	0	0.00%	359
2005	453	227	62.88%	58	16.07%	73	20.22%	3	0.83%	361
2006	435	217	59.45%	81	22.19%	62	16.99%	5	1.37%	365
2007	515	242	62.37%	79	20.36%	62	15.98%	5	1.29%	388
2008	505	250	60.53%	104	25.18%	55	13.32%	4	0.97%	413
2009	507	227	64.31%	78	22.10%	47	13.31%	1	0.28%	353
2010	487	242	64.71%	100	26.74%	32	8.56%	0	0.00%	374
2011	525	240	64.52%	101	27.15%	30	8.06%	1	0.27%	372
2012	523	245	63.64%	102	26.49%	37	9.61%	1	0.26%	385
2013	481	208	64.00%	93	28.62%	22	6.77%	2	0.62%	325
2014	403	177	56.01%	102	32.28%	35	11.08%	2	0.63%	316
2015	428	190	56.55%	107	31.85%	37	11.01%	2	0.60%	336
2016	447	194	63.40%	84	27.45%	27	8.82%	1	0.33%	306
2017	510	203	62.85%	104	32.20%	16	4.95%	0	0.00%	323
2018	323 / 74*	148	66.67%	64	28.83%	10	4.50%	0	0.00%	222
2019	336 / 94*	169	67.33%	66	26.29%	15	5.98%	1	0.40%	251
2020	283 / 49*	117	67.63%	44	25.43%	8	4.62%	4	2.31%	173
2021	310 / 66*	126	67.02%	51	27.13%	9	4.79%	2	1.06%	188
2022	395 / 78*	122	64.55%	59	31.22%	6	3.17%	2	1.06%	189
2023		13	86.67%	2	13.33%	0	0.00%	0	0.00%	15

* second number tested anonymously since 2018

5.4.2 Nationality: HIV diagnoses between 2020 and 2022

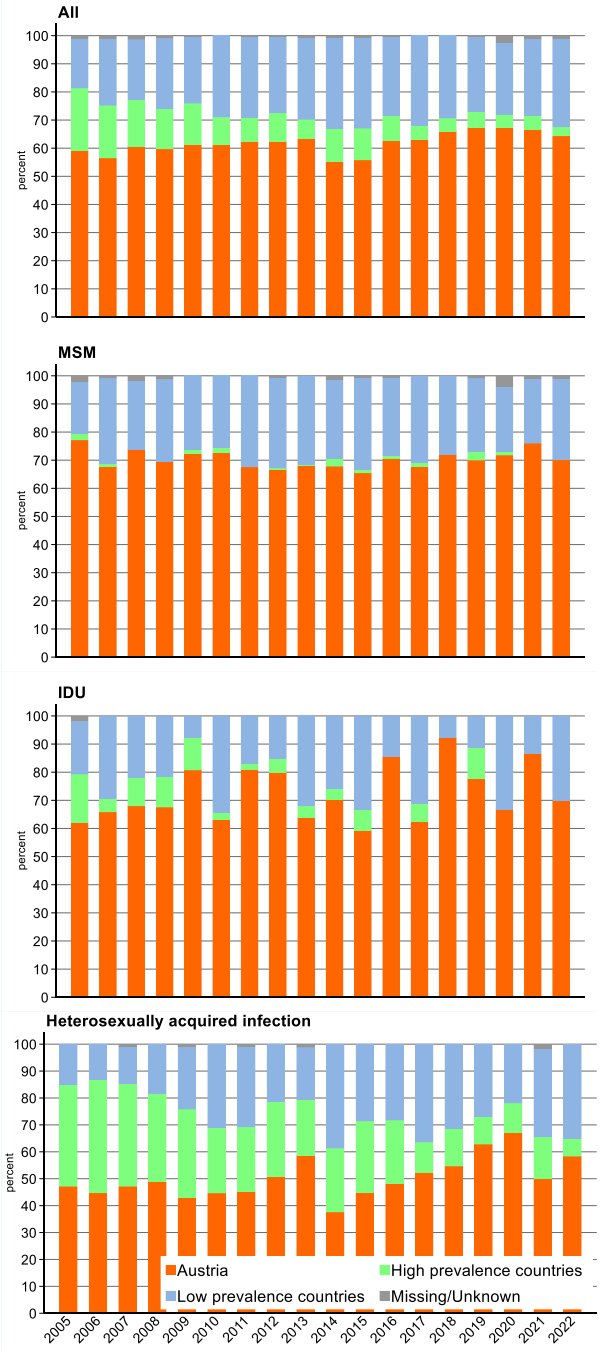


HIV diagnosis 2020 N=173	
Afghanistan	1
Africa	1
Algeria	1
Austria	117
Bosnia and Herzegovina	1
Botswana	1
Brazil	1
Bulgaria	1
Cuba	1
Egypt	1
Ethiopia	1
Gambia	1
Georgia	2
Germany	5
Ghana	1
Guinea-Bissau	1
Hungary	2
India	1
Indonesia	1
Italy	1
Lebanon	1
Netherlands	2
Philippines	1
Poland	3
Portugal	1
Romania	3
Serbia	3
Sierra Leone	1
Somalia	1
Spain	2
Syrian Arab Republic	1
Thailand	1
Turkey	2
Ukraine	3
United Kingdom of Great Britain	1
Unknown	4
Venezuela	1

HIV diagnosis 2021 N=188	
Afghanistan	2
Armenia	1
Austria	126
Bosnia and Herzegovina	1
Brazil	1
Bulgaria	1
China	1
Croatia	2
Egypt	1
Germany	4
Ghana	2
Haiti	1
Hungary	3
Italy	3
Kenya	1
Lithuania	1
Nigeria	1
Philippines	1
Poland	1
Portugal	3
Republic of Korea	1
Romania	6
Russian Federation	1
Saint Vincent and the Grenadines	1
Serbia	2
Slovakia	2
Slovenia	1
Somalia	2
Switzerland	1
Syrian Arab Republic	1
Thailand	2
Turkey	3
Ukraine	5
Unknown	2
Zimbabwe	1

HIV diagnosis 2022 N=189	
Afghanistan	4
Austria	122
Bosnia and Herzegovina	2
Brazil	3
Cameroon	2
Canada	1
Colombia	1
Croatia	3
Czech Republic	1
Egypt	1
France	1
Georgia	1
Greece	2
Hungary	2
Iran	3
Italy	3
Kenya	1
Occupied Palestinian Territor	1
Poland	2
Portugal	1
Romania	5
Russian Federation	2
Serbia	3
Slovakia	3
Slovenia	1
South Africa	1
Spain	1
Switzerland	1
Syrian Arab Republic	1
Turkey	2
Ukraine	10
Unknown	2

5.4.3 Nationality



Low prevalence countries are countries with an HIV infection rate of adults <1%, high prevalence countries are countries with an HIV infection rate of adults ≥1%.

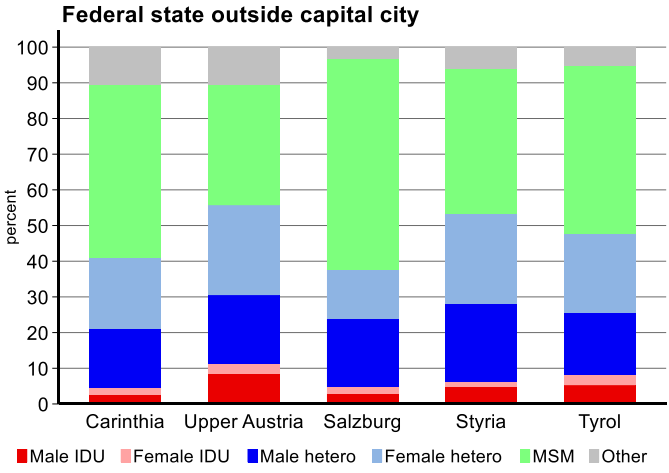
5.4.4 Refugees from Ukraine (up to March 1st 2023)

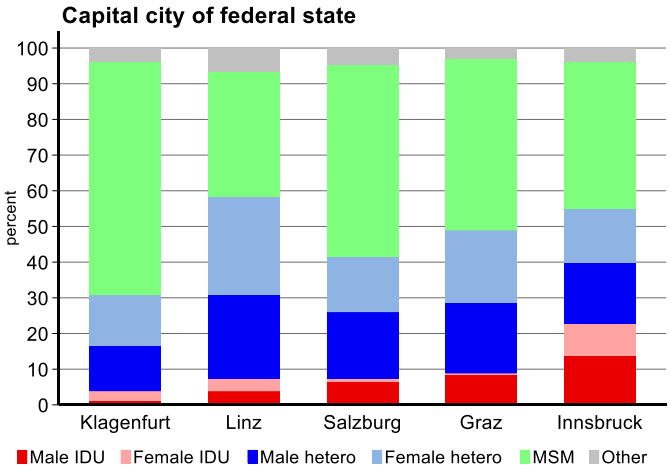
Center	Men	Women	Children	ART	Total
Penzing	5	7	0	12	12
AKH Vienna	7	9	0	16	16
Favoriten	3	3	0	6	6
Linz	8	13	2	22	23
Salzburg	1	3	0	4	4
Innsbruck	1	3	3	7	7
Feldkirch	2	1	0	3	3
Graz	3	9	0	11	12
Total	**30**	**48**	**5**	**81**	**83**

5.5 Residence

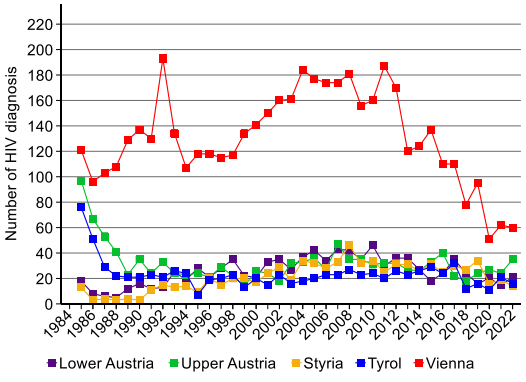
5.5.1 Population size of area of residence

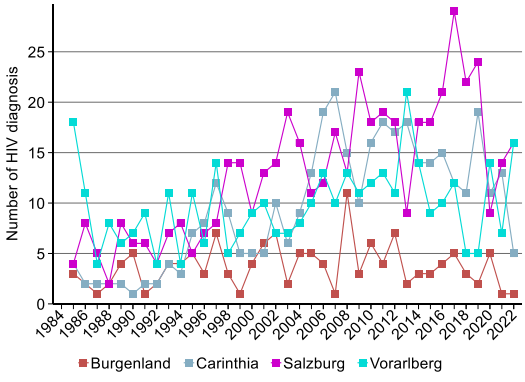
	Living with HIV/AIDS						Deceased					
	< 100 000		≥ 100 000		> 1 million		< 100 000		≥ 100 000		> 1 million	
	N	(% women)	N	(% women)	N	(% women)	N	(% women)	N	(% women)	N	(% women)
B	109	33.03%	**0**		0		21	19.05%	**0**		0	
C	237	24.05%	**78**	16.67%	0		26	19.23%	8	12.50%	0	
LA	767	26.60%	**0**		0		172	18.60%	**0**		0	
UA	508	30.31%	314	32.80%	0		182	30.22%	199	31.66%	0	
S	210	16.19%	200	17.00%	0		29	17.24%	44	11.36%	0	
St	413	27.85%	272	21.69%	0		60	25.00%	43	18.60%	0	
T	399	25.81%	211	25.59%	0		119	21.01%	134	25.37%	0	
Vo	267	26.22%	**0**		**0**		70	27.14%	**0**	12.50%	0	
Vie	0		**0**		3472	21.69%	**0**		**0**		1519	20.14%





5.5.2 Residence: Federal states

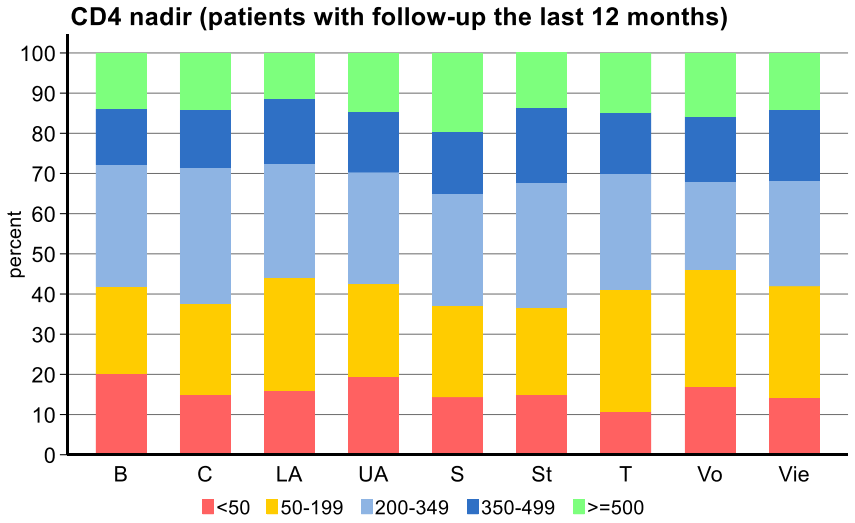




5.6 Stage of HIV disease

5.6.1 Lowest ever measured CD4 cell count

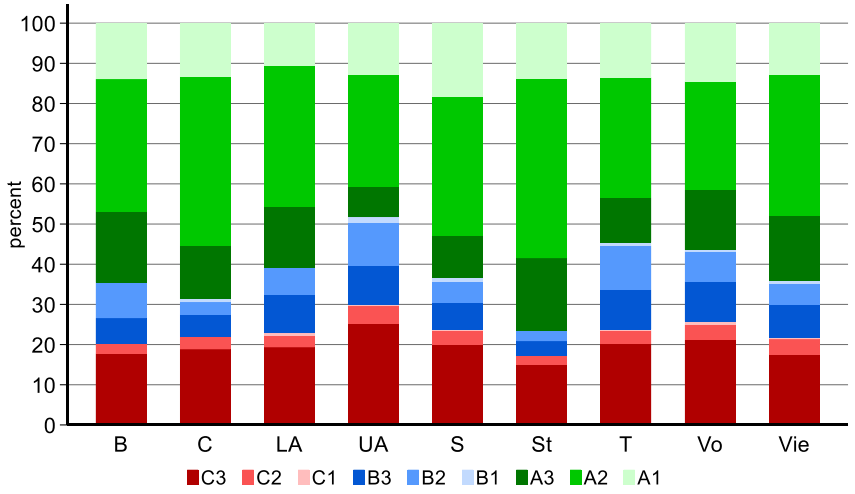
The median of the lowest CD4 cell count ever measured („CD4 nadir“) in the patients with follow-up in the last 12 months is 243/µl.



5.6.2 Proportion of Patients with AIDS

The classification of the HIV infection according to CDC puts patients in one of three clinical categories (A, B, C) and one of three CD4 cell count categories (1, 2, 3).

CD4 count		**A** Asymptomatic	**B** Non-AIDS defining conditions	**C** AIDS
1	≥ 500/µl	**A1**	**B1**	**C1**
2	200-499/µl	**A2**	**B2**	**C2**
3	< 200/µl	**A3**	**B3**	**C3**

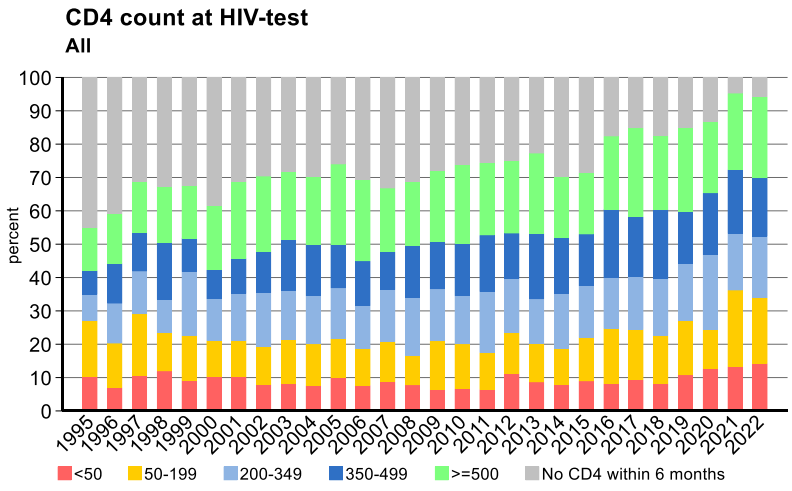


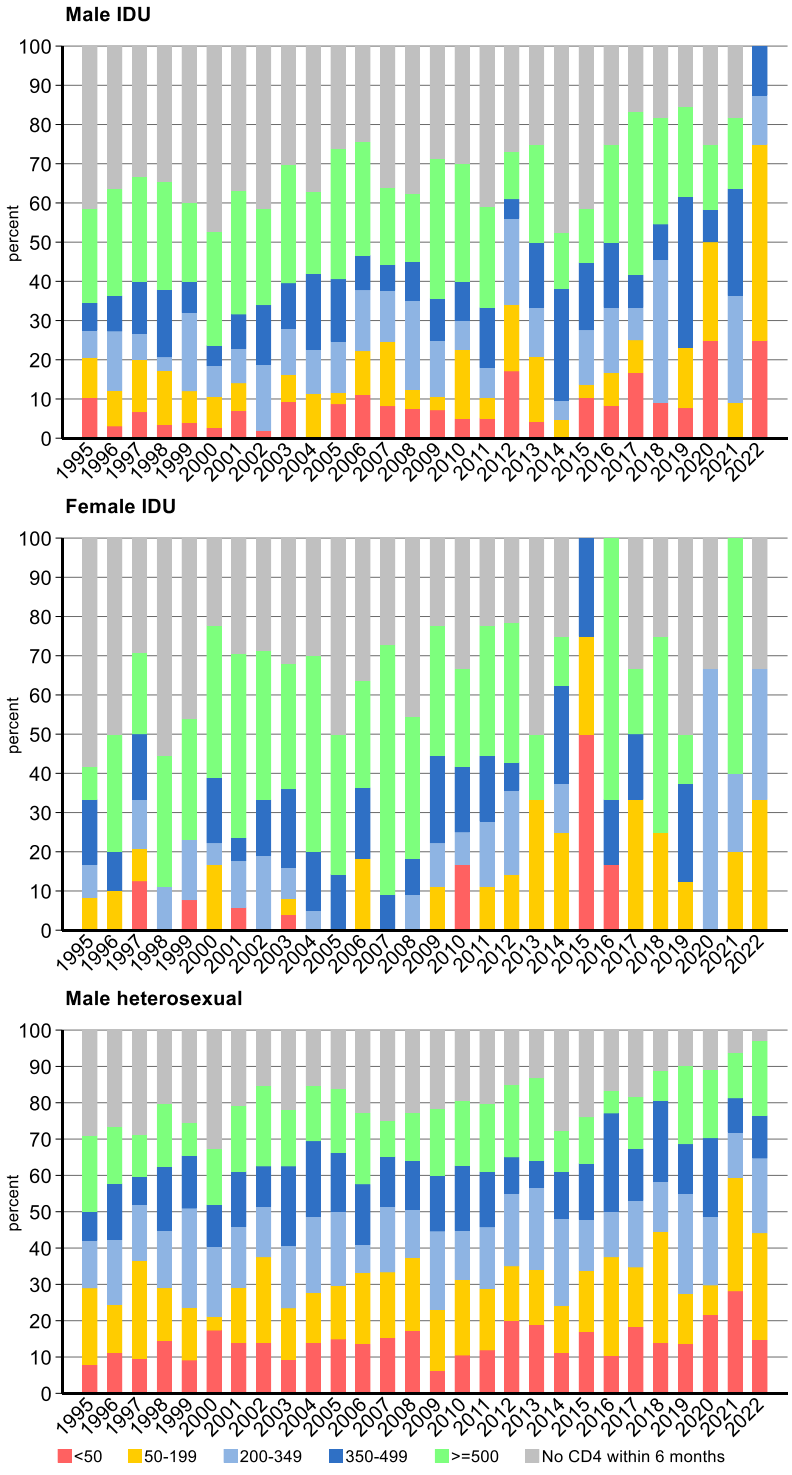
6 Diagnosis of HIV and presentation to an HIV centre

6.1 Presentation to an HIV centre

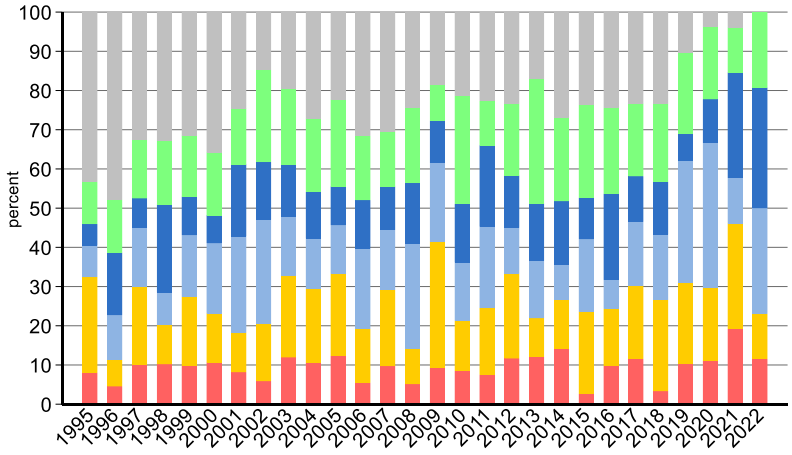
Austria has one of the highest rates of HIV tests in Europe (more than 75 tests per year per 1000 population). Nevertheless, a substantial portion of the patients (>40%) are diagnosed late (CD4 cell count <350/µl).

Year of HIV diagnosis	Time between HIV test and first CD4 cell count measurement in months						First CD4 cell count (all patients, 445 missing)		
	All Patients			IDU					
	N	Median	90 Per	N	Median	90 Per	Median	Quartiles	
1985	381	64.5	181.1	199	50.1	133.4	313.5	119.0	545.0
1990	247	18.6	107.3	59	5.3	62.2	255.0	50.0	529.0
1995	226	2.6	96.7	39	4.2	101.4	238.5	86.0	473.0
2000	265	1.1	135.9	56	2.3	92.0	364.0	156.0	566.0
2005	361	0.7	87.2	83	1.1	48.3	352.5	165.0	536.0
2006	365	0.8	74.0	56	1.1	51.1	371.0	193.0	579.0
2007	388	0.7	81.5	71	1.7	52.9	327.0	160.0	551.0
2008	413	0.8	78.5	51	1.7	88.3	404.0	228.0	570.0
2009	353	0.6	74.7	37	0.9	87.8	343.0	191.0	550.0
2010	374	0.5	67.1	52	0.7	62.8	398.0	200.0	643.0
2011	372	0.6	52.1	55	1.9	38.8	380.0	221.0	565.0
2012	385	0.6	46.8	55	1.0	47.0	362.5	164.5	581.5
2013	325	0.5	36.5	29	1.5	40.9	400.5	206.0	623.0
2014	316	0.7	46.6	29	2.0	55.7	382.0	203.0	588.0
2015	336	0.5	29.4	33	1.6	38.5	378.0	179.0	566.0
2016	306	0.4	13.0	17	0.7	7.7	369.0	163.5	563.5
2017	323	0.4	10.7	18	1.3	15.4	389.0	186.0	582.0
2018	222	0.4	26.9	14	0.5	38.9	377.0	214.0	603.0
2019	251	0.4	12.9	21	1.9	12.0	363.5	162.0	576.0
2020	173	0.4	9.1	15	2.2	33.4	342.0	184.0	552.0
2021	188	0.4	1.9	15	0.4	2.7	289.0	108.0	510.0
2022	189	0.3	1.9	11	0.5	2.4	315.5	119.0	524.0
2023	15	0.2	0.6	1	0.0	0.0	469.0	123.0	686.0

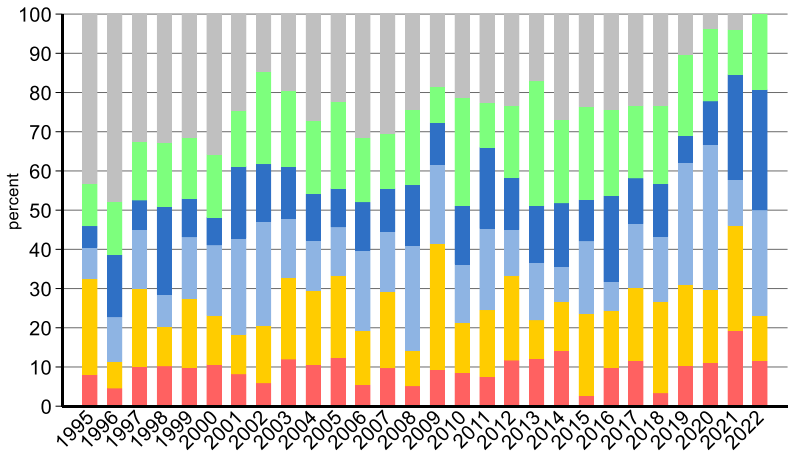



Male IDU
Female IDU
Male heterosexual
percent
<50
50-199
200-349
350-499
>=500
No CD4 within 6 months

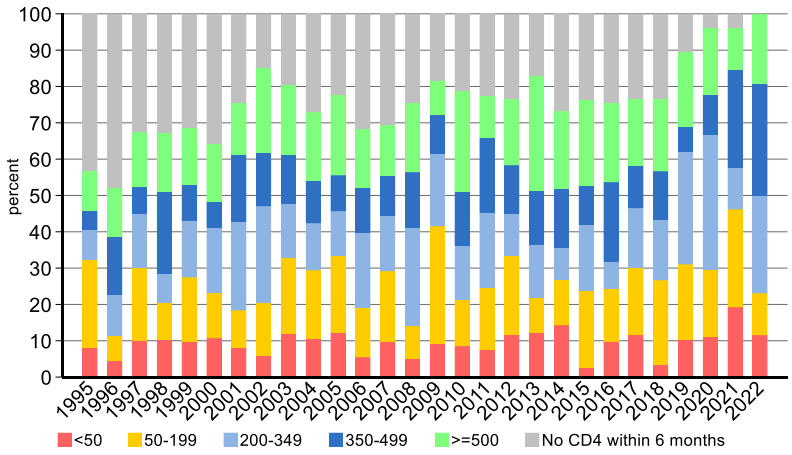
Female heterosexual



MSM



Other



6.2 Patients diagnosed since 2001

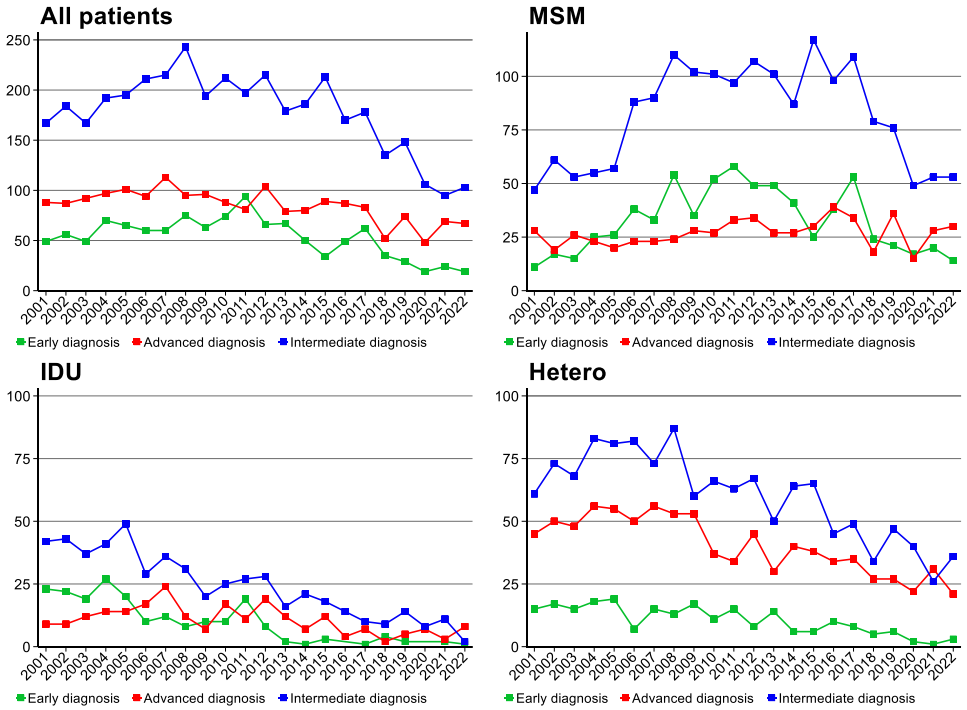
6.2.1 Frequency of early and late diagnoses

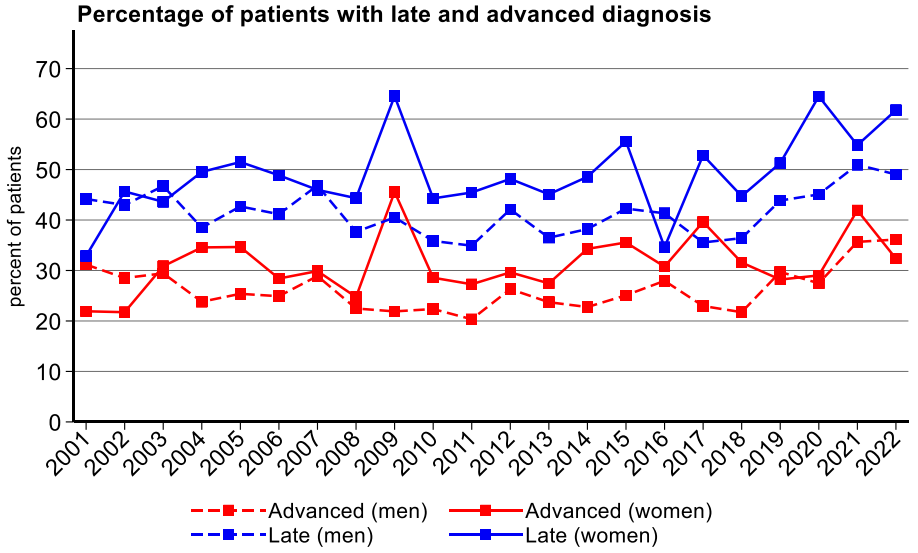
“Early” diagnosis or **„recent“ infection** is defined as: acute HIV infection (westernblot pattern or antigen/HIV RNA combined with clinical presentation) or documented seroconversion with negative HIV test not more than 3 years before the first positive test.

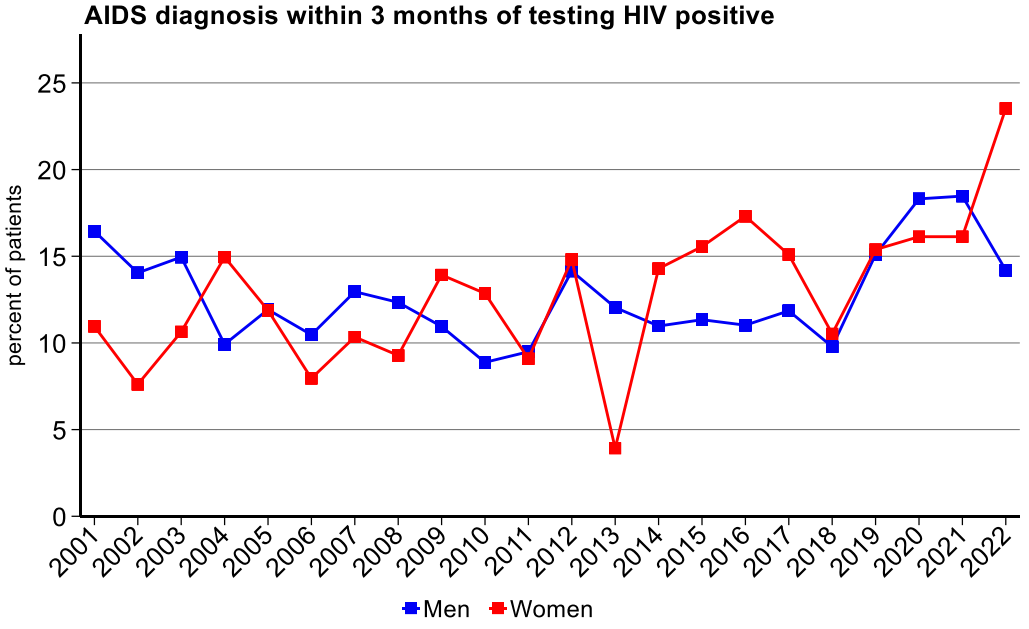
“Late” diagnosis is defined as: CD4 cell count below 350 at time of HIV diagnosis and/or AIDS within 3 months of HIV diagnosis

“Advanced” diagnosis is defined as: CD4 cell count below 200 at time of HIV diagnosis and/or AIDS within 3 months of HIV diagnosis

“Intermediate” diagnosis: CD4 cell count > 200, however not early diagnosed




Percentage of patients with late and advanced diagnosis
percent of patients
0
10
20
30
40
50
60
70
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Advanced (men)
Advanced (women)
Late (men)
Late (women)


AIDS diagnosis within 3 months of testing HIV positive
percent of patients
0
5
10
15
20
25
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Men
Women

6.2.2 Factors associated with an „early“ diagnosis in patients diagnosed since 2001

“Early” diagnosis or „recent“ infection is defined as: acute HIV infection (westernblot pattern or antigen/HIV RNA combined with clinical presentation) or documented seroconversion with negative HIV test not more than 3 years before the first positive test.

All centres	1171	6953	16.84%	**Univariable logistic Regression**			**Multivariable logistic Regression**		
	Frequencies		**%**	**OR**	**[95% CI]**	**p value**	**OR**	**[95% CI]**	**p value**
Demographic characteristics									
Age at time of HIV diagnosis									
< 30 years	475	2400	19.79%	1.91	[1.52,2.40]	0.000	1.90	[1.49,2.43]	0.000
30-50 years	594	3661	16.23%	1.50	[1.20,1.88]	0.000	1.43	[1.13,1.80]	0.003
≥ 50	102	892	11.43%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
HIV transmission category									
Male IDU	139	731	19.02%	0.78	[0.64,0.96]	0.018	0.77	[0.62,0.95]	0.014
Female IDU	65	237	27.43%	1.26	[0.94,1.70]	0.128	1.06	[0.78,1.45]	0.696
Male heterosexual	119	1287	9.25%	0.34	[0.28,0.42]	0.000	0.39	[0.32,0.49]	0.000
Female heterosexual	112	1155	9.70%	0.36	[0.29,0.44]	0.000	0.42	[0.33,0.53]	0.000
Other	19	436	4.36%	0.15	[0.10,0.24]	0.000	0.18	[0.11,0.28]	0.000
MSM	717	3107	23.08%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Federal state									
Carinthia	29	291	9.97%	0.63	[0.43,0.94]	0.024			
Upper Austria	118	658	17.93%	1.25	[1.00,1.56]	0.050			
Salzburg	91	375	24.27%	1.83	[1.42,2.37]	0.000			
Styria	92	621	14.81%	0.99	[0.78,1.27]	0.965			
Tyrol	148	469	31.56%	2.64	[2.12,3.28]	0.000			
Other federal states	188	1005	18.71%	1.32	[1.09,1.59]	0.004			
Missing	0	8	0.00%	1.00	[1.00,1.00]	.			
Foreign countries	60	536	11.19%	0.72	[0.54,0.96]	0.025			
Vienna	445	2990	14.88%	1.00	[1.00,1.00]	.			
Population size of area of residence									
Missing value									
< 100 000	181	942	19.21%	1.36	[1.18,1.56]	0.000	1.68	[1.45,1.94]	0.000
≥ 100 000	527	2792	18.88%	1.39	[1.15,1.68]	0.001	1.77	[1.45,2.16]	0.000
> 1 million	457	3126	14.62%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Nationality									
Missing value	5	41	12.20%	0.53	[0.21,1.36]	0.188	0.56	[0.21,1.46]	0.235
Low prevalence countries	207	1697	12.20%	0.53	[0.45,0.63]	0.000	0.53	[0.45,0.63]	0.000
High prevalence countries	39	766	5.09%	0.21	[0.15,0.29]	0.000	0.30	[0.21,0.42]	0.000
Austria	920	4449	20.68%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Calendar period of HIV test									
2005-2008	260	1527	17.03%	0.98	[0.81,1.20]	0.871	0.96	[0.78,1.18]	0.687
2009-2012	297	1484	20.01%	1.20	[0.99,1.45]	0.063	1.09	[0.89,1.33]	0.420
2013-2016	200	1283	15.59%	0.89	[0.72,1.09]	0.253	0.79	[0.63,0.98]	0.033
≥ 2017	190	1361	13.96%	0.78	[0.63,0.96]	0.019	0.67	[0.53,0.83]	0.000
2001-2004	224	1298	17.26%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.

6.2.3 Factors associated with a „late“ diagnosis in patients diagnosed since 2001

“Late” diagnosis is defined as: CD4 cell count below 350 at time of HIV diagnosis and/or AIDS within 3 months of HIV diagnosis

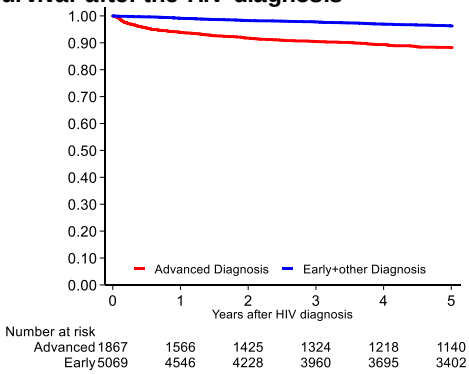
All centres	2956	6953	42.51%	**Univariable logistic Regression**			**Multivariable logistic Regression**		
	Frequencies		**%**	**OR**	**[95% CI]**	**p value**	**OR**	**[95% CI]**	**p value**
Demographic characteristics									
Age at time of HIV diagnosis									
< 30 years	753	2400	31.37%	0.32	[0.27,0.37]	0.000	0.32	[0.27,0.39]	0.000
30-50 years	1677	3661	45.81%	0.59	[0.51,0.68]	0.000	0.61	[0.52,0.71]	0.000
≥ 50	526	892	58.97%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
HIV transmission category									
Male IDU	300	731	41.04%	1.37	[1.16,1.61]	0.000	1.51	[1.27,1.79]	0.000
Female IDU	65	237	27.43%	0.74	[0.55,1.00]	0.047	0.93	[0.69,1.26]	0.634
Male heterosexual	728	1287	56.57%	2.55	[2.24,2.92]	0.000	2.04	[1.77,2.35]	0.000
Female heterosexual	594	1155	51.43%	2.08	[1.81,2.38]	0.000	1.87	[1.61,2.18]	0.000
Other	220	436	50.46%	2.00	[1.63,2.45]	0.000	1.79	[1.45,2.21]	0.000
MSM	1049	3107	33.76%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Federal state									
Carinthia	139	291	47.77%	1.28	[1.01,1.63]	0.044			
Upper Austria	302	658	45.90%	1.19	[1.00,1.41]	0.046			
Salzburg	154	375	41.07%	0.98	[0.79,1.21]	0.832			
Styria	276	621	44.44%	1.12	[0.94,1.33]	0.198			
Tyrol	177	469	37.74%	0.85	[0.70,1.04]	0.111			
Other federal states	452	1005	44.98%	1.15	[0.99,1.32]	0.064			
Missing	1	8	12.50%	0.20	[0.02,1.63]	0.133			
Foreign countries	210	536	39.18%	0.90	[0.75,1.09]	0.287			
Vienna	1245	2990	41.64%	1.00	[1.00,1.00]	.			
Population size of area of residence									
Missing value	31	93	33.33%	0.71	[0.46,1.09]	0.120	0.62	[0.39,0.98]	0.039
< 100 000	1251	2792	44.81%	1.15	[1.04,1.27]	0.009	1.00	[0.90,1.12]	0.950
≥ 100 000	379	942	40.23%	0.95	[0.82,1.10]	0.514	0.84	[0.72,0.98]	0.031
> 1 million	1295	3126	41.43%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Nationality									
Missing/Unknown	8	41	19.51%	0.35	[0.16,0.76]	0.008	0.37	[0.17,0.82]	0.015
Low prevalence countries	680	1697	40.07%	0.96	[0.86,1.08]	0.498	1.05	[0.93,1.19]	0.398
High prevalence countries	443	766	57.83%	1.97	[1.69,2.30]	0.000	1.73	[1.45,2.06]	0.000
Austria	1825	4449	41.02%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Calendar period of HIV test									
2005-2008	663	1527	43.42%	1.01	[0.87,1.17]	0.883	1.02	[0.87,1.19]	0.796
2009-2012	607	1484	40.90%	0.91	[0.78,1.06]	0.232	0.96	[0.82,1.13]	0.618
2013-2016	522	1283	40.69%	0.90	[0.77,1.06]	0.206	0.95	[0.80,1.12]	0.541
≥ 2017	604	1361	44.38%	1.05	[0.90,1.23]	0.521	1.06	[0.90,1.25]	0.481
2001-2004	560	1298	43.14%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.

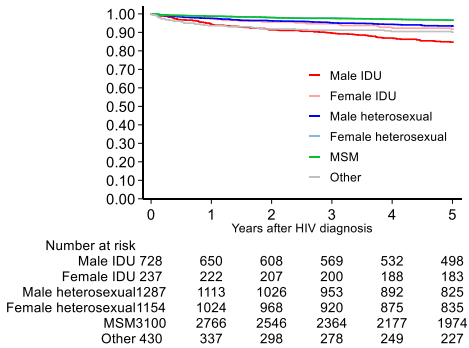
6.2.4 Factors associated with mortality in patients diagnosed since 2001

Date of censoring: last contact with the HIV centre (31 missing)

All centres	755	6953	10.86%	Univariable Cox Regression			Multivariable Cox Regression		
	Frequencies		%	HR	[95% CI]	p value	HR	[95% CI]	p value
Demographic characteristics									
Age at time of HIV diagnosis									
< 30 years	190	2400	7.92%	0.25	[0.21,0.31]	0.000	0.18	[0.14,0.23]	0.000
30-50 years	352	3661	9.61%	0.33	[0.28,0.39]	0.000	0.28	[0.23,0.34]	0.000
≥ 50	213	892	23.88%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
HIV transmission category									
Male IDU	211	731	28.86%	3.85	[3.17,4.69]	0.000	4.30	[3.50,5.29]	0.000
Female IDU	62	237	26.16%	3.17	[2.38,4.23]	0.000	3.82	[2.82,5.17]	0.000
Male heterosexual	164	1287	12.74%	1.79	[1.46,2.21]	0.000	1.22	[0.98,1.51]	0.077
Female heterosexual	67	1155	5.80%	0.74	[0.56,0.97]	0.031	0.74	[0.55,0.99]	0.040
Other	57	436	13.07%	2.36	[1.76,3.17]	0.000	1.94	[1.43,2.63]	0.000
MSM	194	3107	6.24%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Population size of area of residence									
Missing value	6	93	6.45%	0.88	[0.39,1.98]	0.764	1.16	[0.50,2.70]	0.729
< 100 000	233	2792	8.35%	0.58	[0.50,0.68]	0.000	0.63	[0.53,0.74]	0.000
≥ 100 000	80	942	8.49%	0.58	[0.46,0.74]	0.000	0.73	[0.57,0.93]	0.012
> 1 million	436	3126	13.95%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Nationality									
Missing/Unknown	4	41	9.76%	0.94	[0.35,2.51]	0.900	1.09	[0.39,3.07]	0.866
Low prevalence countries	93	1697	5.48%	0.49	[0.40,0.61]	0.000	0.66	[0.53,0.82]	0.000
High prevalence countries	46	766	6.01%	0.45	[0.33,0.60]	0.000	0.74	[0.53,1.02]	0.063
Austria	612	4449	13.76%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Stage of disease									
Advanced diagnosis									
Yes	323	1868	17.29%	2.18	[1.88,2.51]	0.000	1.98	[1.71,2.30]	0.000
No	432	5085	8.50%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Calendar period of HIV test									
2005-2008	213	1527	13.95%	0.76	[0.63,0.91]	0.003	0.85	[0.71,1.03]	0.093
2009-2012	144	1484	9.70%	0.69	[0.56,0.85]	0.000	0.76	[0.62,0.95]	0.013
2013-2016	70	1283	5.46%	0.55	[0.42,0.72]	0.000	0.63	[0.48,0.83]	0.001
≥ 2017	35	1361	2.57%	0.47	[0.33,0.68]	0.000	0.51	[0.35,0.74]	0.000
2001-2004	293	1298	22.57%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.

Survival after the HIV diagnosis

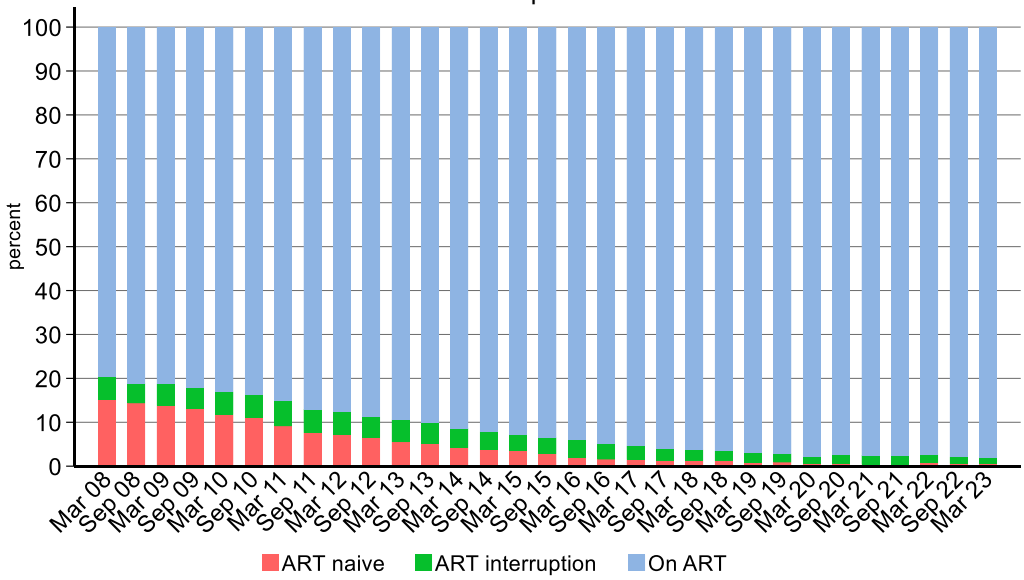




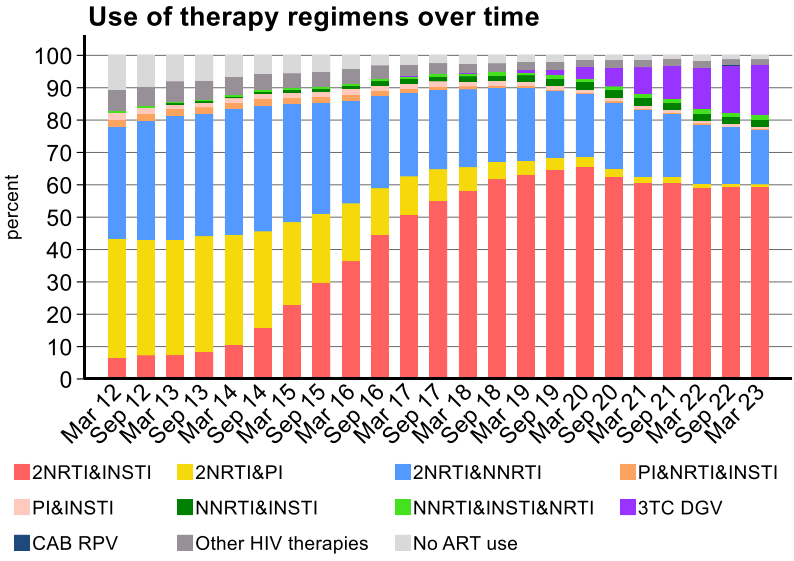
7 Antiretroviral therapy (ART)

7.1 Patients currently in care regarding treatment status

On March 1st, 2023 4577 (98.8%) patients were on antiretroviral therapy in the 9 HIV treatment centres. Of the 54 patients not on treatment on March 1st, 2023, 25 had received antiretroviral treatment at an earlier point in time.

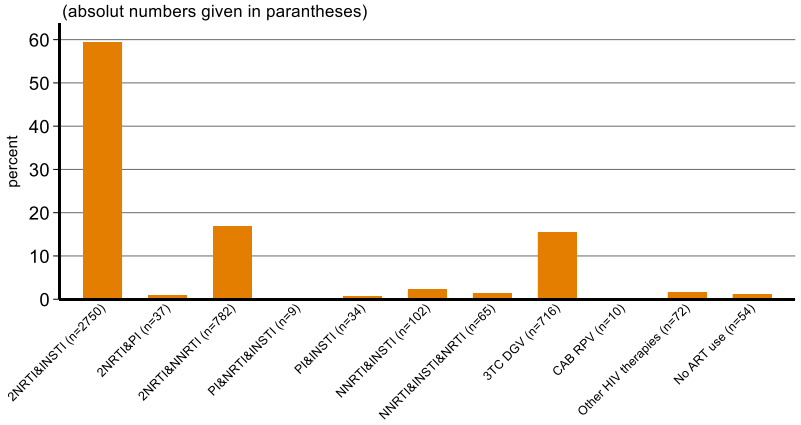


7.2 Regimens of antiretroviral therapy

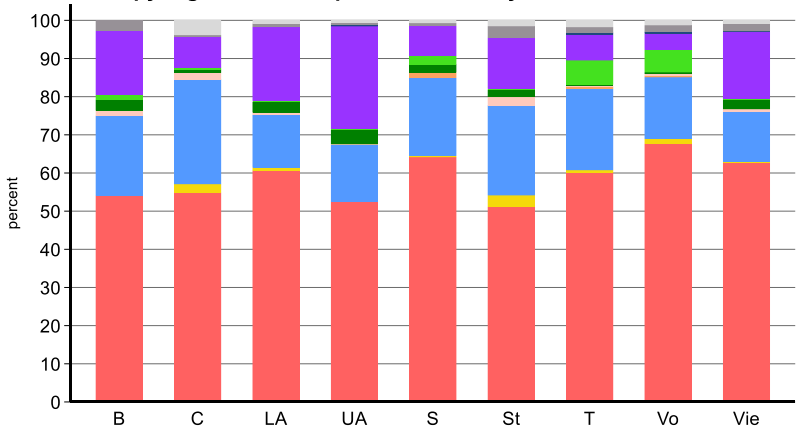


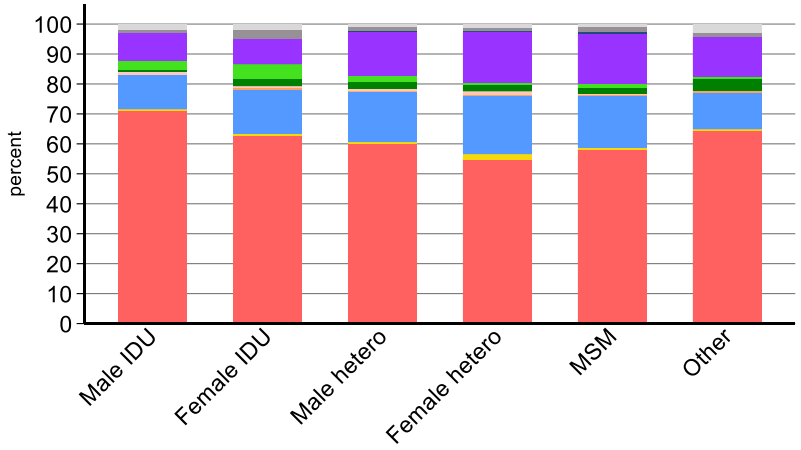
Proportion of therapy regimens on March 1st 2023

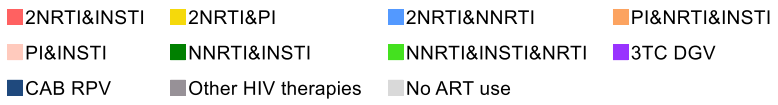
(absolut numbers given in parantheses)



Therapy regimens in the patients currently in care

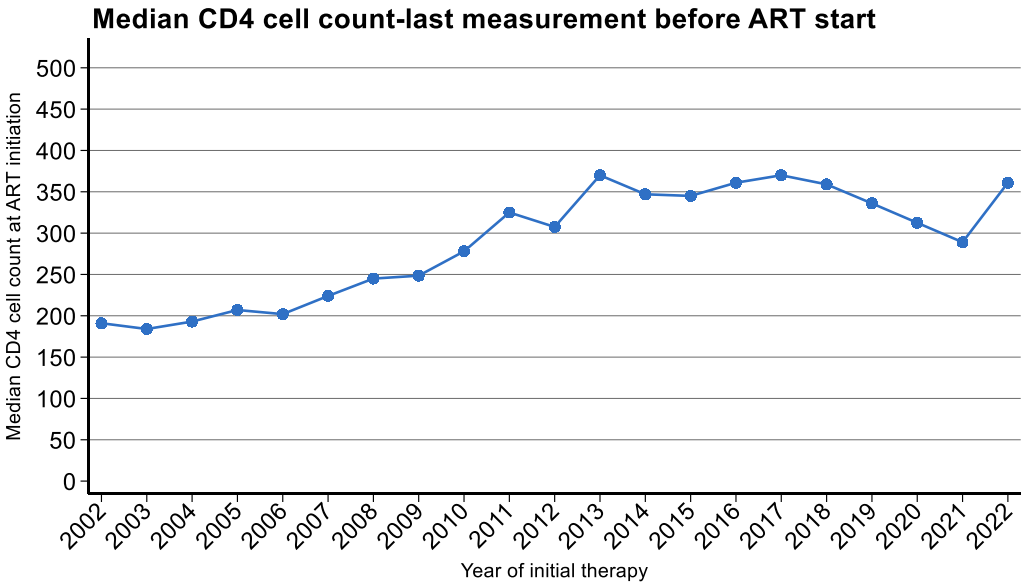




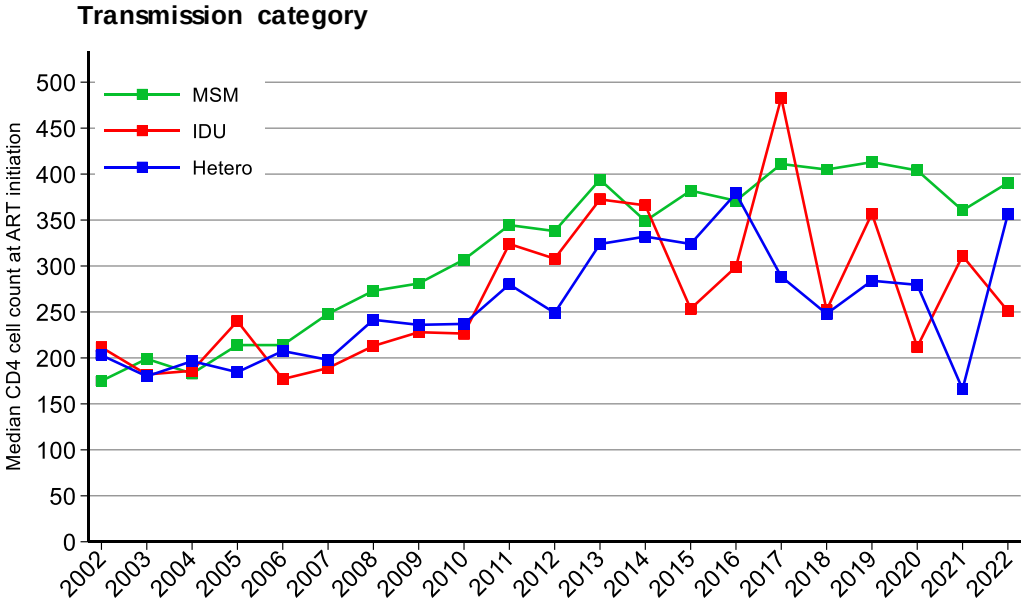


7.3 CD4 cell counts at initiation of ART

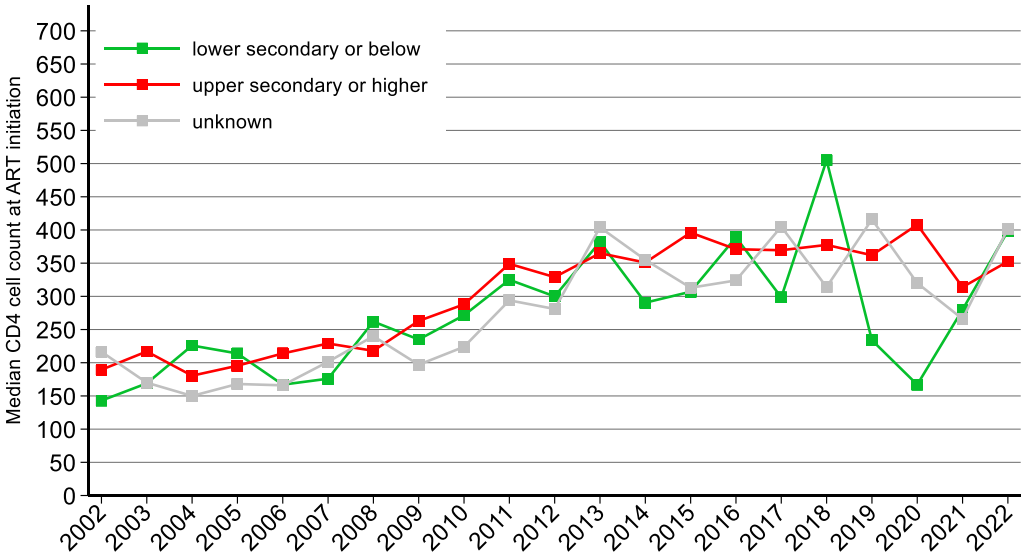
7.3.1 CD4 cell counts at initiation of ART



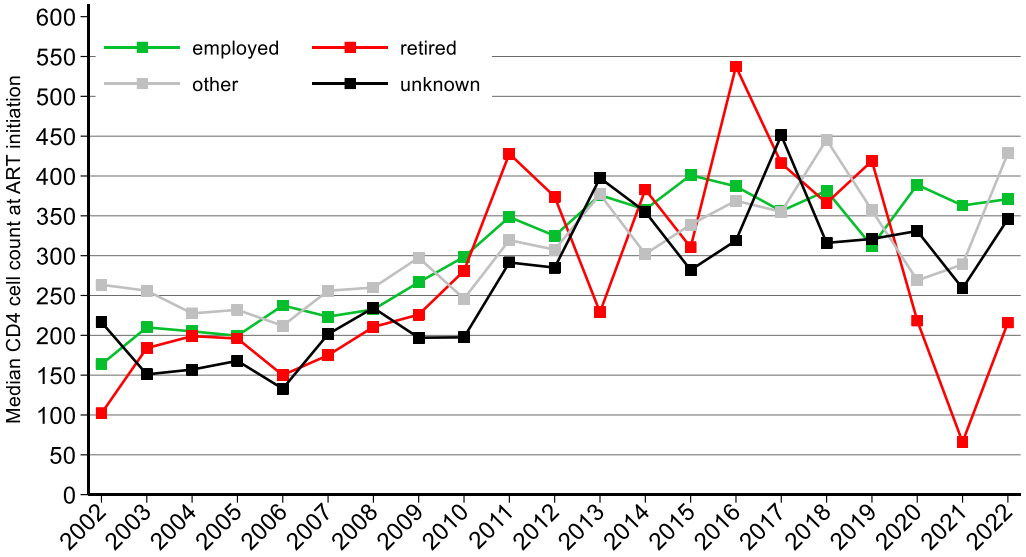
7.3.2 Median CD4 count at ART initiation



Level of education

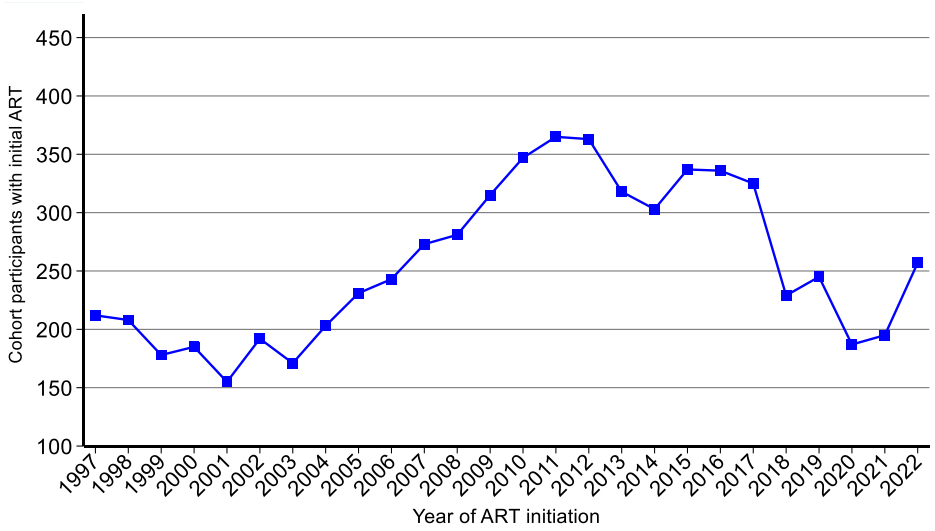


Status of employment



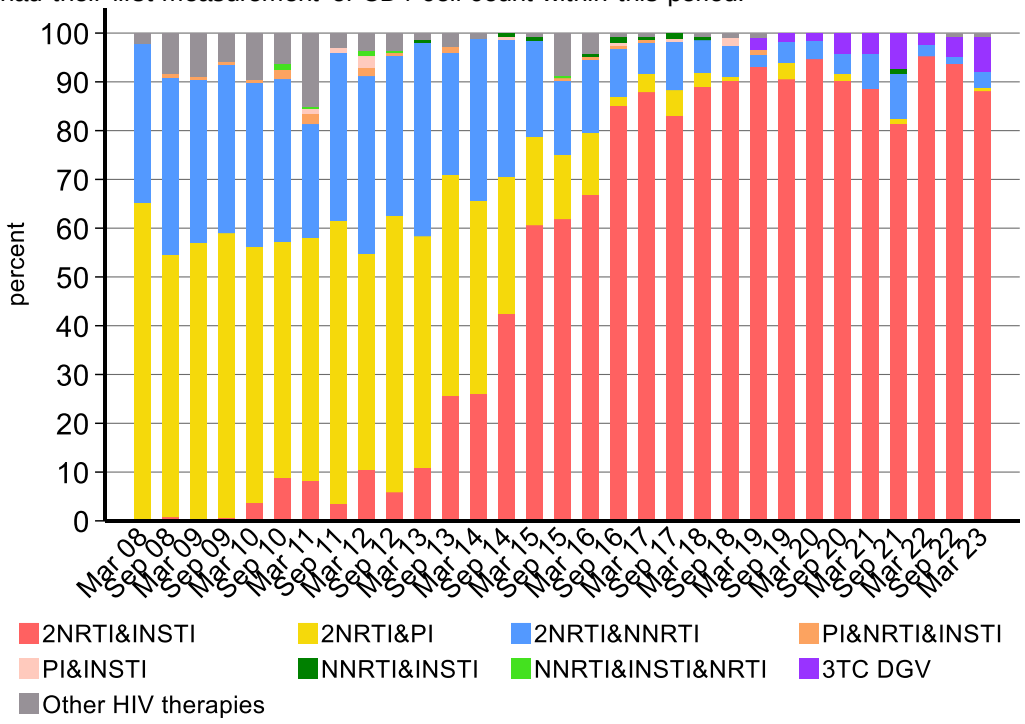
7.4 Initial therapy

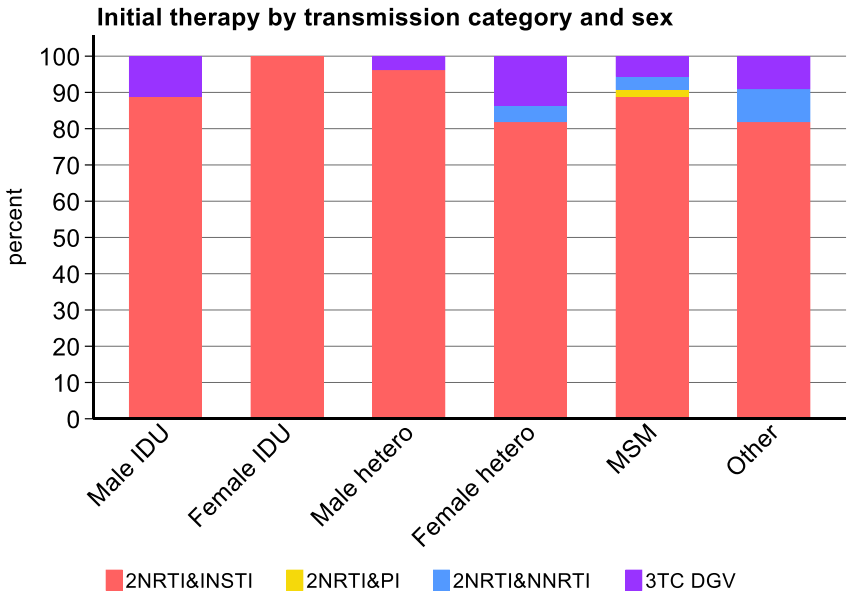
7.4.1 Number of persons who started ART in the respective year



7.4.2 Regimens of the initial therapy

After September 1st, 2022, 126 patients started antiretroviral therapy. 126 of them also had their first measurement of CD4 cell count within this period.




Initial therapy by transmission category and sex
percent
100
90
80
70
60
50
40
30
20
10
0
Male IDU
Female IDU
Male hetero
Female hetero
MSM
Other
2NRTI&INSTI
2NRTI&PI
2NRTI&NNRTI
3TC DGV

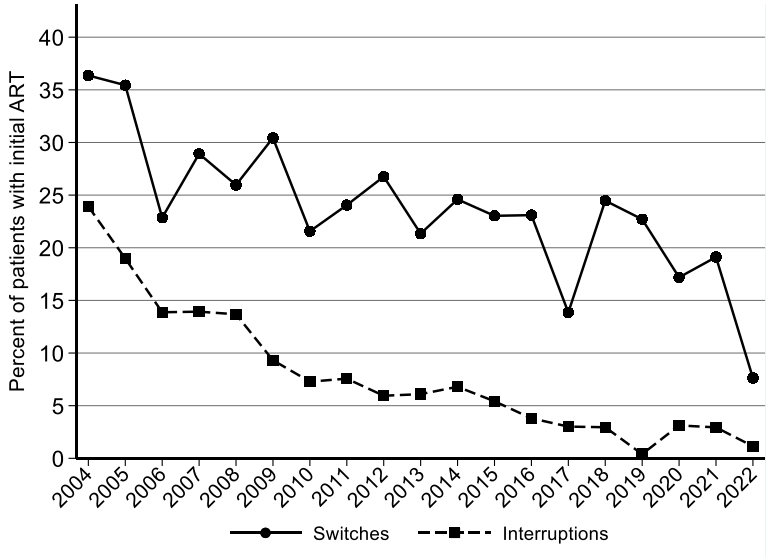
7.5 ART switches and interruptions

7.5.1 Switches and interruptions of ART during the first year of treatment

7.5.1.1 All switches, excluding switches from TDF to TAF containing regimens

Percentage of patients with ART switches and interruptions during the first year of treatment

Year of ART initiation	% of patients with ART switches	% of patients with ART interruptions
2004	36.4	23.9
2005	35.4	19.0
2006	22.9	13.9
2007	28.9	13.9
2008	26.0	13.7
2009	30.4	9.3
2010	21.6	7.3
2011	24.1	7.6
2012	26.8	5.9
2013	21.3	6.1
2014	24.6	6.8
2015	23.0	5.4
2016	23.1	3.8
2017	13.9	3.0
2018	24.5	3.0
2019	22.7	0.4
2020	17.2	3.1
2021	19.1	2.9
2022	7.6	1.1

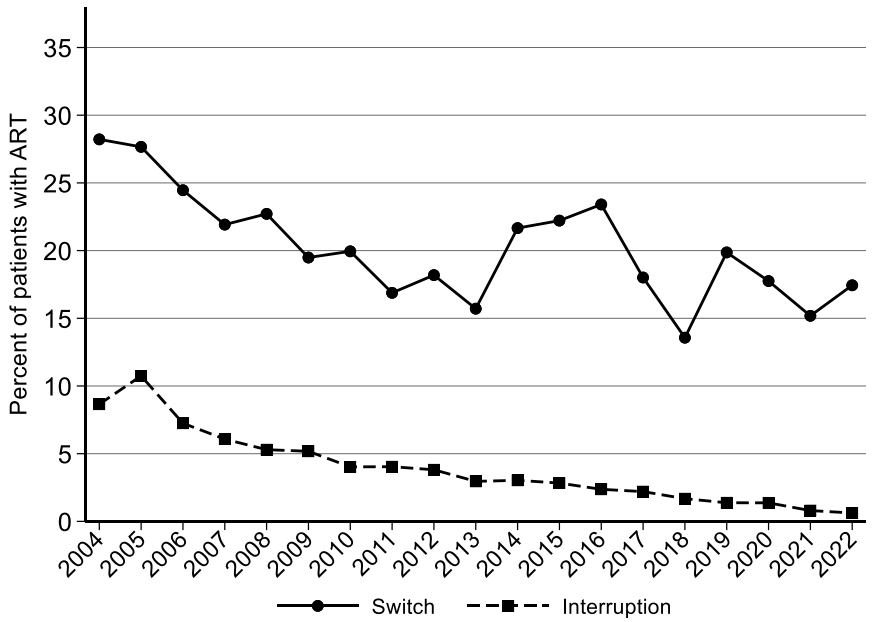


7.5.2 ART switches and interruptions per calendar year

7.5.2.1 All switches, excluding switches from TDF to TAF containing regimens

Percentage of patients with ART switches and interruptions in the respective year

Year of ART initiation	% of patients with ART switches	% of patients with ART interruptions
2004	28.2	8.7
2005	27.7	10.7
2006	24.5	7.2
2007	21.9	6.1
2008	22.7	5.3
2009	19.5	5.2
2010	19.9	4.0
2011	16.9	4.0
2012	18.2	3.8
2013	15.7	3.0
2014	21.7	3.0
2015	22.2	2.8
2016	23.4	2.4
2017	18.0	2.2
2018	13.6	1.7
2019	19.9	1.4
2020	17.7	1.4
2021	15.2	0.8
2022	17.4	0.6



7.5.3 Risk factors for treatment switches during the first year of treatment, excluding switches from TDF to TAF containing regimens

	Switch	All		Univariable logistic regression			Multivariable logistic regression		
	1297	5501	23.58%	OR	[95% CI]	p value	OR	[95% CI]	p value
HIV transmission category									
Male IDU	127	582	21.82%	1.03	[0.83,1.28]	0.780	0.90	[0.72,1.13]	0.383
Female IDU	42	209	20.10%	0.93	[0.65,1.32]	0.684	0.84	[0.59,1.21]	0.348
Male heterosexual	232	1019	22.77%	1.09	[0.91,1.30]	0.337	0.91	[0.76,1.09]	0.323
Female heterosexual	291	921	31.60%	1.71	[1.44,2.02]	0.000	1.54	[1.29,1.83]	0.000
Other	75	281	26.69%	1.35	[1.02,1.78]	0.038	1.23	[0.92,1.65]	0.161
MSM	530	2489	21.29%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Age at baseline									
< 30 years	304	1356	22.42%	0.83	[0.68,1.01]	0.062	0.85	[0.69,1.05]	0.125
30-50 years	758	3235	23.43%	0.88	[0.74,1.04]	0.135	0.86	[0.72,1.03]	0.096
≥ 50	235	910	25.82%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
AIDS at baseline									
Yes	287	823	34.87%	1.94	[1.66,2.28]	0.000			
No	1010	4678	21.59%	1.00	[1.00,1.00]	.			
CD4 count at baseline									
< 50	207	620	33.39%	2.19	[1.79,2.68]	0.000	2.05	[1.66,2.54]	0.000
50-199	302	1072	28.17%	1.71	[1.44,2.04]	0.000	1.56	[1.30,1.88]	0.000
200-349	303	1407	21.54%	1.20	[1.01,1.42]	0.039	1.08	[0.91,1.29]	0.380
Missing	125	471	26.54%	1.58	[1.25,1.99]	0.000	1.66	[1.31,2.11]	0.000
≥ 350	360	1931	18.64%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
HIV-RNA at baseline									
10.000-99.999	376	1901	19.78%	0.92	[0.76,1.11]	0.383			
≥ 100.000	528	1946	27.13%	1.39	[1.15,1.67]	0.001			
Missing	190	695	27.34%	1.40	[1.12,1.76]	0.004			
≤ 9.999	203	959	21.17%	1.00	[1.00,1.00]	.			
Nationality									
High prevalence countries	200	701	28.53%	1.35	[1.13,1.61]	0.001			
Low prevalence countries	1097	4800	22.85%	1.00	[1.00,1.00]	.			
Population size of area of residence									
Rural areas	531	2220	23.92%	1.11	[0.97,1.27]	0.123	1.14	[0.99,1.31]	0.078
Capital cities	209	753	27.76%	1.36	[1.13,1.64]	0.001	1.45	[1.20,1.75]	0.000
Vienna	557	2528	22.03%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Year of ART Initiation									
2004-2007	297	971	30.59%	2.71	[2.09,3.51]	0.000	2.69	[2.05,3.51]	0.000
2008-2011	338	1334	25.34%	2.09	[1.62,2.69]	0.000	2.27	[1.75,2.94]	0.000
2012-2015	330	1376	23.98%	1.94	[1.51,2.50]	0.000	2.14	[1.65,2.76]	0.000
2016-2019	240	1162	20.65%	1.60	[1.23,2.08]	0.000	1.73	[1.33,2.26]	0.000
2020-2022	92	658	13.98%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.

7.5.4 Risk factors for treatment interruptions (TI) during the first year of treatment

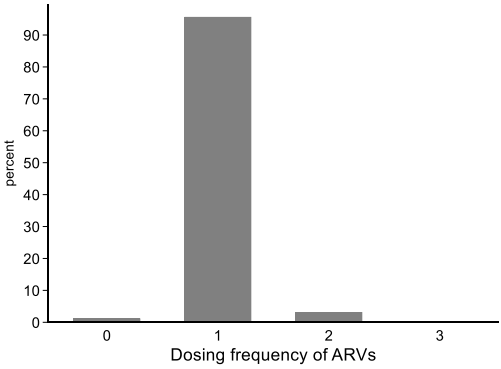
	TI	All		Univariable logistic regression			Multivariable logistic regression		
	420	5501	7.63%	OR	[95% CI]	p value	OR	[95% CI]	p value
HIV transmission category									
Male IDU	90	582	15.46%	4.93	[3.62,6.72]	0.000	3.49	[2.53,4.82]	0.000
Female IDU	51	209	24.40%	8.70	[5.95,12.73]	0.000	6.04	[4.04,9.02]	0.000
Male heterosexual	72	1019	7.07%	2.05	[1.49,2.82]	0.000	1.68	[1.19,2.38]	0.003
Female heterosexual	106	921	11.51%	3.51	[2.62,4.70]	0.000	2.43	[1.74,3.38]	0.000
Other	12	281	4.27%	1.20	[0.65,2.23]	0.556	1.18	[0.63,2.22]	0.613
MSM	89	2489	3.58%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Age at baseline									
< 30 years	168	1356	12.39%	2.60	[1.86,3.63]	0.000	1.76	[1.22,2.53]	0.002
30-50 years	205	3235	6.34%	1.24	[0.90,1.72]	0.192	0.93	[0.66,1.31]	0.670
≥ 50	47	910	5.16%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
AIDS at baseline									
Yes	66	823	8.02%	1.06	[0.81,1.40]	0.652			
No	354	4678	7.57%	1.00	[1.00,1.00]	.			
CD4 count at baseline									
< 50	48	620	7.74%	1.08	[0.77,1.52]	0.651			
50-199	84	1072	7.84%	1.10	[0.83,1.45]	0.523			
200-349	115	1407	8.17%	1.15	[0.89,1.48]	0.294			
Missing	34	471	7.22%	1.00	[0.68,1.48]	0.988			
≥ 350	139	1931	7.20%	1.00	[1.00,1.00]	.			
HIV-RNA at baseline									
10.000-99.999	144	1901	7.57%	0.89	[0.67,1.18]	0.414			
≥ 100.000	137	1946	7.04%	0.82	[0.62,1.09]	0.177			
Missing	58	695	8.35%	0.99	[0.69,1.40]	0.942			
≤ 9.999	81	959	8.45%	1.00	[1.00,1.00]	.			
Nationality									
High prevalence countries	87	701	12.41%	1.90	[1.48,2.44]	0.000	1.33	[0.98,1.80]	0.066
Low prevalence countries	333	4800	6.94%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Population size of area of residence									
Rural areas	129	2220	5.81%	0.64	[0.51,0.81]	0.000	0.86	[0.67,1.09]	0.208
Capital cities	70	753	9.30%	1.07	[0.81,1.42]	0.639	1.41	[1.04,1.90]	0.027
Vienna	221	2528	8.74%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Year of ART Initiation									
2004-2007	168	971	17.30%	8.97	[5.24,15.36]	0.000	6.33	[3.66,10.92]	0.000
2008-2011	123	1334	9.22%	4.35	[2.53,7.51]	0.000	3.34	[1.92,5.80]	0.000
2012-2015	83	1376	6.03%	2.75	[1.57,4.81]	0.000	2.38	[1.36,4.19]	0.003
2016-2019	31	1162	2.67%	1.17	[0.63,2.19]	0.613	1.14	[0.61,2.14]	0.684
2020-2022	15	658	2.28%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.

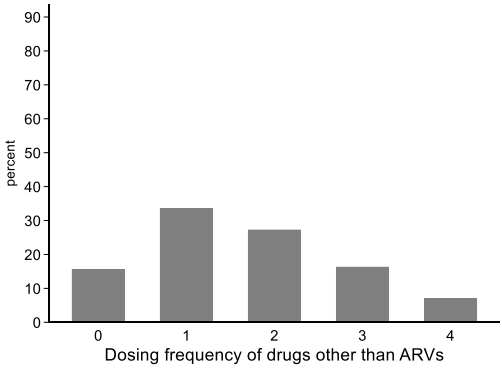
7.6 Frequency of drug dosing

7.6.1 Overview

23 of 4631 (0.5%) patients do not take any drugs at all and 31 (0.7%) patients have no ART but take other drugs. 703 (15.2%) patients are receiving ART only.

	Number of patients					
Dosing frequency	**0**	**1**	**2**	**3**	**4**	**Total**
Antiretrovirals (ARVs)	54	4429	147	1	0	4631
Drugs other than ARVs	726	1558	1263	756	328	4631
Overall dosing frequency	23	1525	1769	931	383	4631
Overall dosing frequency in patients with once daily ARVs	0	1513	1679	875	362	4429





7.6.2 Most frequent used regimen to treat HIV (March 2023)

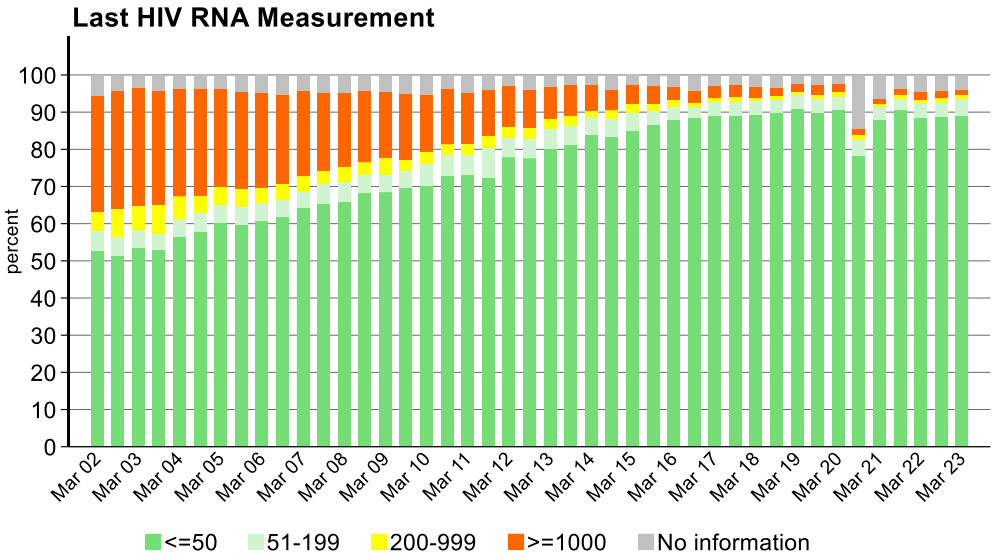
Regimen	Frequency	Percent
BGV FTC TAF	1,824	39.85
3TC DGV	716	15.64
3TC ABC DGV	426	9.31
FTC RPV TAF	344	7.52
3TC DOR TDF	223	4.87
DGV FTC TDF	134	2.93
EVG FTC TAF	131	2.86
3TC ABC RAL	73	1.59
DGV FTC TAF	65	1.42
DGV RPV	61	1.33
3TC ABC NVP	57	1.25
FTC RAL TDF	56	1.22
EFV FTC TDF	39	0.85
FTC RPV TDF	39	0.85
BLIND	34	0.74
FTC RAL TAF	33	0.72
DGV DOR	30	0.66
other	292	6.38
Total	**4577**	**100.00**

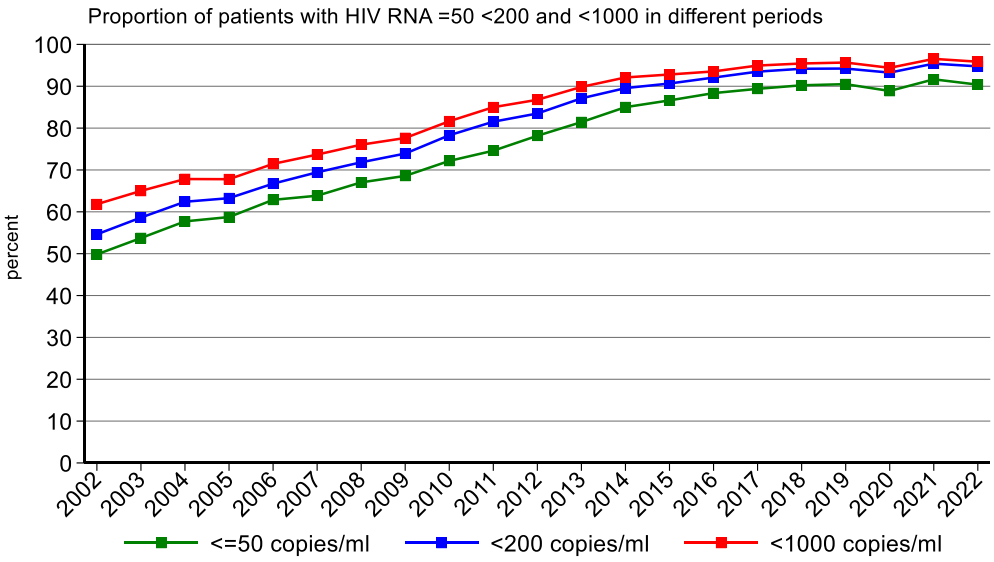
8 Disease progression and Response to ART

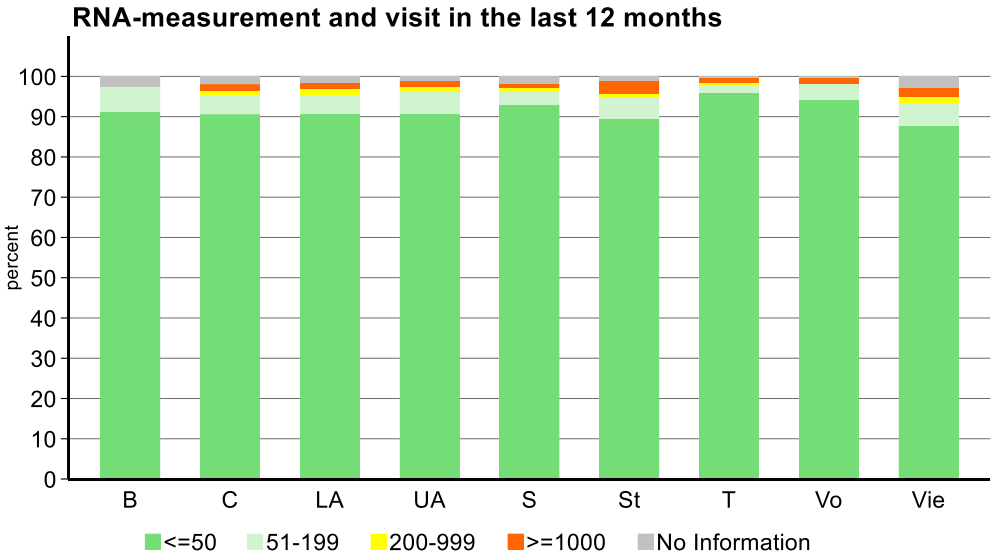
8.1 HIV RNA (viral load)

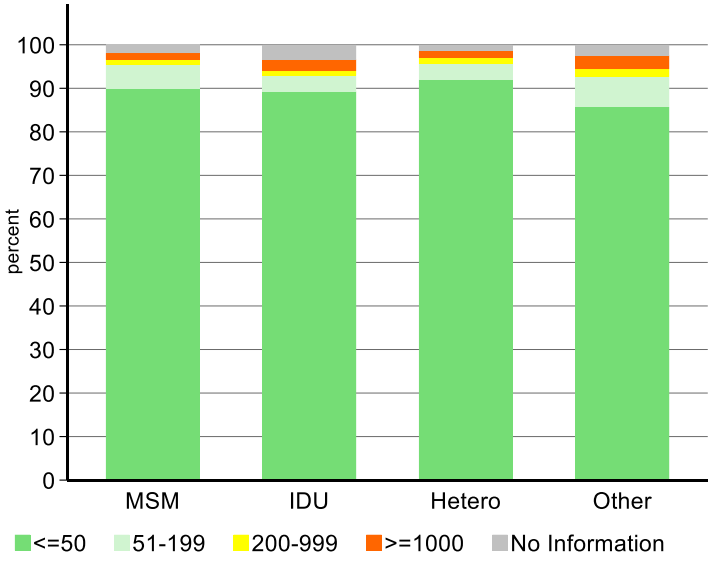
8.1.1 Last HIV RNA in patients currently in care regardless of ART

94.3% of the patients currently in care (4369 of 4631) have a current HIV RNA below 400 copies/ml.






RNA-measurement and visit in the last 12 months
percent
100
90
80
70
60
50
40
30
20
10
0
B
C
LA
UA
S
St
T
Vo
Vie
<=50
51-199
200-999
>=1000
No Information


percent
100
90
80
70
60
50
40
30
20
10
0
MSM
IDU
Hetero
Other
<=50
51-199
200-999
>=1000
No Information

8.1.2 The continuum of care in Austria

Data from AHIVCOS were used to derive the four-stage continuum of HIV care and assessed for all patients and for men who have sex with men (MSM) for the years 2010 to 2016.

a. People living with HIV (PLHIV) estimates were obtained using back-calculation models (ECDC tool 1.3.0) to estimate HIV incidence and the undiagnosed fraction.
b. Proportion ever diagnosed
c. Proportion ever diagnosed who ever initiated ART
d. Proportion of them who were virally-suppressed (≤200 c/mL)
e. Proportion suppressed of all PLHIV (e) for all patients in Austria

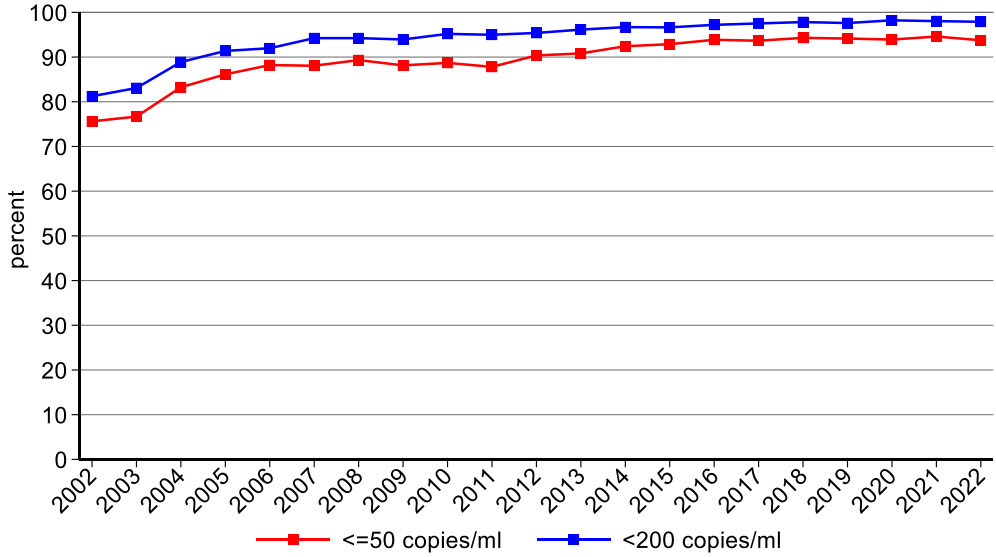
For high estimates patients lost to follow-up (LTFU, no contact 1.5 years before the end of the respective year) were excluded and for low estimates they were included. The preferred estimate was the mid-point between the high and low estimate.
Missing HIV-RNA was considered as unsuppressed.

Year	(a) PLHIV	(b) Diagnosed [estimated range]	(c) On ART Mean [low, high estimate]	(d) Suppressed Mean [low, high estimate]	(e) Suppressed of all PLHIV
2010	6254	**84%** [80%,86%]	**83%** [76%,89%]	**79%** [71%,86%]	**55%**
2011	6432	**86%** [82%,88%]	**85%** [79%,91%]	**80%** [72%,88%]	**59%**
2012	6594	**88%** [84%,90%]	**87%** [81%,93%]	**81%** [73%,89%]	**62%**
2013	6734	**89%** [85%,91%]	**89%** [83%,94%]	**83%** [74%,91%]	**66%**
2014	6864	**90%** [86%,92%]	**91%** [85%,96%]	**84%** [75%,92%]	**69%**
2015	6975	**91%** [88%,94%]	**92%** [87%,97%]	**84%** [75%,93%]	**70%**
2016	7079	**92%** [89%,94%]	**94%** [89%,98%]	**85%** [77%,93%]	**74%**
2018	7480	**94%** [91%,96%]	**95%** {91%,99%]	**85%** [76%,94%]	**76%**
2019	7655	**94%** [91%,97%]	**95%** {91%,99%]	**85%** [74%,95%]	**76%**
2020	7652	**96%** [93%,99%]	**96%** [92%,99%]	**89%** [72%,95%]	**82%**
2021	7732	**97%** [94%,100%]	**96%** [92%,99%]	**89%** [69%,96%]	**83%**

We conclude that Austria has finally reached the 90-90-90 target of UNAIDS for 2020. The somewhat smaller estimate of viral suppression maybe explained substantially by transfer of care in Vienna and out-migration. This and the decrease in HIV incidence supports the hypothesis that the high estimate of being on ART and virally-suppressed is the more likely scenario. For more reliable nationwide estimates data from private physicians have to be included.

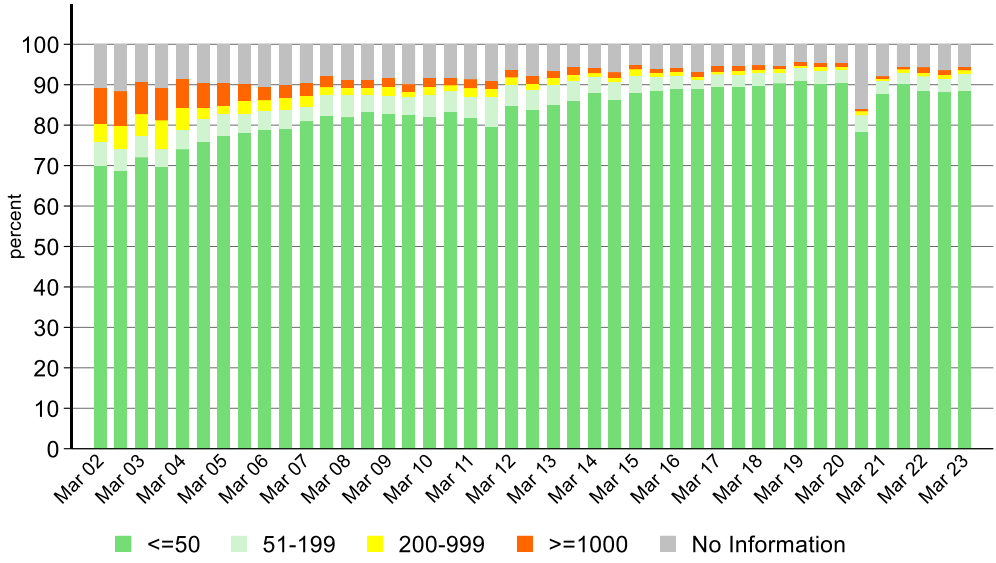
8.1.3 Last HIV RNA in patients on ART

Patients were included if there were at least 75 days between ART initiation and HIV RNA measurement.



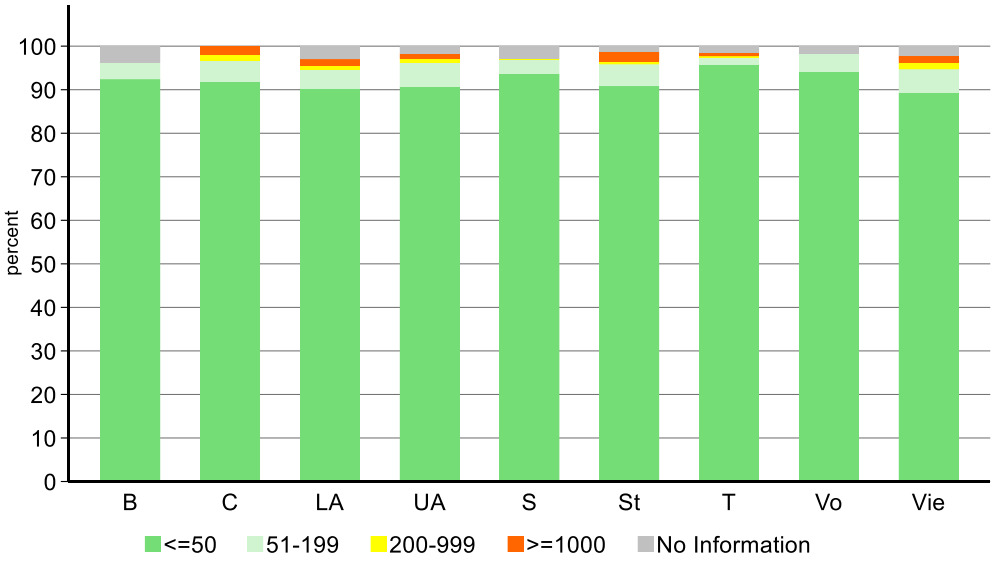
8.1.3.1 Last HIV RNA of patients on ART at different points in time

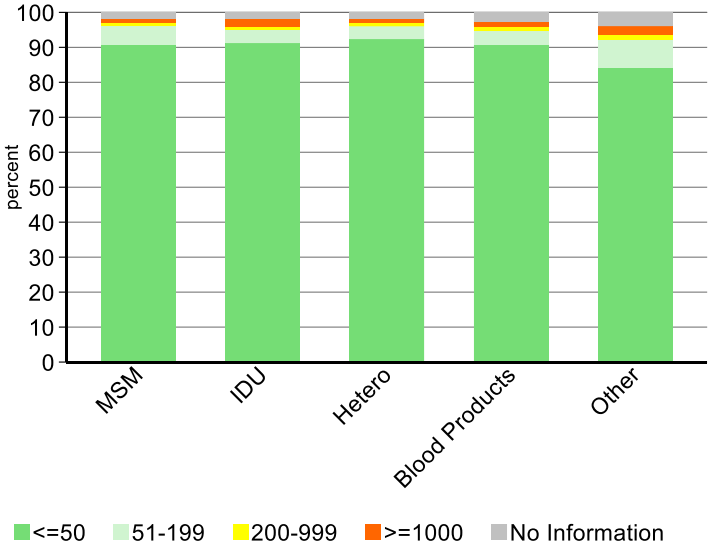
Patients currently in care, currently on ART and measurement of viral load at least 2.5 months after ART initiation



8.1.3.2 Last HIV RNA of patientst on ART according to transmission category

Patients in care and on ART within the last 12 months and measurement of viral load at least 2.5 months after ART initiation





8.1.4 Risk factors for viral replication

Risk factors for HIV RNA ≥200 copies/ml on ART

The analyses in this chapter include all patients with a visit in the last 12 months who have been on ART for at least 75 days before the measurement of the viral load.

				Univariable logistic regression			Multivariable logistic regression		
	116	**4838**	**2.40%**	**OR**	**[95% CI]**	**p value**	**OR**	**[95% CI]**	**p value**
Age									
< 30 years	14	246	5.69%	3.73	[1.99,7.01]	0.000	4.59	[2.24,9.39]	0.000
30-50 years	65	2266	2.87%	1.83	[1.22,2.75]	0.004	2.01	[1.29,3.13]	0.002
≥ 50	37	2326	1.59%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
HIV transmission category									
Male IDU	10	401	2.49%	1.15	[0.58,2.30]	0.694	0.71	[0.34,1.48]	0.362
Female IDU	8	180	4.44%	2.09	[0.97,4.50]	0.060	1.17	[0.52,2.64]	0.712
Male heterosexual	23	907	2.54%	1.17	[0.70,1.94]	0.546	1.23	[0.71,2.11]	0.457
Female heterosexual	19	969	1.96%	0.90	[0.52,1.54]	0.698	0.70	[0.39,1.27]	0.241
Other	10	268	3.73%	1.74	[0.87,3.49]	0.118	1.65	[0.80,3.42]	0.177
MSM	46	2113	2.18%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Nationality									
Missing/unknown	2	17	11.76%	5.64	[1.27,25.08]	0.023	3.80	[0.80,17.93]	0.092
High prevalence	11	409	2.69%	1.17	[0.62,2.21]	0.630	0.89	[0.44,1.82]	0.754
Low prevalence	22	903	2.44%	1.06	[0.66,1.70]	0.820	0.90	[0.54,1.51]	0.697
Austria	81	3509	2.31%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Population size of area of residence									
Rural areas	43	2229	1.93%	0.58	[0.39,0.86]	0.007			
Capital cities	14	816	1.72%	0.51	[0.28,0.92]	0.026			
Vienna	59	1793	3.29%	1.00	[1.00,1.00]	.			
AIDS									
Yes	23	758	3.03%	1.34	[0.84,2.13]	0.214			
No	93	4080	2.28%	1.00	[1.00,1.00]	.			
CD4 Nadir									
<50	27	747	3.61%	1.89	[1.18,3.01]	0.008	1.84	[1.12,3.04]	0.017
50-199	33	1268	2.60%	1.34	[0.87,2.08]	0.184	1.44	[0.90,2.30]	0.126
≥200	55	2822	1.95%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
ART initiation									
Before 1.1.1997	4	368	1.09%	0.43	[0.16,1.17]	0.097	0.23	[0.08,0.66]	0.007
After 1.1.1997	112	4470	2.51%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Ever ART interruptions									
None	57	3670	1.55%	0.25	[0.16,0.40]	0.000	0.14	[0.09,0.24]	0.000
1	29	659	4.40%	0.73	[0.44,1.24]	0.249	0.62	[0.36,1.06]	0.081
≥2	30	509	5.89%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.
Art duration									
< 9 months	10	294	3.40%	1.55	[0.80,3.00]	0.195	1.89	[0.91,3.90]	0.086
9-18 months	8	136	5.88%	2.75	[1.31,5.77]	0.008	3.61	[1.64,7.94]	0.001
> 18 months	98	4408	2.22%	1.00	[1.00,1.00]	.	1.00	[1.00,1.00]	.

9 Glossary

A	Austria
Ab	Antibody
ACE	Angiotensin-converting enzyme
AGES	Austrian Agency for Health and Food Safety
AHIVCOS	Austrian HIV Cohort Study
ART	Antiretroviral therapy (HIV-therapy)
ARVs	Antiretrovirals
ATC-Code	Anatomical therapeutic-chemical code
B	Burgenland
betw.	between
BMG	Federal Ministry of Health
C	Carinthia
cART	Combination antiretroviral therapy
CDC	Centers for Disease Control
CHD	Coronary heart disease
CIN	Cervical intraepithelial neoplasia
CIS	Commonwealth of Independent States
ECDC	European Centre for Disease Prevention and Control
EuroHIV	European Centre for the Epidemiological Monitoring of AIDS
GP	General practitioner
HBA1c	Hemoglobin A1c
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HDL	High density lipoprotein
Hetero	Heterosexually acquired infection
HIP	HIV-Patient-Management-System
IAS	International AIDS-Society
ICD	International Classification of Diseases (WHO)
IDU	Injecting drug users
INSTI	Integrase strand transfer inhibitor
Interm.	Intermediate
KFJ	Kaiser-Franz-Josef-Spital Wien/Kaiser-Franz-Josef-Hospital Vienna
LA	Lower Austria
LDL	Low density lipoprotein
m.	month(s)
MI	Myocardial infarction
MSM	Men who have sex with men
N.a.	Not available/ not applicable
n.s.	not significant
neg.	negative
NNRTI	Non Nucleoside Reverse Transcriptase Inhibitor
NRTI	Nucleoside Reverse Transcriptase Inhibitor
OWS	Otto-Wagner-Spital Wien/Otto-Wagner Hospital Vienna
P	Protease
PI	Protease inhibitor
RNA	Ribonucleic acid
RT	Reverse transcriptase
S	Salzburg
SD/ s.d.	Standard deviation
St	Styria
St. p.	Status post
T	Tyrol
UA	Upper Austria
UK	United Kingdom
Vertical	Vertical transmission
Vie	Vienna
Vo	Vorarlberg
WHO	World Health Organization
ys.	years

10 Austrian HIV Cohort Study Group

As of May 2023

Steering committee members: Alexander Egle, Manfred Kanatschnig, Angela Öllinger, Armin Rieger, Brigitte Schmied, Elmar Wallner, Robert Zangerle
Coordinating Centre: Medical University of Innsbruck (Robert Zangerle)
Funding: Austrian Agency for Health and Food Safety (AGES), Hospitals running HIV treatment centres, international cohort collaborations (RESPOND, ART-CC) pharmaceutical companies (equal contributions, irrespective of their market shares)
HIV treatment centres, *site coordinating physicians: (LKH Innsbruck) Martin Gisinger, Alexander Plattner, Maria Reich, Mario Sarcletti*. (LKH Salzburg) Arno Beer, Alexander Egle, Richard Greil*, Carmen Lehner, Michaela Schachner. (Kepler Universitätsklinikum Med Campus III. Linz) Angela Öllinger*, Matthias Skocic, Monika Müller. (AKH Vienna) Regina Aichwalder, David Chromy, Katharina Grabmeier-Pfistershammer, Armin Rieger*, Veronique Touzeau, Wolfgang Bauer. (Penzing Hospital Vienna) Piotr Cichon, Simon Daller, Michael Kappnik*, Sonja Wolf-Nussmüller. (Favoriten Hospital Vienna) Hermann Laferl, Alexander Zoufaly*. (LKH Graz II, Standort West) Christina Genger-Hackl, Andreas Kapper, Elisabeth Trattner, Elmar Wallner*. (LKH Klagenfurt) Manfred Kanatschnig*. (Feldkirch) Michele Atzl*, Bernd Hartmann
Virology: Elisabeth Puchhammer-Stöckl (Vienna)
Data management: Heinz Appoyer (IT-related), Gisela Leierer (AHIVCOS), Michaela Rappold (AHIVCOS), Stefanie Strickner (AHIVCOS), Robert Zangerle (Medical University of Innsbruck)
Data safety and protection: Klaus Schindelwig (Innsbruck)
Scientific advisory board: Bruno Ledergerber (Zurich), Gerd Fätkenheuer (Cologne)

Verein Österreichische HIV-Kohortenstudie
c/o Univ.-Prof. Dr. Robert Zangerle
HIV-Bereich
Universitätsklinik für Dermatologie und Venerologie
Anichstraße 35
6020 Innsbruck

E-Mail: lki.ha.hiv-kohorte@tirol-kliniken.at

AUTHORS:
Gisela Leierer
Michaela Rappold
Stefanie Strickner
Robert Zangerle