

Treating HIV-infected IDUs

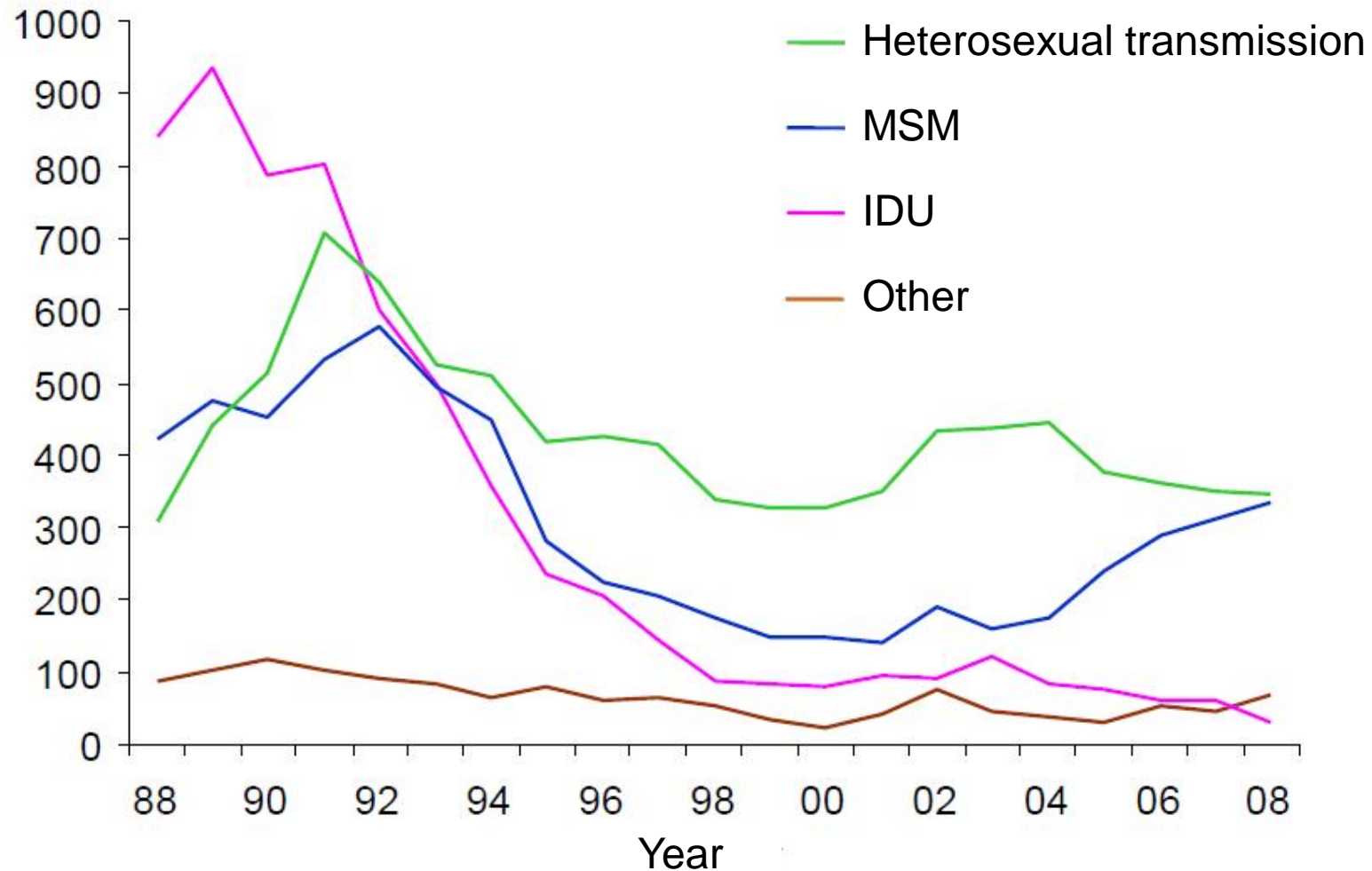
Rainer Weber

Division of Infectious Diseases

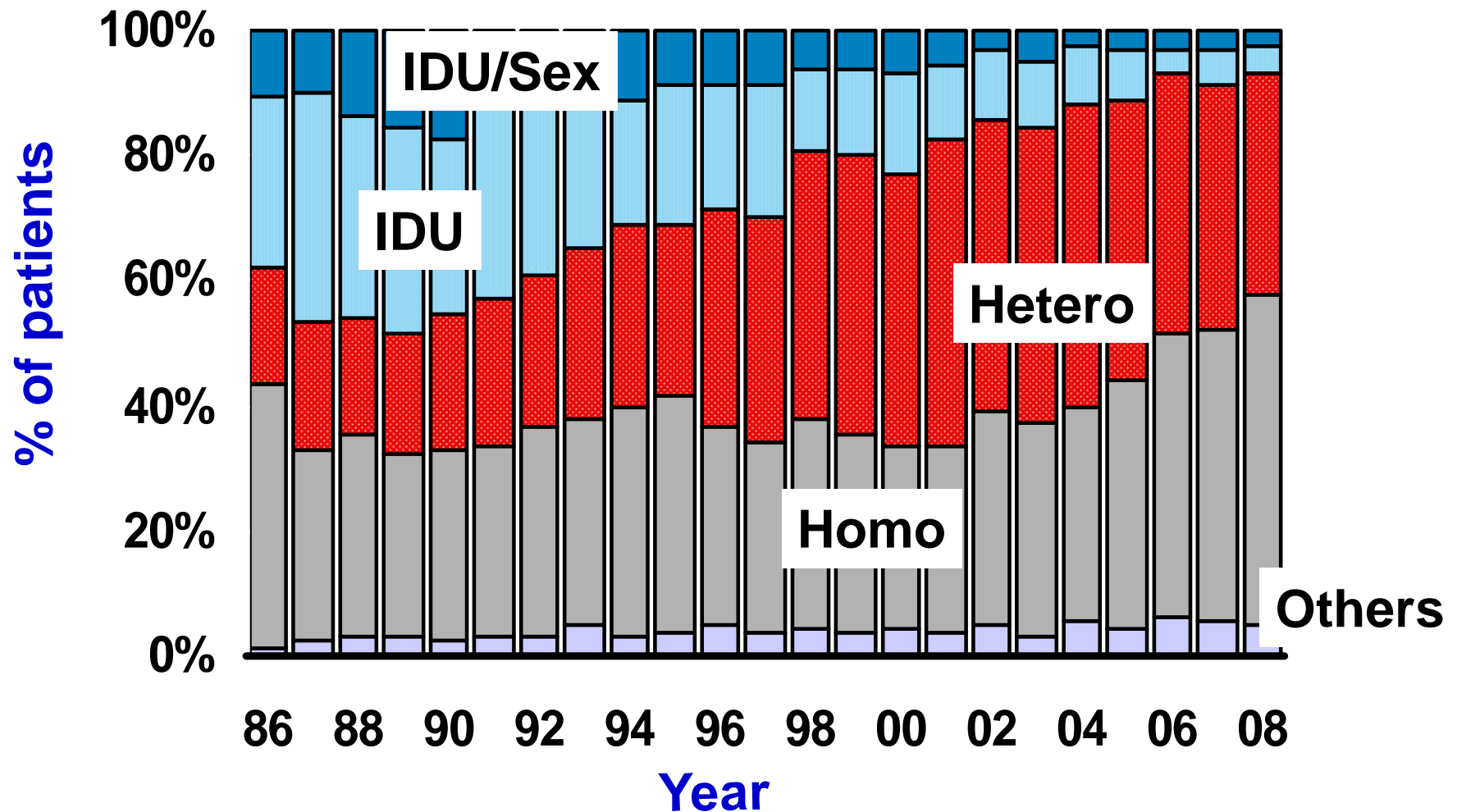
University Hospital Zurich, Switzerland

IDU and HIV in Switzerland

Reported new HIV infections, Switzerland



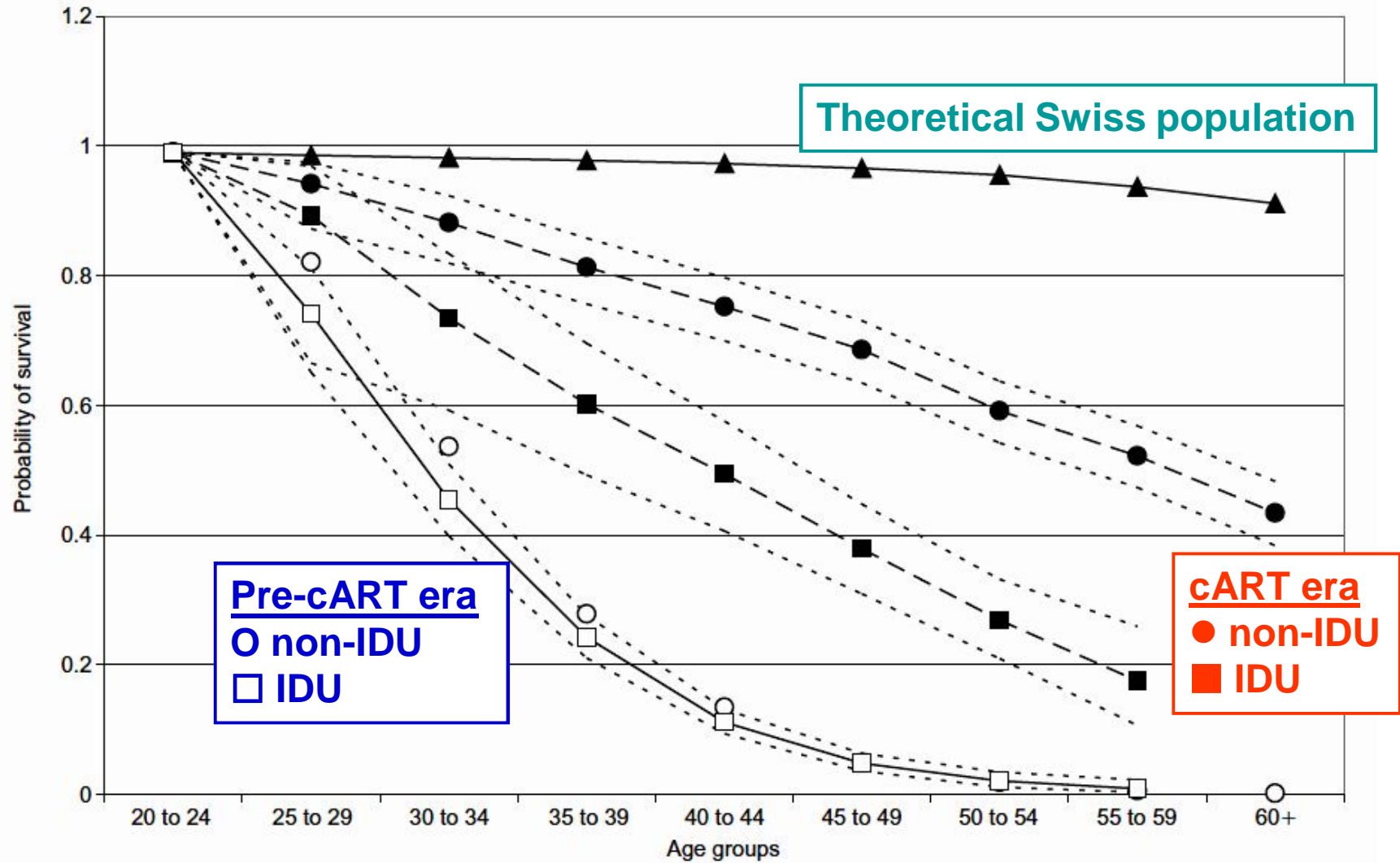
Distribution of patients registered in the SHCS by presumed mode of infection, 1986-2008



Source : SHCS 05/2009

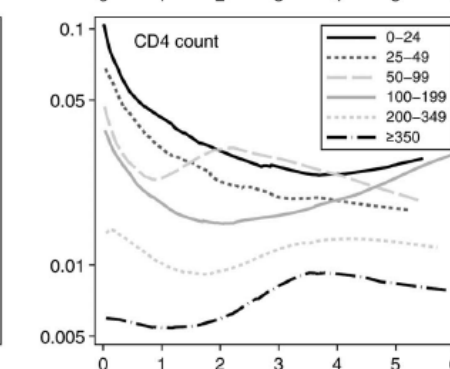
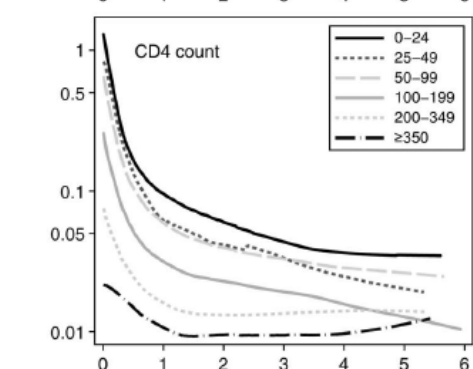
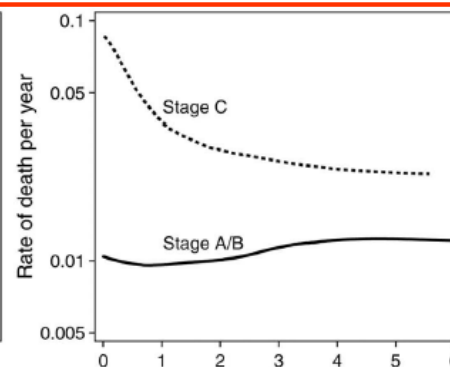
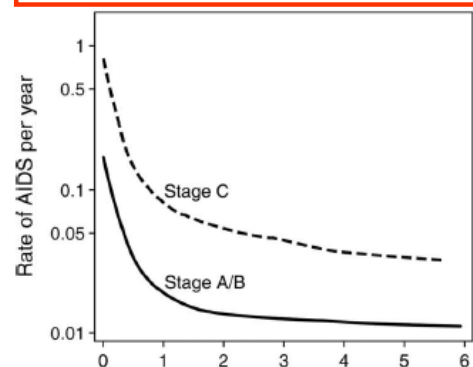
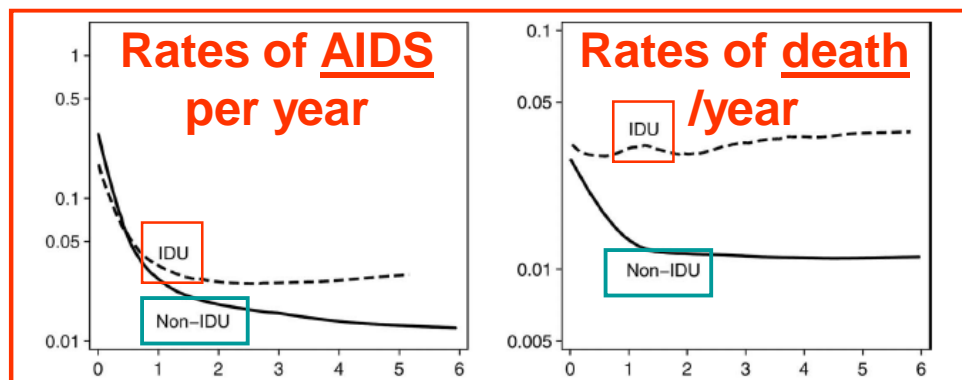
Progression to AIDS and death

Survival function



Estimated rates of HIV progression

IDU versus non-IDU



Years from start of HAART

J Acquir Immune Defic Syndr
2007;46:607-615)

Difficulties to assess outcome in IDUs

Difficulties of outcome assessment of ART in IDU

- Exclusion of active injecting drug user in randomized clinical trials
- Prospective observational databases
 - Low number of IDUs with current and active injecting drug use
 - Difficulties to assess current drug use
 - Higher drop out rate of IDUs
 - Difficulties of adherence assessment

Definitions

- The term "IDUs" is used to describe the presumed HIV transmission category
- However, when investigating the need for and the outcome of ART in this person group, it is an over-simplification to consider IDUs as a homogenous group

Definitions

4 different categories of "IDUs"

1. **Former IDU** (completely stopped drug use since last follow-up)
2. **OSTP** (in opiate substitution tx program)
3. **OSTP/active IDU** (intermittently injecting drugs while in an OSTP)
4. **currently active IDU** (injecting drugs in the time since last visit and current visit)

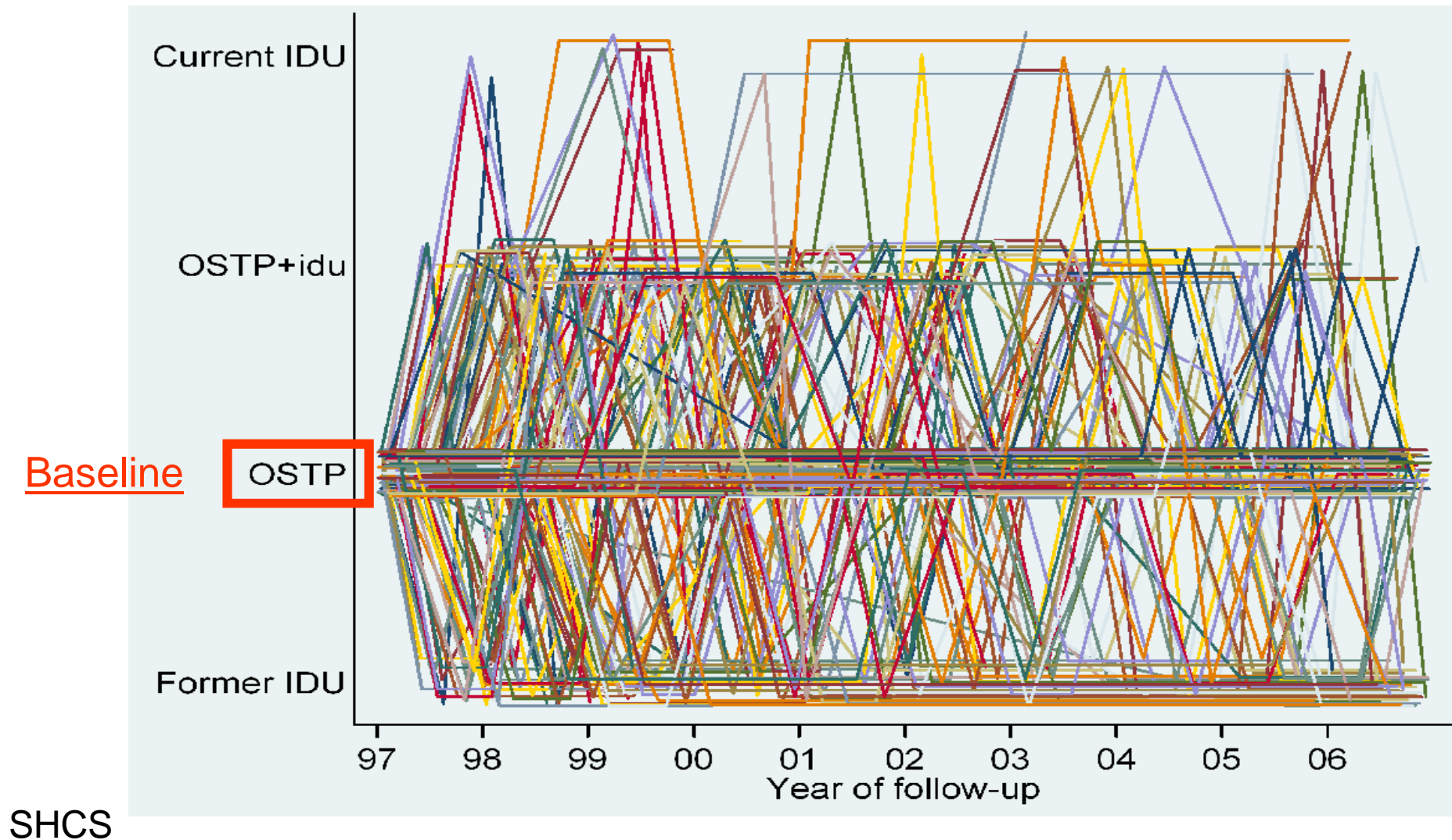
Trajectory of an injecting drug user during follow-up

	Visit					
	1	2	3	4	5	6
Injecting				yes		
Methadone <u>and</u> injecting			yes		yes	
Methadone <u>not</u> injecting	yes	yes				yes
Former IDU						

Trajectory of an injecting drug user during follow-up

	Visit					
	1	2	3	4	5	6
Injecting						
<u>Methadone</u> and injecting						
<u>Methadone</u> <u>not</u> injecting	yes	yes				
Former IDU			yes	yes	yes	yes

Trajectories of injecting drug use among “IDUs”



Swiss HIV Cohort Study

ORIGINAL RESEARCH

Uptake of and virological response to antiretroviral therapy among HIV-infected former and current injecting drug users and persons in an opiate substitution treatment programme: the Swiss HIV Cohort Study

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Objectives

- To investigate the influence of
 - continued injecting drug use,
 - enrolment in an opiate substitution treatment program, or
 - cessation of injecting drug useon the uptake of antiretroviral therapy (ART), and
- on the course and outcome of ART.

Methods

- Prospective observational cohort, 1997-2006
- We distinguished four groups of IDUs:
 1. abstinent former IDUs;
 2. persons in opiate substitution treatment programs (OSTPs) without injecting drug use;
 3. persons in OSTPs with concomitant injecting drug use;
 4. current injecting drug users.
- These groups were compared with never-IDUs
- Factors related to ART uptake and virological endpoints were analyzed using logistic generalized estimating equations.

Patient care

HIV infection

- Cohort centers
(University / other
hospital-based out-
patient clinics)
 - **no opiate substitution**
- Private practitioners
collaboration with
SHCS
 - **rarely providing
opiate substitution**

Opiate substitution

- Authorized private
practitioners
- Specialized drug
addiction treatment
institutions
 - **directly administered
antiretroviral treat-
ment (“DAART”)
possible**

Care

HIV infection

- Cohort centers (University / other hospital-based outpatient clinics)
 - **no opiate substitution**
- Private practitioners collaboration with SHCS
 - **rarely providing opiate substitution**

Opiate substitution

- Authorized private practitioners
- Specialized drug addiction treatment institutions
 - **directly administered antiretroviral treatment (“DAART”) possible**

Patients' characteristics, clinical and laboratory data: prospective observation by SHCS. IDU data: self-reported by patients, prospective collection

Patient characteristics (1)

	Baseline IDU category (at time of first visit in 1997 or thereafter)				
	Never IDU	Abstinent former IDU	OSTP (no iv drugs)	OSTP + injecting drugs	Current IDU
Baseline					
No. of persons (%)	6,091 (70.3)	1,080 (12.5)	741 (8.6)	607 (7.0)	141 (1.6)
Female, %	29.0	37.1	36.4	37.1	29.1
Median age, years (IQR)	37 (32-45)	36 (32.5-39)	36 (32-39)	34 (30-38)	33 (29-39)
Median nadir CD4 cell count (IQR)	257 (111-432)	202.5 (81-356.5)	192 (86-357)	245 (120-470)	277 (156-512)
Prior clinical AIDS, %	19.0	22.1	20.4	17.3	9.2
Active hepatitis C virus infection, %	7.1	85.6	93.8	96.1	89.8
Active hepatitis B virus infection, %	4.7	3.8	3.5	4.3	5.1
Started mono/dual therapy, %	54.2	66.1	65.5	44.8	40.4

Patient characteristics (2)

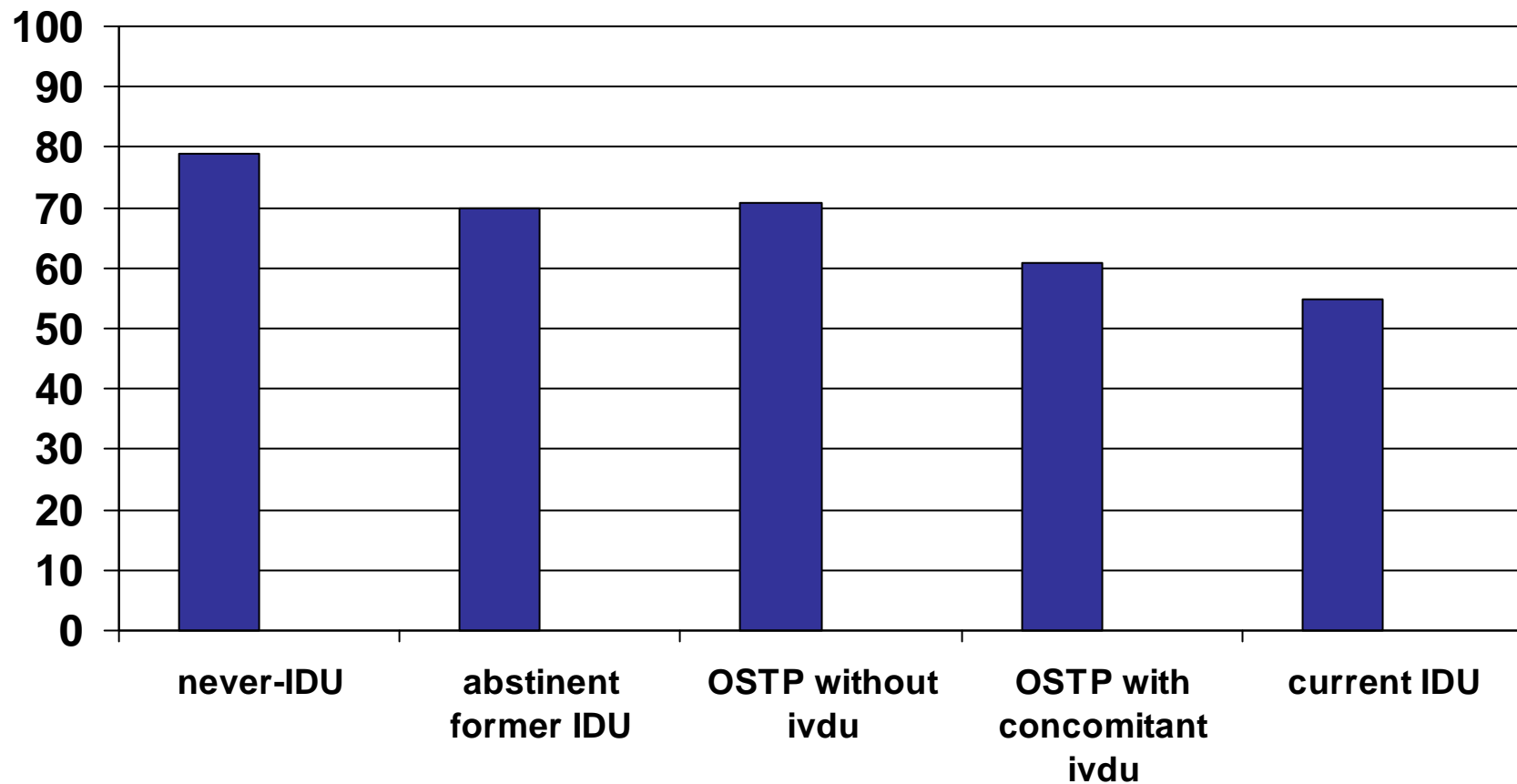
	Baseline IDU category (at time of first visit in 1997 or thereafter)				
	Never IDU	Abstinent former IDU	OSTP (no iv drugs)	OSTP + injecting drugs	Current IDU
Baseline					
No. of persons (%)	6,091 (70.3)	1,080 (12.5)	741 (8.6)	607 (7.0)	141 (1.6)
Last visit					
Median years (IQR) on follow-up	5.6 (2.5-8.9)	6.9 (3.2-9.3)	5.6 (2.5-9.0)	5.4 (2.5-8.7)	5.8 (2.4-8.8)
Total person years on follow-up	33,751	6,599	4,104	3,253	771
Died, no. (%)	374 (6.1)	136 (12.6)	162 (21.9)	110 (18.1)	21 (14.9)
Lost to follow-up, no. (%)	917 (15.1)	273 (25.3)	201 (27.1)	185 (30.5)	51 (36.2)
Remained ART naive, %	9.8	9.2	7.4	17.0	19.2
Discontinued ART, %	17.9	21.7	26.6	28.2	27.0
On ART, %	72.4	69.2	66.0	54.9	53.9
HIV-1 RNA < 50 c/mL (if treated), %	81.4	75.6	74.4	72.7	71.1
Median years on ART (IQR)	5.4 (2.4-8.8)	6.4 (3.2-9.7)	5.2 (2.0-8.9)	3.9 (1.5-7.2)	3.6 (1.3-7.1)

IDU Trajectories

Follow-up drug use behavior	Baseline IDU category			
	Abstinence, former IDU	OSTP without iv drugs	OSTP + concomitant iv drug use	Current IDU
Throughout all visits, %	72.0	25.2	12.2	4.3
At last follow-up visit, %				
Abstinence, former IDU	84.6	23.5	16.8	45.4
OSTP without iv drugs	9.4	60.5	48.8	24.8
OSTP + concomitant iv drug use	3.1	14.3	31.8	19.2
Current IDU	2.4	1.8	2.6	10.6

Self-reported adherence:

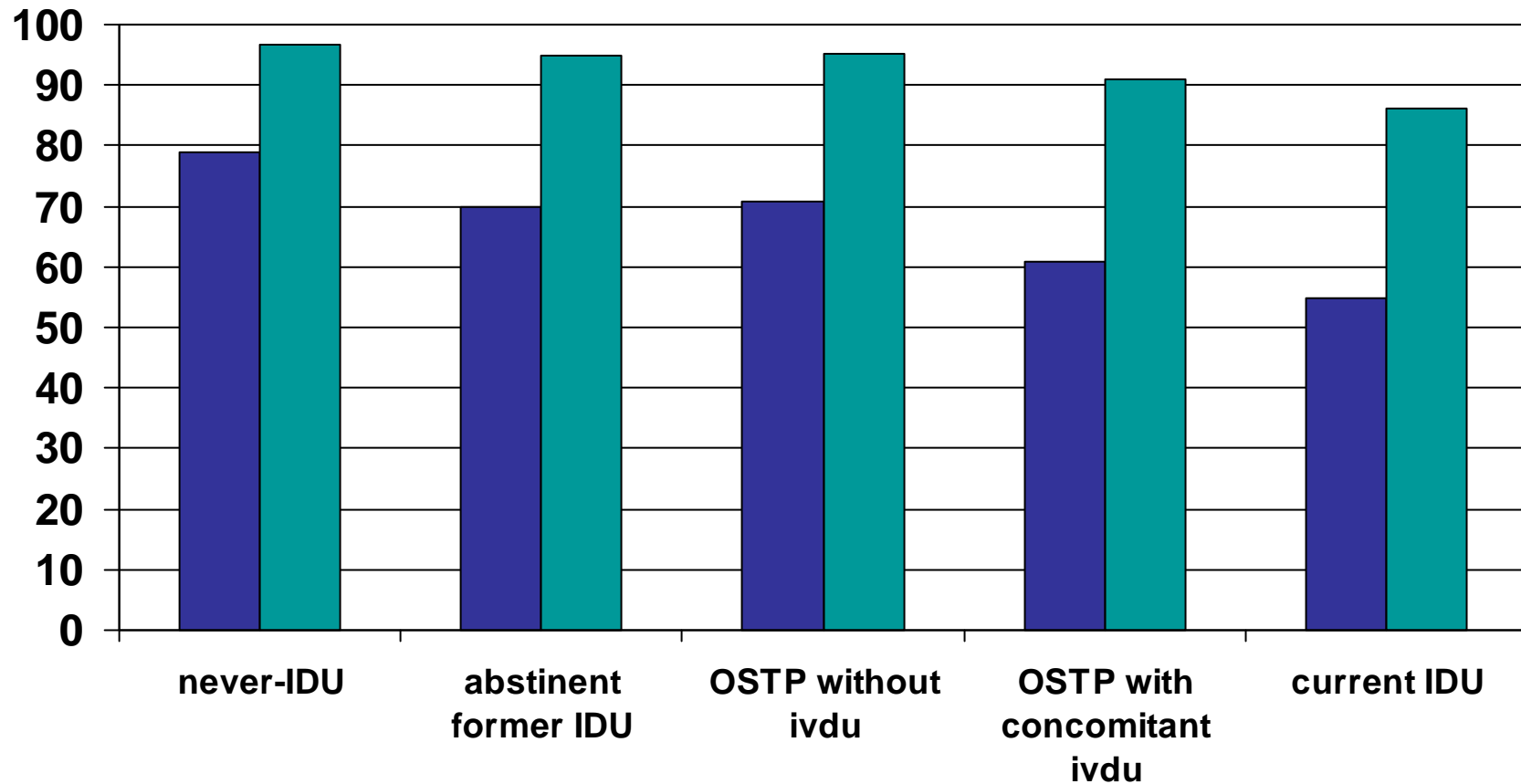
“Never missed a dose of ART within previous month”



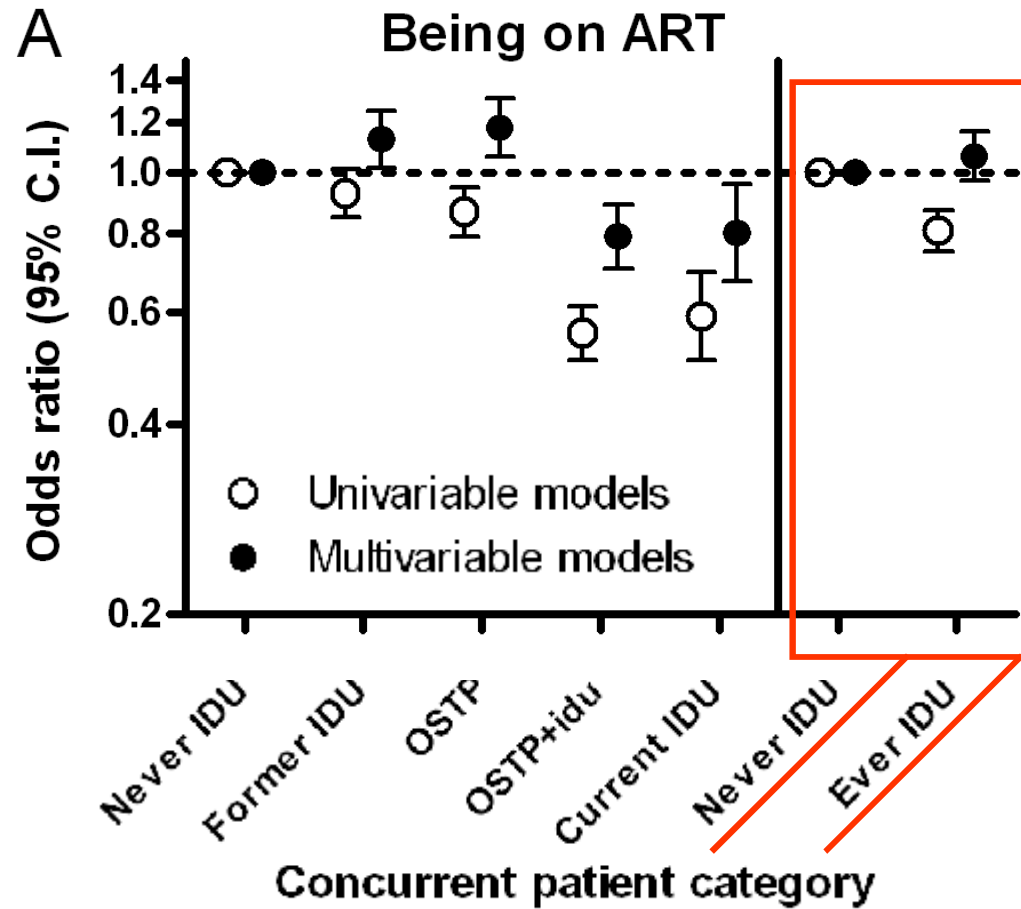
Self-reported adherence:

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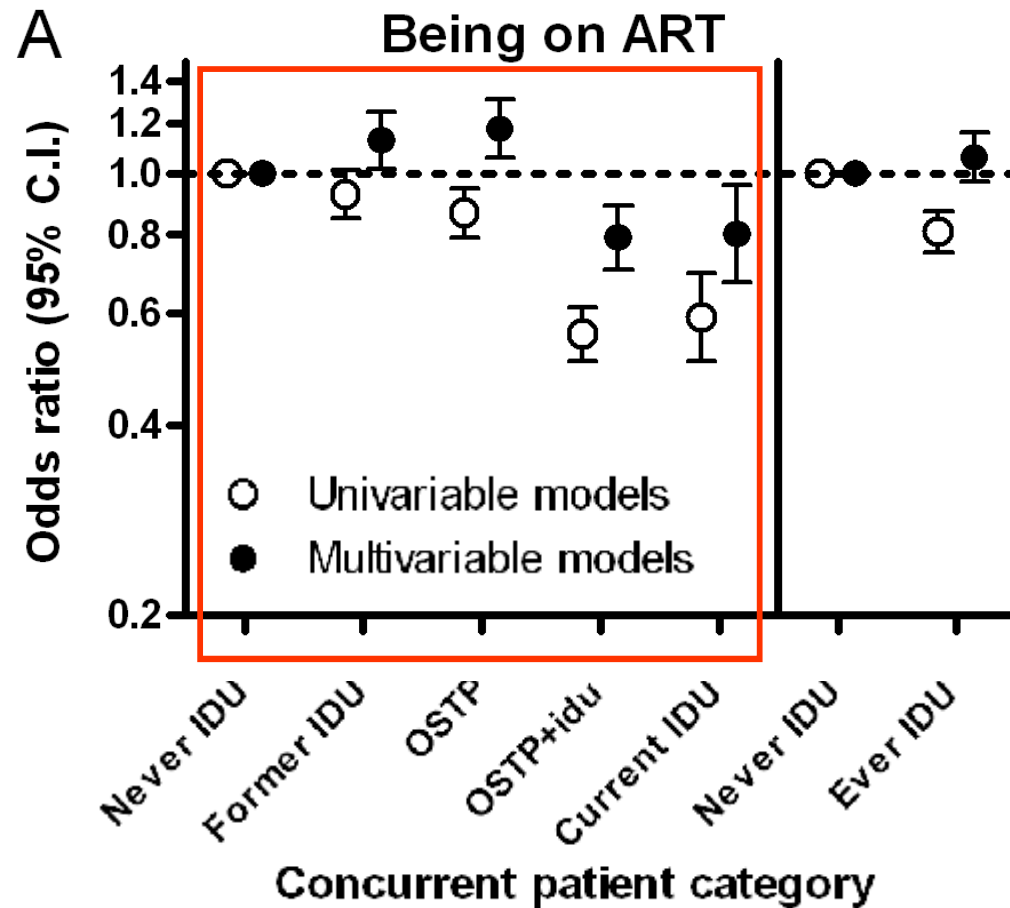
“Never missed several doses in a row ...”



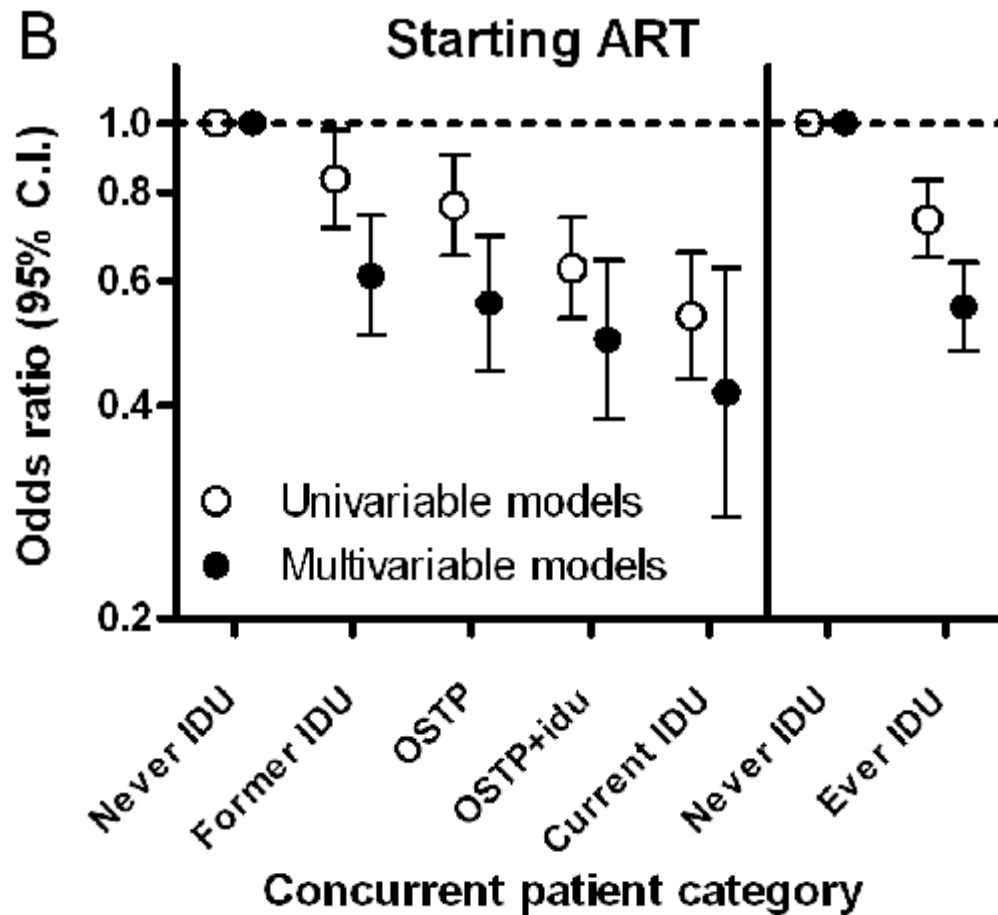
Being on ART



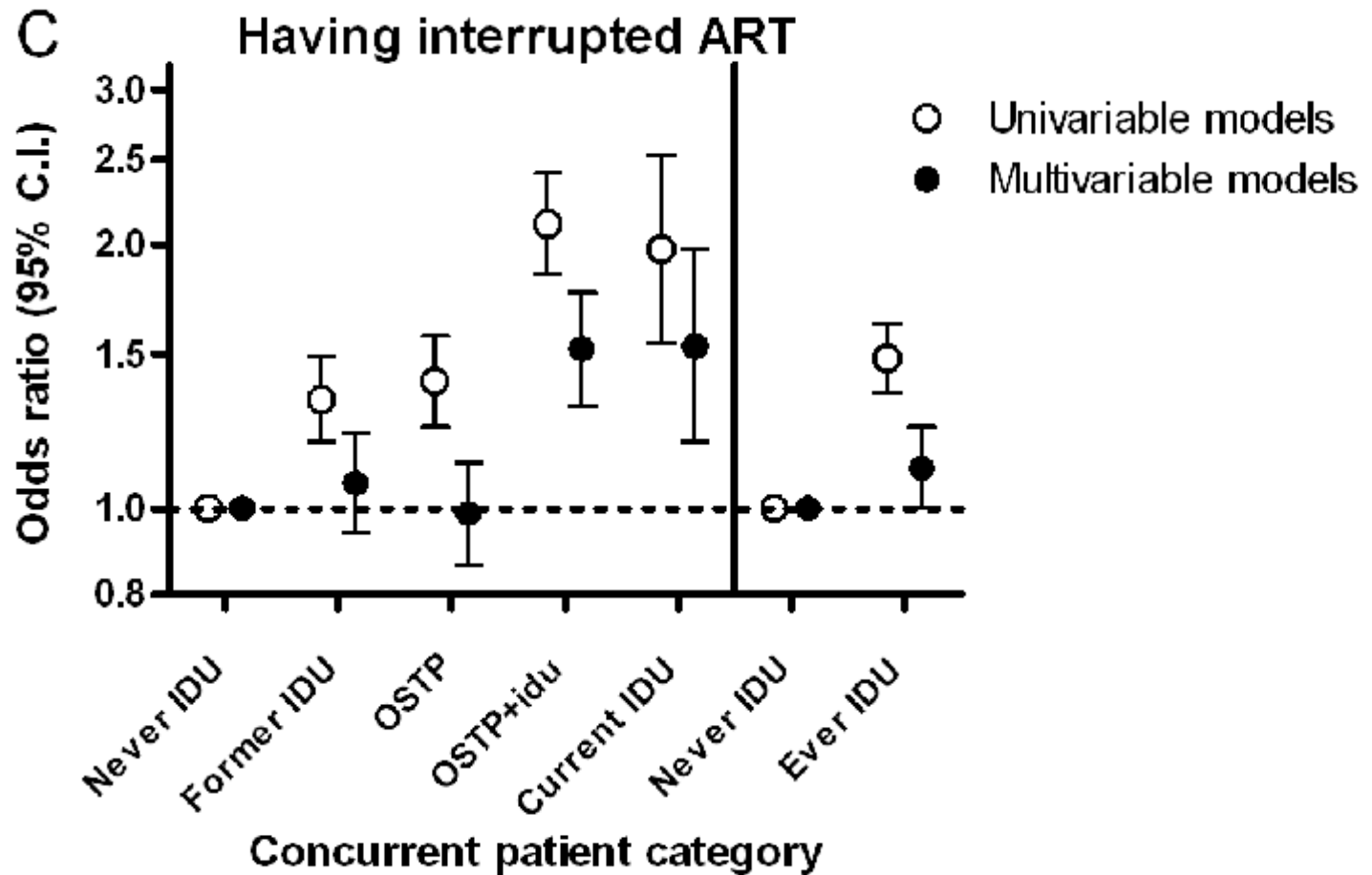
Being on ART



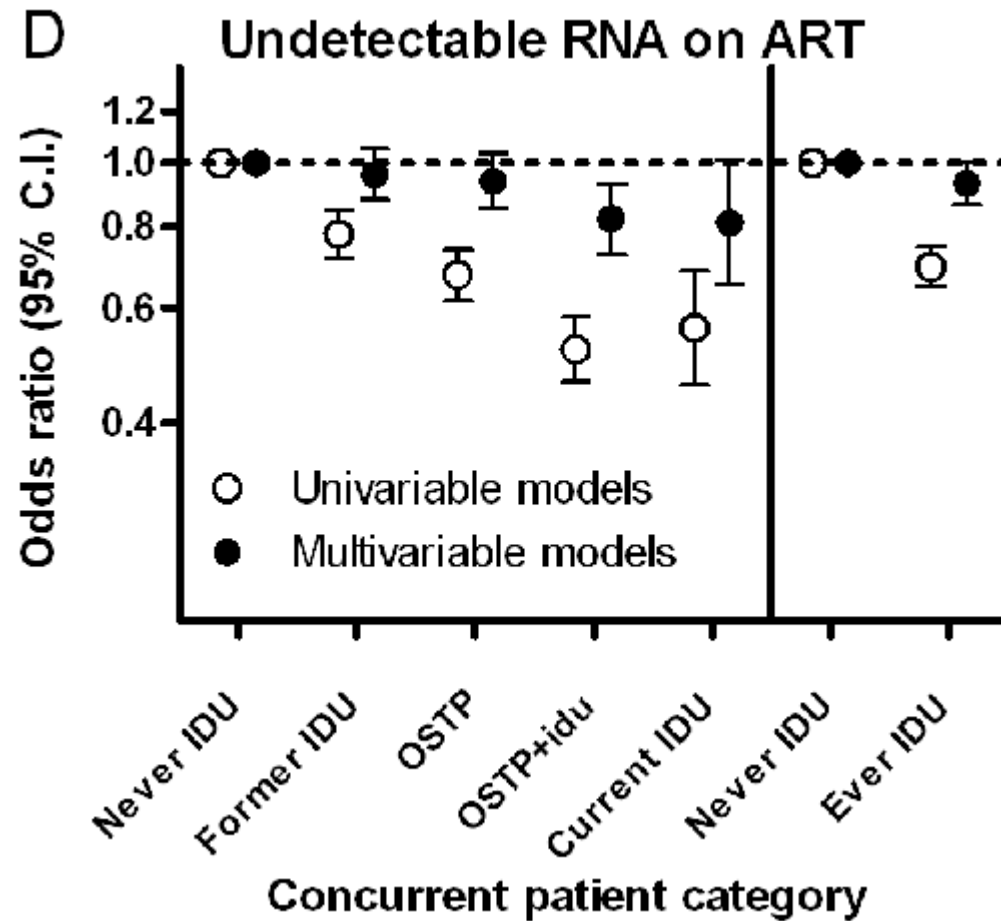
Starting ART if not on ART



Interruption of ART



Undetectable HIV-1 RNA on ART



Conclusions

- HIV-infected IDU need comprehensive interdisciplinary long-term strategies which integrate treatment of addiction, HIV infection, as well as psychosocial and somatic complications of injecting drug use.
- Programs aiming at opioid abstinence or stable opiate substitution are important prerequisites for the initiation, maintenance and success of antiretroviral therapy.

SHCS experience with IDUs

- IDU are not a „homogenous“ group
- ART or HCV treatment are feasible
- ART is less frequently started in IDUs but is successful if drug addiction is treated
- IDU on methadone without concomitant injecting drug use have similar outcome as never-IDU
- Adherence to drug addiction treatment programs are a prerequisite for ART
- Strengthen readiness to start
- Consider directly administered antiretroviral treatment (“DAART”) in selected patients
- Interdisciplinary collaboration

Acknowledgements

- Patients
- Physicians and Study Nurses
- Members of the Swiss HIV Cohort Study
- Bruno Ledergerber, Milo Huber
(University Hospital Zurich, Switzerland)