

## Aim

- Incidence of HCV reinfection after DAA treatment of drug users in an integrated setting
- Drug use behaviour after termination of DAA treatment

## Method

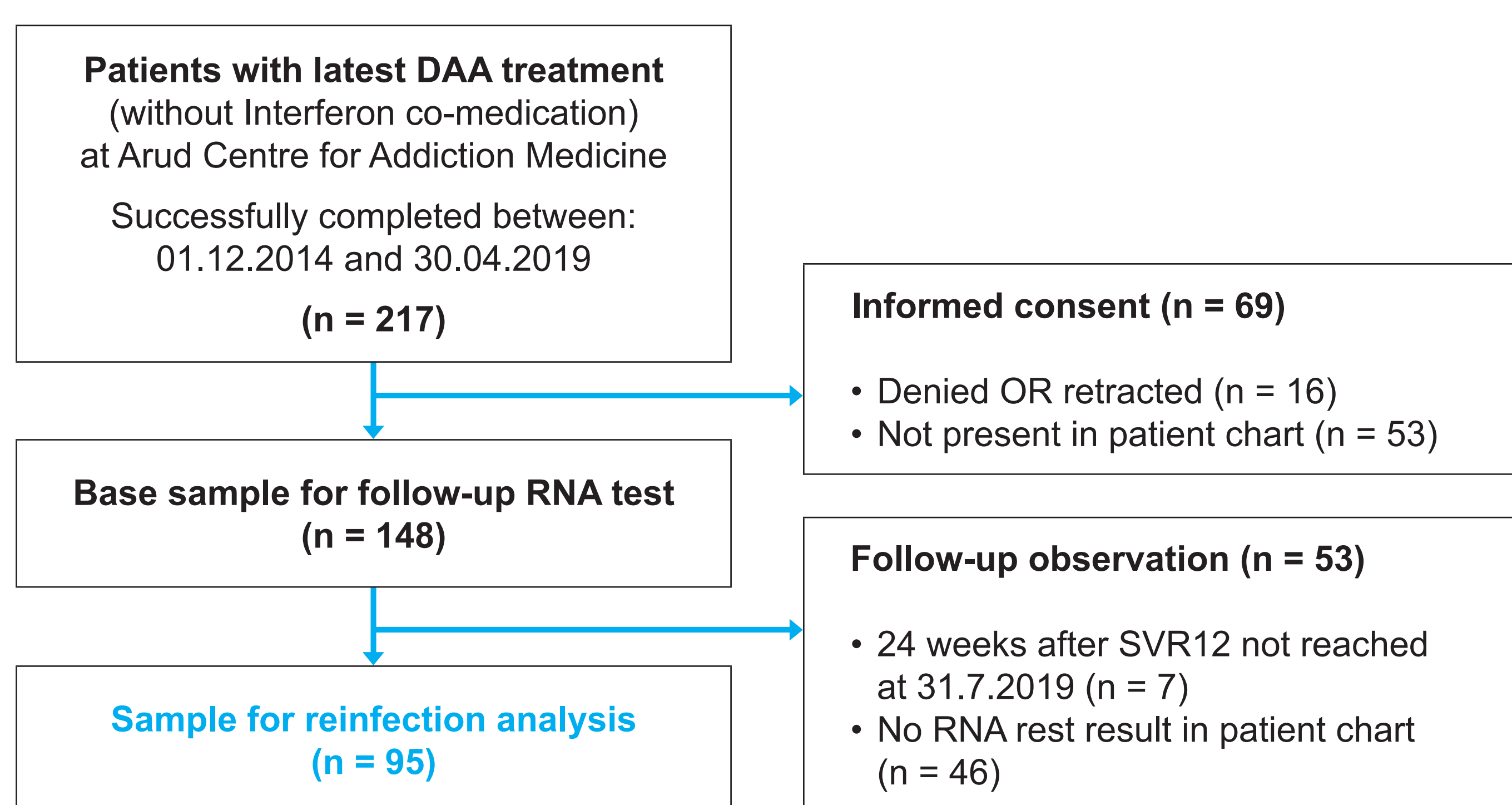
**Design:** Retrospective patient chart analysis

**Setting:** Centre for addiction medicine offering opioid agonist treatment with all approved medications (including heroin assisted treatment) together with general medical and psychiatric care in Zurich, Switzerland

**Participants:** Total n = 95

- Diagnosis of opioid or cocaine use related disorder
- Successfully completed HCV treatment with direct acting agents (DAA) between 1st of December 1994 and 30th of April 2019 (interferon co-medication excluded)
- Follow-up HCV RNA test at least 24 Weeks after SVR12

## Fig 1 Flowchart of dataset construction



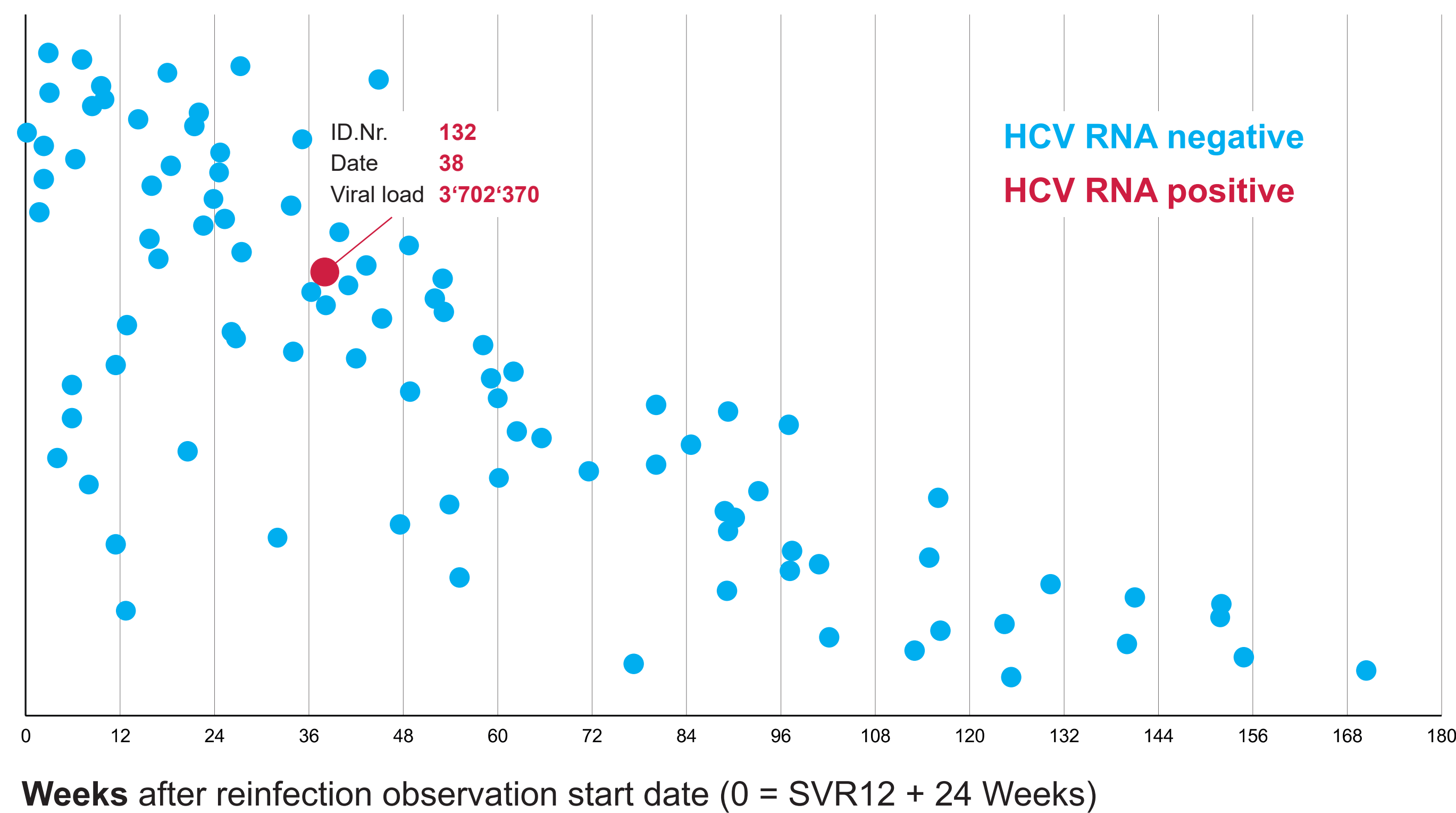
## Results

- During the total follow-up period of 5'047 weeks one HCV reinfection occurred.
- HCV reinfections per 100 person-years estimate = 1.03 (95% CI: 0 – 5.2).
- One third of the patients reported injection drug use after end of DAA treatment.
- Nearly one third of participants had advanced liver fibrosis or cirrhosis.
- Psychiatric comorbidities were prevalent.

## Literature

- Akiyama MJ, Lipsey D, Heo M, Agyemang L, Norton BL, Hidalgo J, Lora K, Litwin AH. *Low Hepatitis C Reinfection Following Direct-Acting Antiviral Therapy Among People Who Inject Drugs on Opioid Agonist Therapy.* Clin Infect Dis. 2019 Jul 26.
- Valencia J, Alvaro-Meca A, Troya J, Cuevas G, Gutiérrez J, Morro A, Alvarez J, Pulido L, Cañamares I, Escobar I, Moreno S, Ryan P. *High rates of early HCV reinfection after DAA treatment in people with recent drug use attended at mobile harm reduction units.* Int J Drug Policy. 2019 Jun 25
- Martinello M, Hajarizadeh B, Grebely J, Dore GJ, Matthews GV. *HCV Cure and Reinfection Among People With HIV/HCV Coinfection and People Who Inject Drugs.* Curr HIV/AIDS Rep. 2017 Jun;14(3):110-121.

## Fig 2 Date and result of latest follow-up HCV-RNA-test



## Discussion

- HCV reinfection after successful DAA treatment was low, despite potentially risk bearing drug use behaviour after therapy among half of the patients.
- Finding is comparable to the result of Akiyama et al. 2019.
- It may be assumed that the easy access to harm reduction measures for PWID, especially availability of sterile injection paraphernalia, contribute to prevent HCV reinfection.

## Conclusion

Within a healthcare delivery system offering easy access to harm reduction measures for PWID, HCV treatment with DAAs has the potential to contribute significantly to the WHO goal of HCV elimination.

**Table 1** Characteristics of total study population

Numbers N are also given as % of the numbers n of responses available.

Trait	Value (unit or explanation)	n	N	%	Mean ± SD	Min–Max
Age	(Years at end of HCV treatment)	95			46.6 ± 8.0	25–64
Sex	Male	95	76	80.0		
Liver status	Cirrhosis (diagnosis from medical history)	95	16	16.8		
	Mild fibrosis (F2; Latest Fibroscan Result: 8 - 9 KPa)	89	7	7.9		
	Moderate fibrosis (F3; Latest Fibroscan Result: 9 - 14 KPa)	89	17	19.1		
	Advanced fibrosis or cirrhosis (F4; Latest Fibroscan Result: 14+ KPa)	89	26	29.2		
HIV status	HIV-positive (diagnosis from medical history)	95	8	8.0		
Psychiatric comorbidities	At least one further psychiatric diagnosis (from medical history)	95	64	67.4		
	Several further psychiatric diagnoses known (from medical history)	95	29	30.0		
	Opioid use disorder (diagnosis from medical history)	95	36	37.9		
Drug use status baseline	Opioids + cocaine use disorder (diagnoses from medical history)	95	22	23.2		
	Opioids + alcohol use disorder (diagnoses from medical history)	95	16	16.8		
	Opioids + cocaine + alcohol use disorder (diagnoses from medical history)	95	20	21.1		
	Injection drug use (lifetime)	74	70	94.6		
	Reinfection observation	Time of latest follow-up HCV RNA test (Weeks, 0 = SVR12+24)	95			53.1 ± 43.5
Drug use status after end of HCV treatment	Any use	63	33	52.4		
	Injecting	33	11	33.3		
	Smoking	32	14	43.8		
	Sniffing	33	20	60.6		
Opioid Agonists	Several administration routes	33	11	33.3		
	Methadone (racemic)	95	20	21.1		
	Levomethadone (L-Polamidon)	95	3	3.2		
	Buprenorphine	95	6	6.3		
	Morphine (SROM)	95	28	29.5		
	Diacetylmorphine (DAM)	95	26	27.4		