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Heroin-assisted treatment in Switzerland

Results of the 2018 survey

Gerhard Gmel
Florian Labhart
Etienne Maffli

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1 Introduction

Heroin-assisted treatment (HAT) has been regularly monitored in Switzerland since 2001. This report presents the results of the 2018 survey. In principle, the term diamorphine-assisted treatment would be fitting. Diamorphine is pharmaceutical heroin that is administered under the name Diaphin. In 2018, 22 institutions in 13 Swiss cantons were authorised to administer Diaphin (Figure 1).

Figure 1:   Distribution of institutions administering HAT by canton
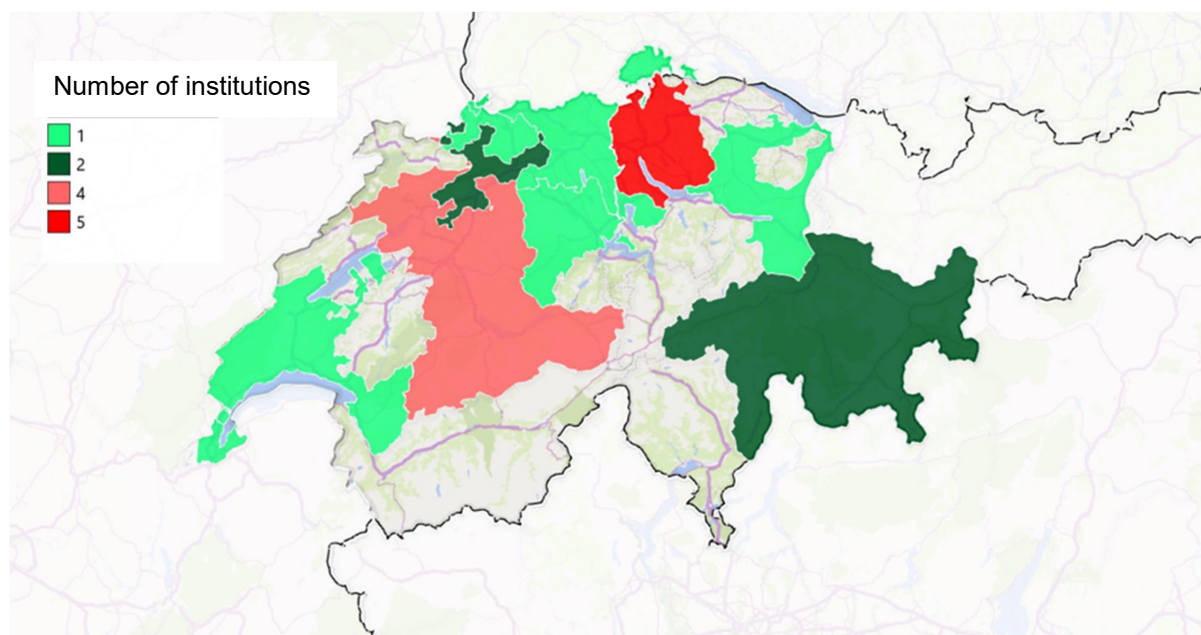
As monitoring is enshrined in the Narcotics Act, the Ordinance on Narcotics Addiction and the Ordinance on the Conduct of Federal Statistical Surveys, the institutions are obliged to participate in monitoring. For this purpose, sociodemographic data, details of treatment history, drug use habits and state of health are collected for every patient when they are admitted (or readmitted following an interruption to treatment). When patients are discharged from treatment (or if they transfer to another institution), data are collected on the central questions asked on admission and on the reasons for discharge.

The goals of diamorphine-assisted treatment can be described as follows (see also: https://www.bag.ad-min.ch/bag/de/home/gesund-leben/sucht-und-gesundheit/suchtberatung-therapie/substitutionsgestu-etzte-behandlung/heroingestuetzte-behandlung.html in German and French only):

- to build a long-term therapeutic alliance;
- to improve the physical and mental health of those affected and promote their social integration;
- to facilitate low-risk use and create the conditions for permanent abstinence;
- to distance those affected from the illegal drug scene and prevent drug-related crime.

The following patient admission criteria apply:

- minimum 18 years of age;
- severe heroin dependency for at least two years;
- at least two unsuccessful treatment attempts (unsatisfactory results or treatment discontinued);
- physical, mental or social consequences that can be attributed to drug use.

HAT is part of the Switzerland-wide client monitoring system in the field of addition counselling act-*info* (addiction, care and therapy information), which – in addition to HAT – collects other statistics, such as on substitution treatment and other inpatient and outpatient treatments (for example for alcohol consumption and illegal drug use). Since 2013, HAT institutions have been able to record these data directly online (https://www.act-info-online.ch). This provides Addiction Switzerland with direct access to partially anonymised results to carry out relevant analyses. Partially anonymised means that for example the name is converted into a code and is not known to the body collecting the statistics. This code is required to allow patients to be observed on a longitudinal basis, e.g. to determine whether they have transferred to another institution or whether they have been readmitted to HAT following an interruption to treatment. Unfortunately, there are currently no data on patients who started treatment before 2013, or who have failed to complete the treatment or switched to another institution since 2013. These data will subsequently be added to the online database. In addition, the Federal Office of Public Health (FOPH) maintains a separate HAT database, which documents treatment approvals by patient. This report presents the results on patients admitted to and discharged from HAT in 2018 according to the act-*info* database.

2 Overview of patient population

According to the FOPH database, there were 1,532 patient approvals for 2018. Approvals are always granted for two years and need to be renewed. The corresponding approvals therefore expire between 2019 and 2021. 809 approvals were issued in 2018. However, these also include renewals, and are thus not only first-time admissions or readmissions. According to the FOPH approval database, there were 73 discharges in 2018.

When writing this report in October 2019, we had complete information on admissions and discharges in 2018 for 19 institutions, and partial information for one additional institution in the monitoring database. In 2018, these 20 institutions registered 163 admissions (2017: 135), and 135 discharges (2017: 131), although 15 of these were not really discharges, merely transfers to another HAT institution.

Box 1. Definitions of treatment, readmission, transfer and episodes:

- *Transfer to another institution* denotes the transfer of a patient to another facility without the treatment being interrupted for more than 30 days.
- A *readmission* is when treatment is resumed after an interruption of 30 days or more.
- *Treatment* refers to uninterrupted treatment lasting more than 30 days, where there may be a change of institution without the treatment being interrupted. In other words, treatments are only designated as repeat treatments if there is an interruption of 30 days or more.
- An *episode* describes a case with an admission and discharge regardless of whether the treatment has been continued in another institution.

The slightly higher number of admissions compared with the previous year is likely to be partly linked to admissions to a new treatment centre that opened in 2018, which may have expanded the patient population. In terms of the significantly higher number of discharges compared with the FOPH database, it should be noted that the discharges documented here also include transfers to other institutions (cf. Box 1), so no new approval was necessary. Another reason may be that termination of treatment was unplanned, if e.g. contact with the patient was lost. The institutions in question may document such discharges on an institutional basis, but they may not report them to the FOPH as official discharges because they are waiting for the approved treatment period to elapse in case they are able to re-establish contact with the patient. It may be that they simply allow the approval to expire as it becomes invalid after two years if it is not renewed.

The majority of admissions (cf. Table 1) are first-time admissions (n=129, including 20 people who have already been discharged); almost all admissions in 2018 are still undergoing treatment, with the exception of 20 patients who started an initial treatment in 2018 but terminated it the same year (n=6, and beginning of 2019 n=14), or who started a repeat treatment and then terminated it (n=3). The patients who are still undergoing an initial treatment are the youngest group, with an average age of 39.7 (2017: rounded to 39 years old), where the youngest person is 19 years old and the oldest 62. The proportion of men is in line with the previous year (Hiltebrand et al., 2018) at 75%. 18.8% are readmissions (n=16) or transfers from another institution (n=12), some of the latter were moves from Geneva to Lausanne after the new facility opened there.

Table 1: Admissions and discharges in 2018

Admission or discharge 2018	Treatment	Treatment period	With admission 2018	Earlier admission	Average age	Aged < 40	Aged 40 - 60	Aged > 60	Male
Discharges	Treatment terminated	One treatment	20	80	44.4	35%	57%	8%	77%
	Treatment terminated	Repeated treatment	3	17	40.2	50%	45%	5%	90%
	Still in treatment	Repeated treatment Transfer to another facility	3	12	40.3	43%	57%	0%	86%
Admissions	Still in treatment	First-time admission	109		39.7	50%	48%	2%	75%
	Still in treatment	Readmission	16		40.4	44%	56%	0%	81%
	Still in treatment	Transfer from another facility	12		41.7	33%	67%	0%	83%

The highest average age is among patients who are discharged after one treatment (n=100), at just over 44, with the oldest person almost 70. The proportion of men is in line with first-time admissions at 77%. Patients with discharges and repeat treatments are significantly younger (40.2 and 40.3 years of age respectively) and the proportion of women is much lower (10% and 14%).

Key takeaways: The age and sex composition indicate that men are more likely than women to interrupt treatment at a relatively young age. In the case of initial treatments and in patients undergoing just one treatment (i.e. without interruptions), the proportion of women is just under a quarter. Among patients undergoing repeat treatments, so with interruptions to treatment of 30 days or more, the proportion of women is much lower.

3 Development of patient numbers

To calculate patient numbers for 2018, we worked on the basis of the data in the 2017 report (cf. Hiltebrand et al., 2018) and adapted them to the number of admissions and discharges in 2018 (cf. Figure 2).

Figure 2: *Development of patient numbers in HAT since 1994.*
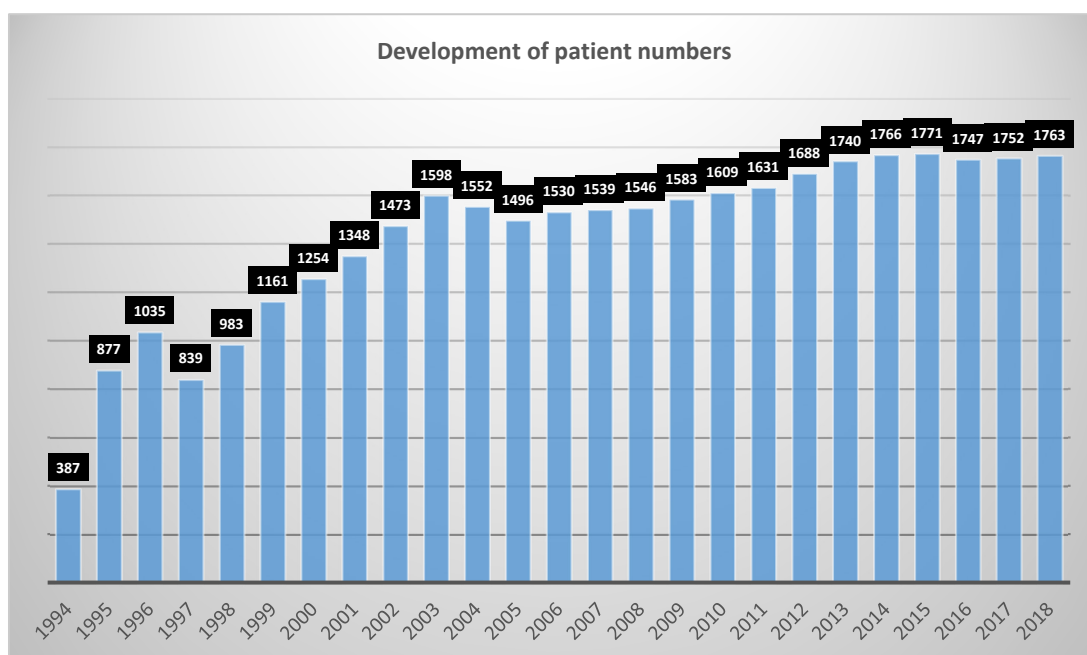
For the age distribution, we refer to Hiltebrand et al. (2018) for 2017. It is clear that the patient population is getting older. In 1994, 78.0% of all HAT patients were under 35. In 2017, this figure was less than 15%. While in 1994 there were hardly any patients over 55, in 2017 this age group made up around 15%.

Figure 3 shows the treatment duration of men and women discharged between 2013 and 2017.

Figure 3:   *Treatment duration of men and women discharged between 2013 and 2017*

Treatment duration 2013-2017

Duration	Men	Women
< 1 YEAR	34%	26%
1- <2 YEARS	14%	17%
2- <5 YEARS	17%	17%
5-<10 YEARS	19%	22%
10+ YEARS	16%	17%
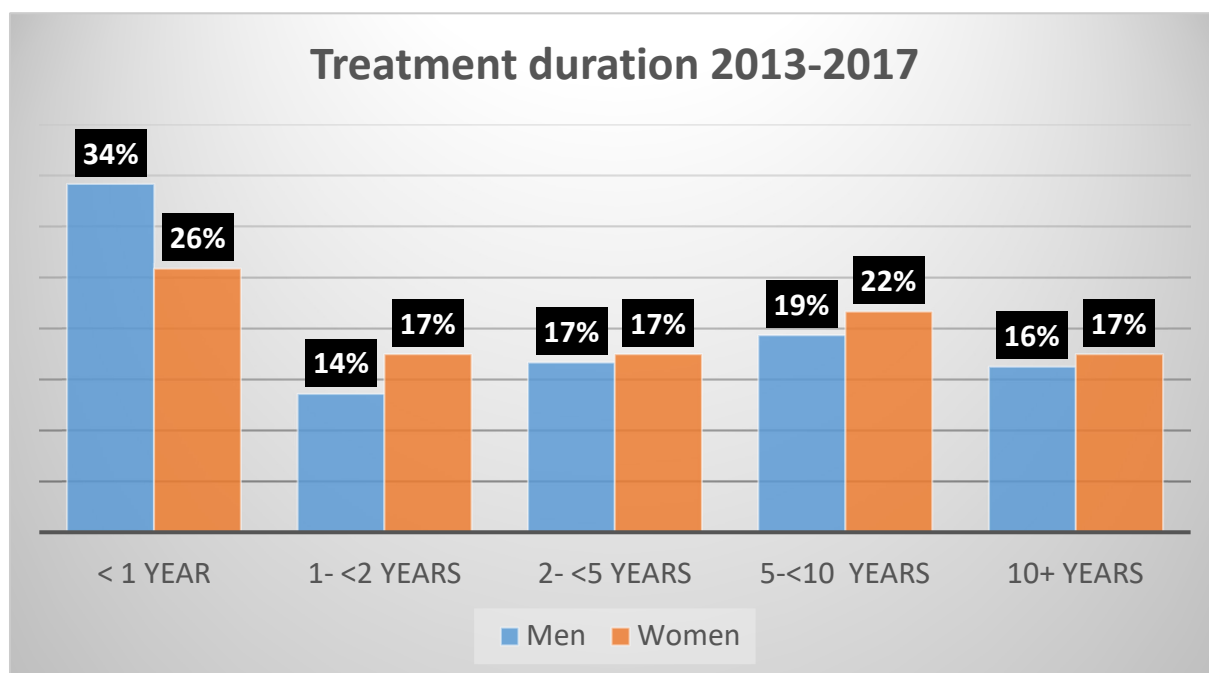
■ Men ■ Women

Women generally stay longer in treatment, and in particular they are less likely to be discharged in the first year than men. We can only speculate on the reasons for this. It may be that the psychological pressure on the 'street' is higher for women, which makes them more compliant with a treatment which may at first not be entirely satisfactory.

Figure 4 shows the treatment durations in the period 2013–2017 compared with 2018. In general, treatments lasted longer in 2018 than in previous years. In particular, there were fewer short-term treatments lasting less than a year. This is probably because for 2018 we are considering treatments, while in previous years episodes were probably often considered (cf. Box 1 for definitions). In this report, a treatment is deemed continued if patients switch institution in the interim but do not interrupt treatment for 30 days or more. Unfortunately, in some cases we do not have the admission dates particularly for female patients pre-2013, which is why we only show the breakdown by sex starting from 2017 in Figure 3. This means that the treatment durations in 2018 are still underestimated as in some cases the treatment duration of patients admitted before 2013 who underwent just one treatment (i.e. no interruption to treatment and readmission) are missing. Based on the conclusive data on treatment durations, the average treatment lasted 5.7 years.

Figure 4:   Treatment duration in 2018 compared with the period 2013–2017

Treatment duration in 2018 compared with the period 2013-2017

Duration	2013-2017	2018
< 1 YEAR	32%	23%
1- <2 YEARS	14%	16%
2- <5 YEARS	17%	28%
5-<10 YEARS	20%	9%
10+ YEARS	17%	24%
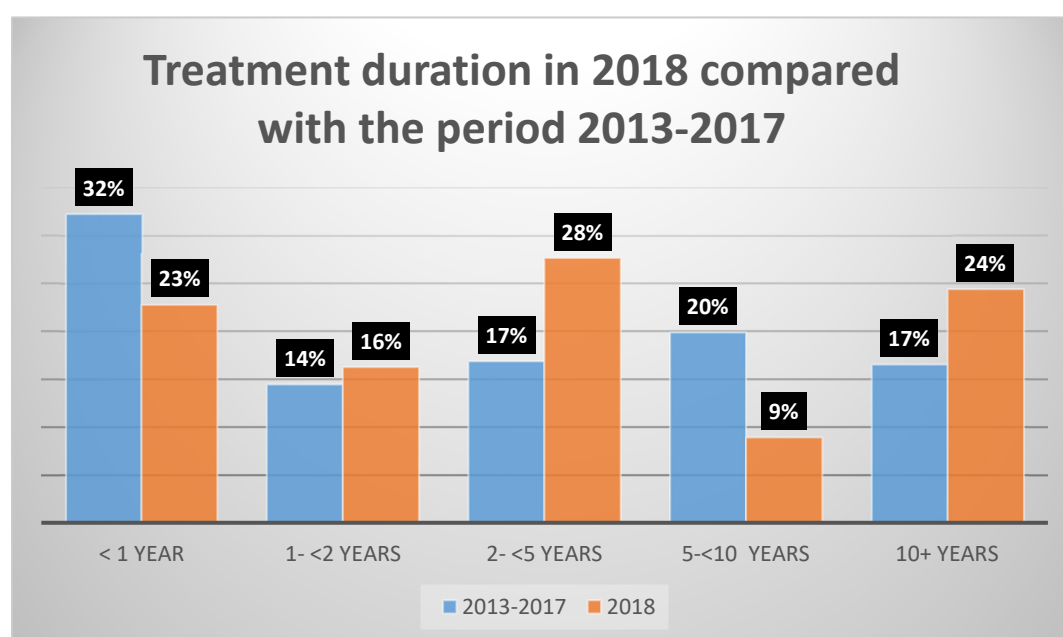
Key takeaways: The number of patients undergoing treatment has been stable for some years. The results indicate that men are more likely to interrupt a treatment than women. Women therefore have a higher treatment compliance. It is noticeable that patients undergoing treatment are getting older on average. The treatment duration was probably underestimated in earlier reports and is higher: 5.7 years on average in 2018.

4   Treatment history of 2018 admissions

The admissions data only take into account those who are really new admissions or readmissions, but not transfers, on whom there is often no information. The total number of admissions in 2018 is 151 (=163-12, cf. Table 1), and in three other cases the data are unclear as to whether the patients were really readmissions (e.g. the discharge date of the previous treatment is not available). We are therefore assuming 148 patients, of whom – as far as we are aware – 19 are readmissions and 129 are first-time admissions.

On admission, particularly on first-time admission (57.3%), the majority of patients plan to administer diacetylmorphine orally (Table 2). Exclusively in first-time admissions (12.1%), multiple administrations are intended, usually oral and intravenous. This could mean that in patients who are readmitted, the preferred method of administration has already been established in earlier treatments. However, the number of readmission cases is very low to be able to draw any firm conclusions.

Table 2:   Intended administration on admission to treatment, 2018

Planned administration	Readmissions 2018		First-time admissions 2018	
	n	%	n	%
Intravenous	7	38.9%	34	27.4%
Oral	9	50.0%	71	57.3%
Intramuscular	2	11.1%	4	3.2%
Multiple administrations	0	0.0%	15	12.1%
Total	18	100.0%	124	100.0%

N.B.:   6 missing values, 5 of which in first-time admissions

As expected, nearly all patients have experience of previous treatment for drug problems (Table 3). In 78.1%, drugs (probably heroin) are the only substance for which patients received prior treatment. That means, however, that 21.9% had multiple substance use problems for which they already underwent treatment.

Table 3:   Treatment experience by substance (multiple answers possible), 2018.

Treatment due to	Readmissions 2018		First-time admissions 2018		First-time admissions, previous year 2017[1]	
	n	%	n	%	n	%
Alcohol problems	1	5.3%	20	15.9%	14	17.5%
Drug problems	19	100.0%	122	96.8%	71	88.8%
Medication problems	3	15.8%	12	9.5%	11	13.8%
Tobacco use	1	5.3%	3	2.4%	1	1.3%
Addictive behaviour	0	0.0%	7	5.6%	6	7.5%

N.B.:   3 missing values, all first-time admissions, [1] cf. Hiltebrand et al. (2018)

As in previous years, substitution treatments were mentioned most frequently (Table 4). 29.3% of patients only stated one type of treatment. More than two thirds had previously undergone different forms of treatment (unsuccessfully). It should be noted that withdrawals refer to professional withdrawal treatments.

It is surprising that not all readmitted patients mention prescribed heroin. This is probably because prescribed heroin is a matter of course in readmitted patients and is therefore no longer explicitly mentioned in the survey. Ultimately, this only concerns three patients. On the other hand, it is remarkable that among first-time admissions there are 18 patients who mentioned having previously been prescribed heroin. Unfortunately, there is no information on this in earlier reports, so we cannot determine whether this is an exception in the 2018 data. It is conceivable that these patients are in fact readmissions who have not been in treatment since 2013 and who therefore cannot be identified as readmissions in the database.

Table 4:   Opioid treatment experience of patients admitted to HAT (multiple answers possible), 2018

Opiate treatment	Readmissions 2018		First-time admissions 2018		First-time admissions previous year 2017[1]	
	n	%	n	%	n	%
Substitution treatment	15	93.8%	95	88.8%	68	85.0%
Prescribed heroin	13	81.3%	18	16.8%	n.s.	n.s.
Inpatient treatment	8	50.0%	50	46.7%	44	55.0%
Supervised withdrawal	9	56.3%	57	53.3%	42	52.5%
Other	1	6.3%	7	6.5%	6	7.5%

N.B.:   25 missing values, 22 of which in first-time admissions; [1] cf. Hiltebrand et al. (2018), n.s. = not specified

As in previous years, most patients were not referred to HAT by a professional body (Table 5). In other words, they either embarked on the treatment of their own accord or on the advice of family, friends or acquaintances.

Table 5:   Referral channel to HAT programme, 2018

Referral channel	Readmissions 2018		First-time admissions 2018		First-time admissions, previous year 2017[1]	
	n	%	n	%	n	%
Conviction/measure/judicial authority/police	0	0.0%	4	3.5%	0	0.0%
Medical practice	2	13.3%	11	9.6%	3	3.8%
Other facility specialised in the treatment of addiction	1	6.7%	27	23.5%	26	33.3%
Other healthcare, medical or social services	1	6.7%	8	7.0%	6	7.7%
No professional entity or specialist involved	10	66.7%	61	53.0%	40	51.3%
Other	1	6.7%	4	3.5%	3	3.8%
Total	15	100%	115	100%	78	100.0%

N.B.:   18 missing values, 14 of which in first-time admissions, [1] cf. Hiltebrand et al. (2018)

Key takeaways: There is very little change with regard to patients' treatment histories compared with previous years. The majority of patients had already received treatment for drug use. However, more than one fifth had also been treated for other addictive behaviours. Of the earlier opioid treatments, the overwhelming majority were substitution treatments. However, more than two thirds had undergone several forms of treatment, such as inpatient treatment and withdrawal. Most patients embarked on the HAT programme of their own accord or on the advice of family, friends or acquaintances.

5 Sociodemographic data

Of the 129 first-time admissions in 2018, 112 (86.8%) were Swiss nationals. This percentage is in line with previous years. Among readmissions, 78.9% were Swiss nationals. Of the patients admitted, six had dual citizenship and 16 people (10.8%) were nationals of just one other country, including Germany (3 people), Portugal (3 people) and Italy (5 people).

It seems that a higher percentage of first-time admissions is single, while readmissions are more likely to be separated or divorced (Figure 5). One patient is already a widower. These differences should be viewed with caution as the data on readmissions are only based on 18 cases. The differences could be explained by the lower age (Table 1) and the presumably shorter drug careers of patients admitted for the first time.

Figure 5:   Marital status of admissions in 2018
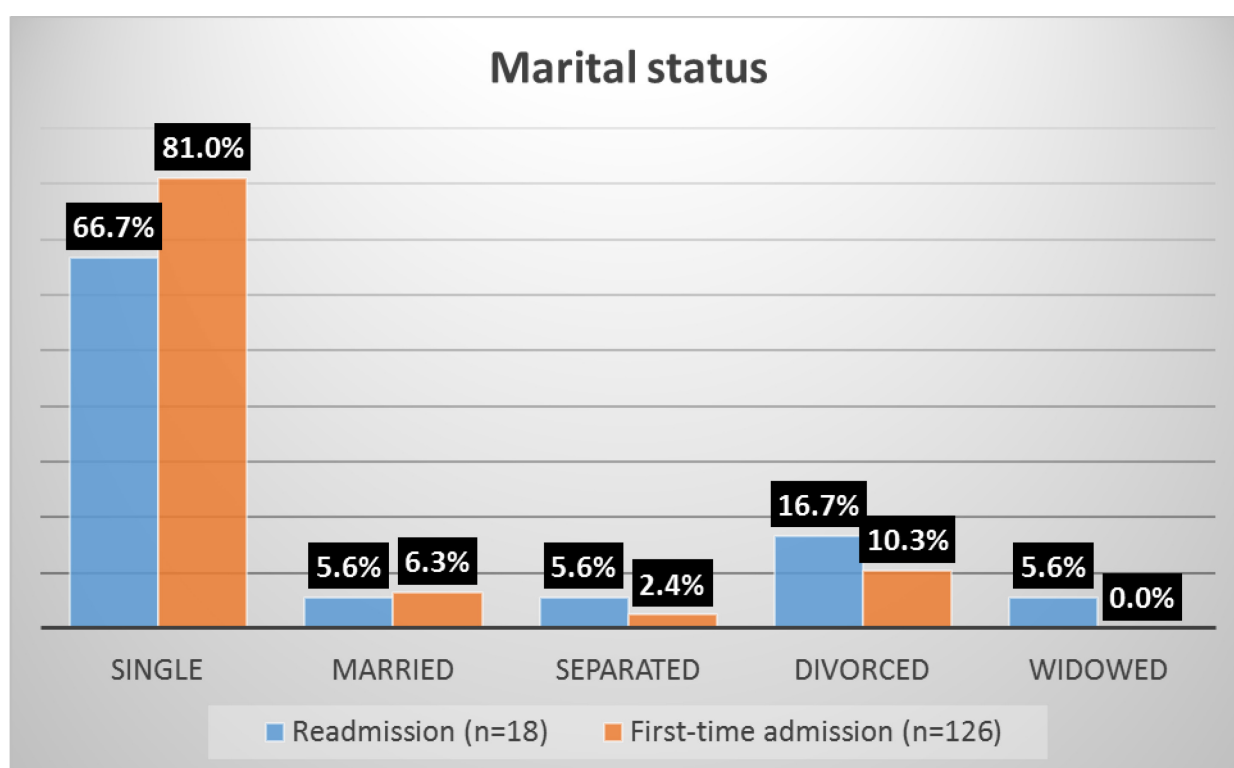
N.B.:   4 missing values, 3 of which in first-time admissions

With the same caveat due to the small number of readmission cases, yet with a similar justification of young age and shorter drug careers in new patients, first-time admissions are more likely than readmitted patients to be living in the family of origin or with their partner or child/children (Figure 6). Indeed, first-time admissions are slightly less likely (24.3%) than readmissions (27.7%) to have children, but five (4.1%) still live with their child/children (not shown in the table). None of the patients who were readmitted in 2018 still lives with their own child/children.

Figure 6:   Whom have you been living with in the past 30 days? 2018

Housing situation 30 days before admission

	Readmission (n=18)	First-time admission (n=122)
ALONE	50.0%	35.2%
FAMILY OF ORIGIN	5.6%	14.8%
WITH PARTNER OR CHILD	11.1%	20.5%
WITH FRIENDS	11.1%	5.7%
PRISON	5.6%	4.9%
TREATMENT FACILITY	11.1%	13.9%
HOSPITAL	0.0%	1.6%
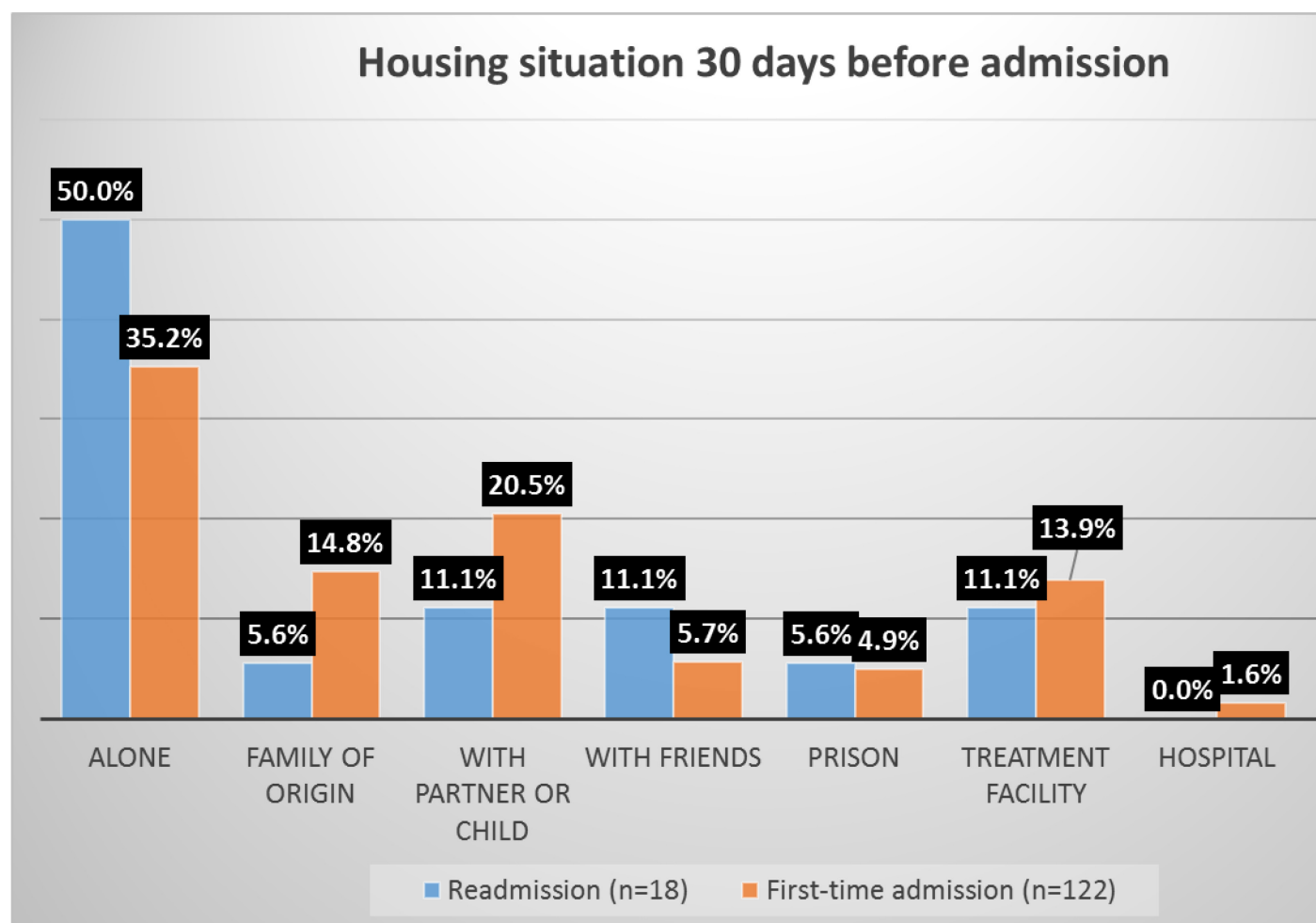
N.B.:   8 missing values, 7 of which in first-time admissions

As Table 6 shows, 81.0% of first-time admissions have a relatively stable housing situation (stable housing situation or treatment facility). This figure was 83.8% in the previous year. The housing situation of readmitted patients is not so good (with 64.7% in a stable housing situation or treatment facility), which in turn indicates longer drug careers.

Table 6:   How have you been living over the past 30 days? 2018

Housing situation	Readmissions 2018		First-time admissions 2018		First-time admissions, previous year 2017[1]	
	n	%	n	%	n	%
Stable housing situation	9	52.9%	82	67.8%	57	71.3%
Unstable housing situation	5	29.4%	17	14.0%	11	13.6%
Prison	1	5.9%	6	5.0%	2	2.5%
Treatment facility	2	11.8%	16	13.2%	10	12.5%

N.B.:   10 missing values, 8 of which in first-time admissions, [1] cf. Hiltebrand et al. (2018)

Key takeaways: This illustrates how important it is not just to consider first-time admissions. First-time admissions are more likely to come from a stable situation. They are more likely than readmitted patients

to be living with their family of origin or with a partner and child/children, and come from more stable housing situations.

It is vital to expand the act-*info* HAT database and/or to supplement the pre-2013 data in order to be able to analyse readmissions over several years with greater case numbers. The data collected on readmissions (including transfers from other institutions) are often the only way to monitor changes in patients' living conditions as patients are often not in attendance when they are discharged so the discharge data are incomplete.

As expected, three quarters of first-time admissions live off social assistance (45.5%) or a pension (29.3%). Just over 15% live off earned income or savings (Table 7).

Table 7:   How have you supported yourself over the past 30 days? 2018

Livelihood	Readmissions 2018		First-time admissions 2018		First-time admissions, previous year 2017[1]	
	n	%	n	%	n	%
Earned income	2	11.8%	17	13.8%	11	13.8%
Savings	0	0.0%	2	1.6%	0	0.0%
Pension (OASI/IV)	3	17.6%	36	29.3%	19	23.8%
Social assistance/welfare	10	58.8%	56	45.5%	43	53.8%
Unemployment insurance	0	0.0%	2	1.6%	2	2.5%
Through partner	0	0.0%	3	2.4%	1	1.3%
Through parents/family members/friends	0	0.0%	3	2.4%	1	1.3%
Dealing/minor trafficking	0	0.0%	0	0.0%	0	0.0%
Other illegal income	0	0.0%	0	0.0%	0	0.0%
Sex work	0	0.0%	1	0.8%	0	0.0%
Daily allowance insurance	0	0.0%	1	0.8%	1	1.3%
Other	2	11.8%	2	1.6%	2	2.5%
Total	17	100.0%	123	100.0%	80	100.0%

N.B.: 8 missing values, 6 of which in first-time admissions, [1] cf. Hiltebrand et al. (2018)

In 2018, 24.0% of all first-time admissions were gainfully employed (full- or part-time work or odd jobs). The majority were thus either unemployed (either actively looking for work or not; 48.8%), or not active on the labour market (pensioner, incapacity to work, housewife/house husband; 24.0%; cf. Table 8).

Table 8:   What was your employment status in the past 30 days? 2018

Employment status	Readmissions 2018		First-time admissions 2018		First-time admissions, previous year 2017[1]	
	n	%	n	%	n	%
Full-time work (over 70%)	3	17.6%	17	13.6%	7	8.8%
Part-time work	1	5.9%	7	5.6%	1	1.3%
Odd jobs	0	0.0%	6	4.8%	2	2.5%
In training	0	0.0%	2	1.6%	0	0.0%
Unemployed and active jobseeker	0	0.0%	16	12.8%	12	15.0%
Unemployed and not active jobseeker	6	35.3%	45	36.0%	32	40.0%

Pensioner (pension, OASI, savings)	0	0.0%	8	6.4%	2	2.5%
Incapacity to work (IV/daily allowance)	4	23.5%	21	16.8%	19	23.8%
Housewife/house husband	0	0.0%	1	0.8%	1	1.3%
Other	3	17.6%	2	1.6%	4	5.0%
Total	17	100%	125	100%	80	100.0%

N.B.: 6 missing values, 4 of which in first-time admissions, [1] cf. Hiltebrand et al. (2018)

It is interesting to note that 60.5% of patients admitted for the first time have completed vocational education and training or higher education (Figure 7). There are indications (not shown) that women are more strongly represented than men (16.1% vs 10.7%) at high educational levels in particular (federal academic baccalaureate or teacher training, professional education and training, university of applied sciences, or university). This was not observed in previous reports, so we do not have a basis for comparison to determine whether these are random fluctuations, which given the small number of cases for women is possible. However, more than a third of first-time admissions either has no or only compulsory education (34.5%).

Figure 7: Educational attainment, 2018
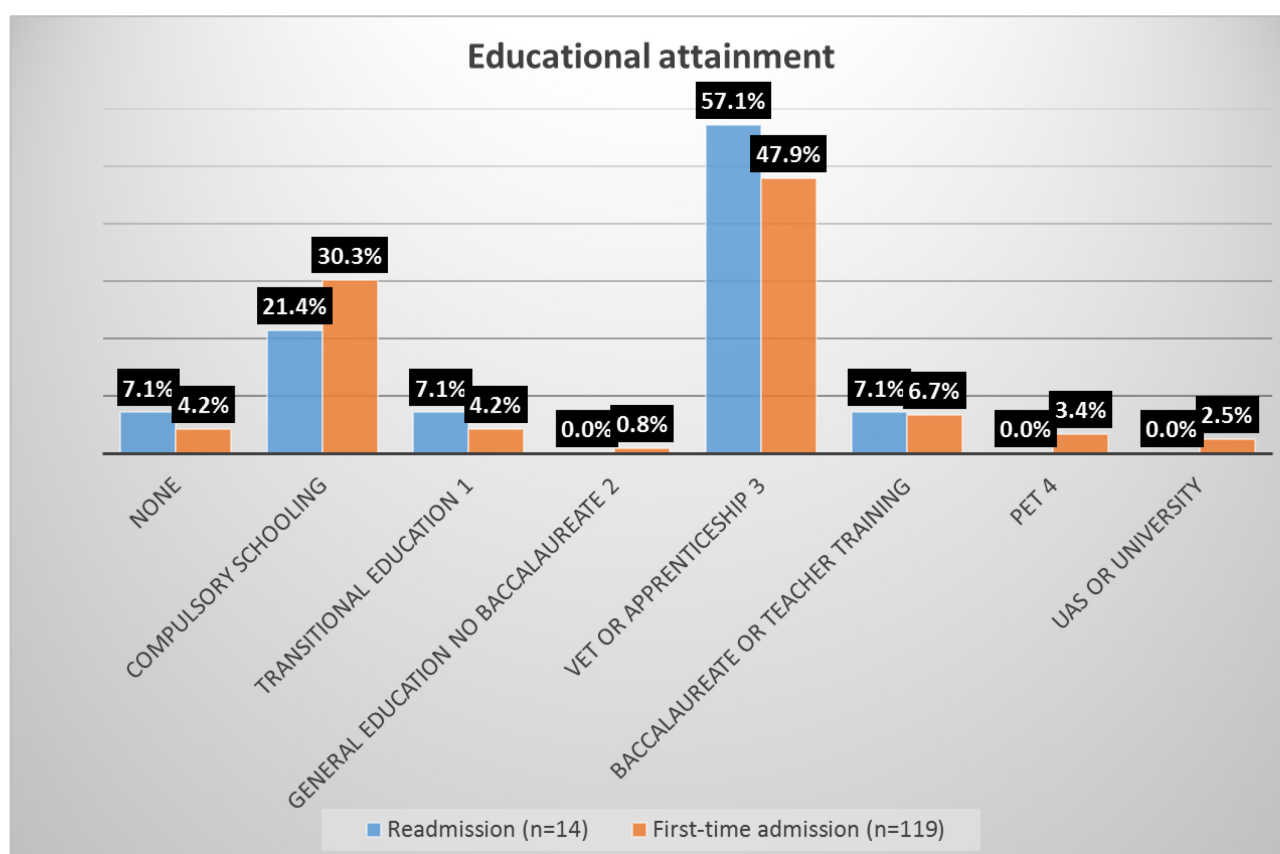
N.B: 15 missing values, 10 of which in first-time admissions

1 : 1-year of training: pre-apprenticeship, 10th grade (orientation year), 1-year vocational prep school, one-year home economics programme, language school qualification, 1-year volunteering programme, bridging programmes, etc.

2 : 2–3 years of training: specialised school DMS, upper secondary specialised school FMS, school of transportation, or similar

3 : 2–4 years of training: apprenticeship, VET programme with Federal VET Certificate or Federal VET Diploma, informal one- or two- year apprenticeship, full-time vocational school, upper secondary level commercial school, trade school, etc.

4 : Federal Diploma of Higher Education**,** Advanced Federal PET Diploma or master's degree, professional education institution (PEI) for technology, PEI for business, engineering school, PEI for business and administration, PEI for design, PEI for social work, or similar.

Key takeaways: The majority of patients has completed at least 2–4 years of training, and just under a quarter has an (irregular) earned income (from full-time work, part-time work or odd jobs). The majority of patients live off a pension or social assistance, however.

6 Substance use

Box 2 Data uncertainty on substance use:

The data on substance use are very strongly influenced by missing values. There are two types of missing values: a) It is explicitly stated that the information is not available (unknown), which means there is a conscious statement, or b) no response, which means missing values. The answer form on substance use is very complex. Respondents first need to tick whether or not they have ever used the substance in question. Only if they answer "yes" does another input screen open on use in the last 30 days, on age of first use, and on types of use etc. This screen does not open if someone ticks "no", or if they neither tick "yes" nor "no" (i.e. no response). This leads to the problem that if the substance in question is not used, some of those responsible for data entry may skip this substance and not explicitly state "no". There are now two scenarios for calculation:

a)   Scenario 1: Only valid data where respondents have ticked yes/no are used.
b)   Scenario 2: No response (but not the explicit response "unknown") is taken as no use.

On account of the many missing values, all admissions (including readmissions) were used to increase the number of cases. Tables 9 and 10 show the results regarding lifetime substance use, age of first use and days of use in the last 30 days. For lifetime use, two scenarios were taken into consideration (cf. Box 2). We can draw different conclusions depending on which scenario we adopt. So, for example, had LSD been used by 85%, or by just over a third (35.4%)? Do nearly all patients smoke (99.0%) and do they almost all drink alcohol (87.5%), or are the real figures "only" around two thirds (67.1% and 63.2% respectively)?

Fortunately, the rankings of prevalence of substance use are quite similar in both scenarios. Figure 8 shows the lifetime prevalence according to scenario 2. This is the scenario that was adopted in earlier reports (Figure 9). It is clear that irrespective of the scenario used, patients have also frequently used cocaine, tobacco, alcohol, cannabis and benzodiazepines in addition to heroin.

Among those who had used the substance in question in the 30 days pre-admission, the number of days on which illegal heroin and methadone, other opioids and cannabis (Table 10) were used is high (15 days or more; only considered if there are more than 10 users).

Figure 8: *Lifetime prevalence of various substances, all admissions (including re-admissions), 2018, scenario 2 (no response was taken as no use)*

Lifetime use, scenario 2

Substance	%
HEROIN (ILLEGAL)	96%
COCAINE POWDER	79%
TOBACCO	67%
ALCOHOL	63%
CANNABIS	60%
BENZODIAZEPINES (NOT INDICATED)	56%
METHADONE (ILLEGAL)	45%
LSD	35%
MDMA AND RELATED SUBSTANCES...	33%
AMPHETAMINE	32%
CRACK	21%
GHB/GBL	20%
OTHER HALLUCINOGENS	16%
METAMPHETAMINE	15%
OTHER OPIOIDS/OPIATES	13%
KETAMINE	13%
OTHER HYPNOTICS AND SEDATIVES	13%
BUPRENORPHINE (ILLEGAL)	12%
OTHER TYPES OF COCAINE	10%
BARBITURATES	8%
FENTANYL	6%
OTHER STIMULANTS	6%
INHALANTS/VOLATILE SUBSTANCES	3%
SYNTHETIC CATHINONES	3%

Table 9:   Lifetime prevalence and age of first use in 30 days before admission, 2018

Substance	Lifetime use					Age of first use			
	Missing values	Of which "not an-swered"	Valid data	Yes, lifetime use, scenario 1	Yes, lifetime use, scenario 2	Valid data (of yes)	min	max	Average age of first use
Alcohol	52	37	96	87.5%	63.2%	64 (84)	10	30	14.5
Heroin (illegal)	18	5	130	99.2%	95.6%	105 (129)	10	48	19.7
Methadone (illegal)	46	28	102	56.9%	44.6%	39 (58)	14	48	24.1
Buprenorphine (illegal)	68	51	80	20.0%	12.2%	12(16)	20	44	30.4
Fentanyl	73	55	75	10.7%	6.2%	5(8)	20	41	29.2
Other opioids/opiates	75	56	73	23.3%	13.2%	7(17)	12	46	25.0
Cocaine powder	39	29	109	100.0%	79.0%	82(109)	11	36	19.5
Crack	76	54	72	37.5%	21.4%	18(27)	15	36	23.2
Other types of cocaine	92	67	56	21.4%	9.8%	8(12)	13	26	18.9
Amphetamine	90	84	58	79.3%	32.4%	32(46)	13	47	19.1
Methamphetamine	105	97	43	48.8%	15.0%	17(21)	13	35	20.8
MDMA and related substances (Ecstasy)	90	83	58	79.3%	32.6%	37(46)	13	38	19.3
Synthetic cathinones	114	106	34	11.8%	2.9%	4(4)	18	30	22.0
Other stimulants (e.g. non-indi-cated methylphenidate, modafinil or khat)	114	105	34	23.5%	5.8%	5(8)	18	49	30.2
Barbiturates	102	87	46	21.7%	7.5%	8 (10)	14	33	21.9
Benzodiazepines (not indicated)	67	59	81	96.3%	55.7%	48(78)	15	46	23.7
GHB/GBL	92	80	56	48.2%	19.9%	19(27)	15	45	22.2
Other hypnotics and sedatives	102	89	46	37.0%	12.6%	9(17)	13	39	25.3
LSD	88	84	60	85.0%	35.4%	38(51)	11	35	18.2
Ketamine	105	98	43	41.9%	12.8%	13(18)	15	33	21.1
Other hallucinogens	107	101	41	56.1%	16.2%	15(23)	12	33	19.7

Table 9:   *Lifetime prevalence and age of first use in 30 days before admission, 2018 (continued)*

Substance	Lifetime consumption					Age of first use			
	Missing values	Of which "not an-swered"	Valid data	Yes, lifetime con-sumption, scenario 1	Yes, lifetime con-sumption, scenario 2	Valid data (of yes)	min	max	Average age of first use
Inhalants/volatile substances	106	103	42	11.9%	3.4%	4(5)	14	30	
Cannabis	57	56	91	96.7%	59.9%	69(88)	9	30	15.2
Tobacco	49	47	99	99.0%	67.1%	74(98)	7	46	14.9

N.B.: scenario 1: only available yes and no data were used
          scenario 2: no response (but not "unknown" as a response) was taken as no use.

Table 10:   Drug use in the 30 days before admission, 2018

	Valid data	No use	1-9 days	10-19 days	20-30 days	Average	n with use 30 days	Average in users
				Use in the last 30 days				
Alcohol	57	31.6%	24.6%	7.0%	36.8%	12.7	39	18.5
Heroin (illegal)	97	16.5%	16.5%	9.3%	57.7%	18.8	81	22.5
Methadone (illegal)	29	62.1%	10.3%	0.0%	27.6%	8.6	11	22.7
Buprenorphine (illegal)	9	100.0%	0.0%	0.0%	0.0%	0.0	0	0.0
Fentanyl	3	66.7%	0.0%	0.0%	33.3%	6.7	1	20
Other opioids/opiates	7	28.6%	14.3%	0.0%	57.1%	17.3	5	24.2
Cocaine powder	77	35.1%	35.1%	15.6%	14.3%	7.8	50	12
Crack	12	33.3%	33.3%	16.7%	16.7%	8.7	8	13
Other types of cocaine	5	80.0%	0.0%	0.0%	20.0%	6.0	1	30
Amphetamine	25	88.0%	4.0%	0.0%	8.0%	2.5	3	20.7
Methamphetamine	11	81.8%	18.2%	0.0%	0.0%	0.3	2	1.5
MDMA and related substances (Ecstasy)	29	89.7%	10.3%	0.0%	0.0%	0.3	3	3.33
Synthetic cathinones	2	100.0%	0.0%	0.0%	0.0%	0.0	0	0
Other stimulants (e.g. non-indicated methylphenidate, modafinil or khat)	6	100.0%	0.0%	0.0%	0.0%	0.0	0	0
Barbiturates	6	80.0%	0.0%	0.0%	20.0%	5.0	1	30
Benzodiazepines (not indicated)	48	35.4%	25.0%	6.3%	33.3%	11.7	31	18.1
GHB/GBL	14	78.6%	7.1%	0.0%	14.3%	4.4	3	20.3
Other hypnotics and sedatives	9	33.3%	22.2%	22.2%	22.2%	10.9	6	16.3
LSD	30	96.7%	0.0%	3.3%	0.0%	0.5	1	15
Ketamine	10	90.0%	10.0%	0.0%	0.0%	0.1	1	1
Other hallucinogens	13	92.3%	0.0%	0.0%	7.7%	2.3	1	30
Inhalants/volatile substances	4	75.0%	0.0%	25.0%	0.0%	3.0	1	12
Cannabis	60	50.0%	16.7%	6.7%	26.7%	8.7	30	17.5
Tobacco	65	6.2%	7.7%	0.0%	86.2%	15.9	61	14.9

Figure 9 shows the average age of first use of the various substances. It is important to emphasise that this has only been calculated for lifetime users of the substance in question. Not all HAT patients use all these substances (cf. Figure 8). The values are average values in users. Table 9 shows the range of ages of first use.

Here we see the typical drug use progression. At around 14–15, patients start using the legal substances alcohol and tobacco, as well as cannabis. Then, at around 18–19, come the "soft" drugs or those that are readily available, such as LSD, inhalants, amphetamines and Ecstasy. At around the same time, they start using cocaine and heroin. Other substances are then likely to be a consequence of the drug dependency, such as barbiturates, crack, benzodiazepines and methadone. Much later, around the age of 30, come fentanyl and buprenorphine, probably also because these substances have not been on the market for long.

Figure 9:   *Age of first use of various substances, 2018 admissions*
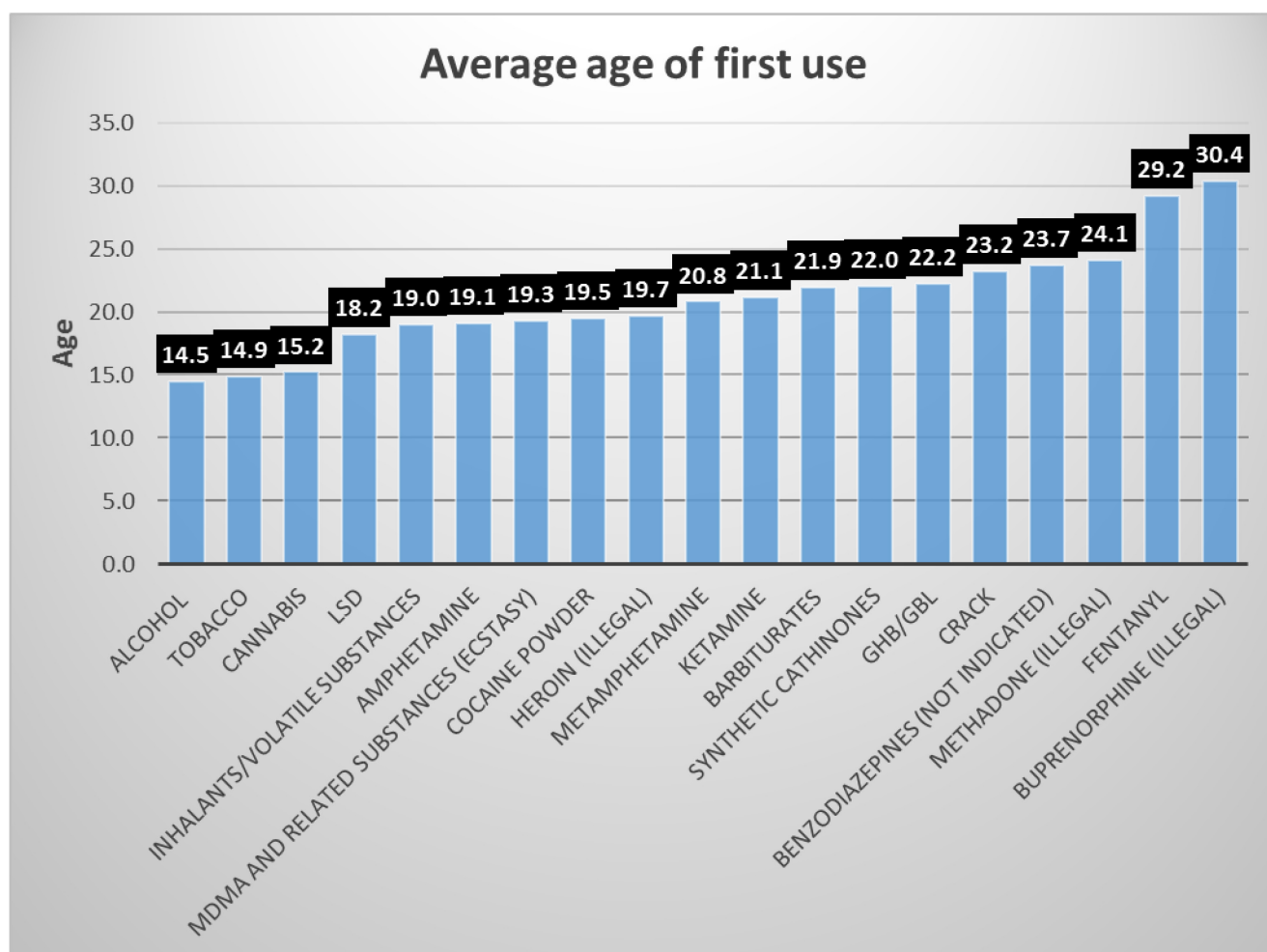
N.B: Types of cocaine other than crack and powder, as well as other stimulants, other hypnotics and sedatives, other stimulants and other hallucinogens were not taken into account in the chart. They can be found in Table 9.

Key takeaways: It should come as no surprise that HAT patients are often users of multiple substances. As well as using heroin, they often use cocaine, cannabis and benzodiazepines in particular, as well as the legal substances alcohol and tobacco. In the 30 days before admission, methadone, other opioids and cannabis were frequently used in addition to heroin. The prototypical drug use career starts with the

legal substances alcohol and tobacco, as well as cannabis. It then evolves via "soft drugs" to cocaine and heroin use.

7 Hepatitis and HIV

The evaluation of hepatitis and HIV data considered all cases where either test results or data on vaccination status were available. Persons were thus included who had never been tested for hepatitis A or B. The hepatitis test results available to us do not allow differentiation between an acute and a chronic disease.

7.1 Injection behaviour

Besides unprotected sexual contact, the use of contaminated needles is one of the main causes of hepatitis and HIV, which is of particular relevance to HAT patients. The following section refers to all admissions, including readmissions.

It is interesting to note that by their own account, 22.3% of HAT patients have never injected (cf. Figure 10). This also explains the high proportion of oral treatments (cf. Table 2). In the 12 months prior to admission, 40% of patients had not injected (74.2% of 77.7% =57.7% had injected). It should be borne in mind that there are some missing values, but that they are relatively small.

Figure 10:   *Intravenous drug use*
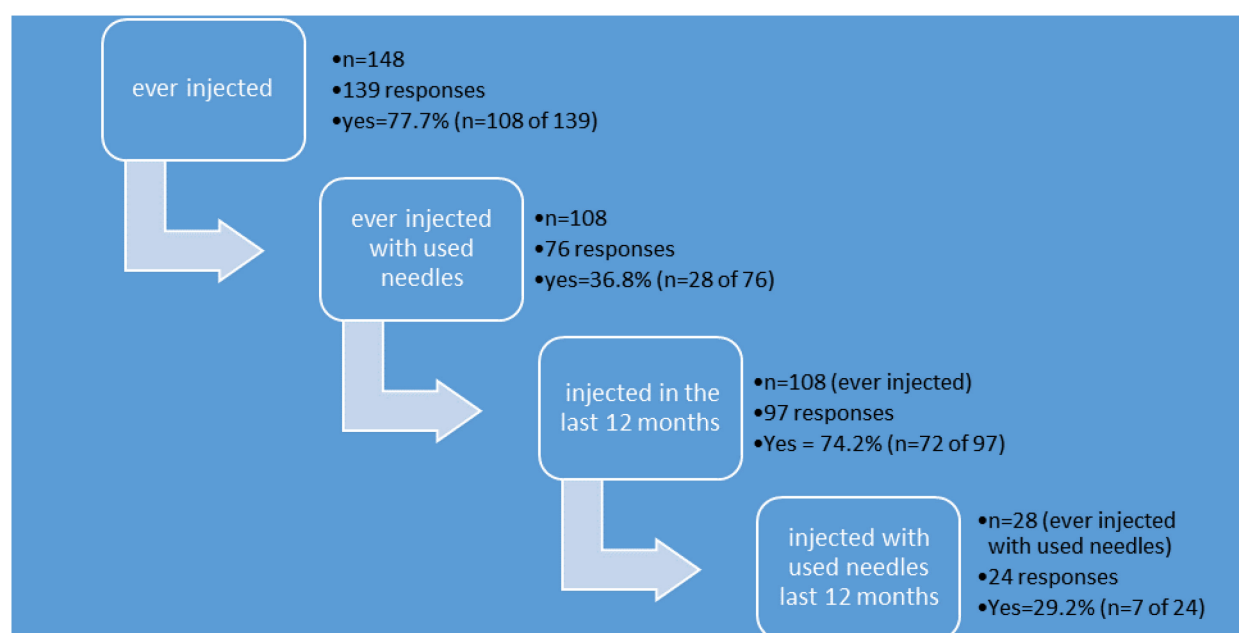
Just under one third (36.8% of 77.7%=28.6%) have used potentially contaminated needles, and just under 10% (29.2% of 28.6%=8.3%) have done so in the 12 months before being admitted to treatment.

Key takeaways: Non-injection drug use is not uncommon among this in general severely dependent patient population. Just under a third had injected with used needles in their lives, and just under 10% had done so in the 12 months before admission, thus making them very vulnerable to hepatitis and HIV.

7.2 Hepatitis A

With hepatitis A, there is only an acute disease, and patients can either test positive or negative. A vaccination is recommended, but once someone has recovered from the disease, they have lifelong immunity. After declining for several years, the number of hepatitis A cases in Switzerland increased by a factor of 2.5 in 2017, to 110 cases (FOPH Bulletin 23 of 4 June 2018).

Of the 148 admissions (including readmissions), for 52 persons it is not known whether they have been vaccinated, or whether they have had a test. That equates to 35.1%.

A further 16 patients answered the question on vaccination, but did not know whether they had previously had a test. Three people had been fully vaccinated and two people were not vaccinated as they were positive. These five people are assigned to the "immune" group. In total, 37 people (including those who were tested) stated that they were fully vaccinated. That equates to 25% of 148 people. However, the vaccination status is unknown for 77 patients (52.0%). Only four people said they had never had a test, and one person refused to answer. 75 persons stated that they had had a test, and a result was available for 71 people. In addition to the five people who were added based on the vaccination question, a test result was available for 76 people, and the hepatitis A status was unknown for 72 people (Table 11).

Table 11:   Hepatitis A status in 148 admissions (including readmissions) in 2018

Status	n (=148)	% of all	% where results available
Unknown	72	48.6%	
Negative, so susceptible	34	23.0%	44.7%
Immune (vaccinated, recovered infection or recovered from acute infection)	42	28.4%	55.3%

These results are more or less in line with those of previous years.

Key takeaways: Our knowledge about the hepatitis A status of this vulnerable population is simply too low. This concerns both the vaccination status and the status of hepatitis A tests. Just under half of patients could be susceptible and thus require adequate information and prevention.

7.3 Hepatitis B

In Switzerland, around 44,000 people are infected with chronic hepatitis B (FOPH, Infodrog, 2019). Of those who are infected in adulthood, around 5–10% develop chronic hepatitis B. Prevalence and incidence of hepatitis B have fallen sharply worldwide. There are around 40 new cases of acute hepatitis B every year in Switzerland, with men much more likely to be affected (around 75% of cases). The majority of infections (around 55%) occur in the 35-to-60 age group (https://www.bag.admin.ch/bag/en/home/krankheiten/krankheiten-im-ueberblick/hepatitis-b.html).

In order to obtain halfway conclusive results, all admissions in 2018 were analysed for hepatitis B, including readmissions. Three markers are of particular significance. **Anti-HBs** are antibodies that work against the membrane protein on the cell surface of the hepatitis B virus. When the **HBs antigens (HBsAg)** disappear, anti-HBs show that a patient has immunity, either because they have recovered from the disease or following vaccination. The HBsAg thus shows whether the infection is acute or chronic. HBc antibodies **(anti-HBc)** show whether the patient has had contact with the virus. They are

positive if the patient is acutely or chronically infected, or if they have had the virus and recovered (cf. Table 12).

To be able to distinguish between persons who are immune due to vaccination or because they have recovered from the infection, we need to know whether they have been vaccinated or whether the anti-HBc is present.

Protection is only provided, however, if the person vaccinated develops a reliably detectable level of anti-HBs in the weeks after the last dose. However, follow-up is often neglected.

Table 12:   Interpretation of Hepatitis B markers

Anti-HBc	HBsAg	Anti-HBs	Status
positive	positive		Currently infected
positive		positive	Recovered infection
positive	negative	negative	Recovered, no immune protection
	negative	positive	Vaccinated or recovered, no infection present
negative		positive	Vaccinated, never had contact with the virus

58.8% (n=87) of admitted patients stated that they had been tested for hepatitis B. No information is available for 38.5% (either unknown or missing data). Only three people explicitly stated that they had never had a test. In 33 persons the test was carried out on admission: this equates to 22.2% of all admissions. A further 40 patients (27.0%) said they had previously been tested.

To obtain a more or less reliable diagnosis, you need at least two markers, or strictly speaking all three. As Table 13 shows, complete test results were only available for 20.2% (n=30) of the 148 admissions.

Table 13:   Hepatitis B test in 148 first-time admissions in 2018 (including readmissions)

Marker	positive	negative	% of all admissions (n=148)
Anti-HBc	12	42	36.5%
HBsAg	2	41	29.1%
Anti-HBs	30	19	33.1%
Complete test results			20.2%
No test results			58.8%

In the test results, efforts were also made to include information on whether patients had already been vaccinated in order to be able to draw a somewhat more reliable conclusion on cases in which only incomplete markers are present. No information is available for 48.0% of patients (n=71). 44 patients said they were fully vaccinated, which equates to 57.1% of the 77 patients for whom data are available. Eight patients stated that they had been partially vaccinated. In nine patients no test was carried out as they had tested positive for HBc antibodies (including or excluding HBs antibodies). Four people refused to be tested, in two patients the test needs to be repeated (has been agreed) and ten patients gave other reasons for not wanting to be vaccinated. Table 14 indicates the best guess hepatitis B status of 78 (of 148) admissions.

Table 14:   Presumed hepatitis B status of 78 admissions

	Patients	%	Remark
Susceptible	26	33%	Clear diagnosis only available for 13 patients
Immune through vaccination	20	26%	
Immune (recovered from infection)	9	12%	
Contact with virus (unknown status)	4	5%	1 patient presumed currently in-fected
Presumably recovered; no or unclear immune protec-tion	3	4%	
No markers present, but full vaccination	16	21%	
Total	78	100%	

Key takeaways: The data on hepatitis B are insufficient due to a frequent lack of diagnosis. We need to clarify in future why tests are so rarely carried out. But even from the relatively scant data it is clear that only a small number of people are infected with acute or chronic hepatitis B. However, around a third could still be susceptible to infection.
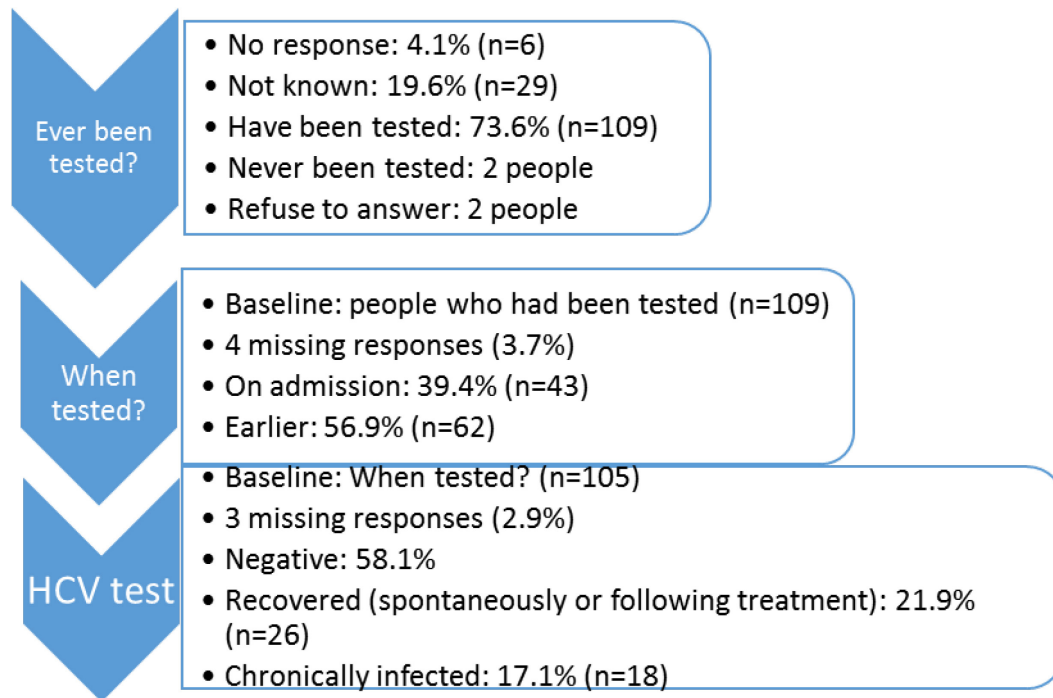
7.4 ....Hepatitis C

In Switzerland, around 0.5% of the population is infected with the hepatitis C virus, of whom around 40,000 have a chronic infection (FOPH, Infodrog, 2018). The number of reported cases in Switzerland has been stable since 2006, with around 50 new cases reported every year. The proportion of men affected has been consistently high, and is approximately 70% of cases. Young adults aged between 20 and 39 are most often affected (accounting for around 60–65% of cases). The majority of newly diagnosed infections can be attributed to intravenous drug use.

Every year, around 500 intravenous drug users are diagnosed with an HCV infection in Switzerland. There are approximately between 7,700 and 15,400 drug users in the country infected with HCV (FOPH, Infodrog, 2019). It is estimated that 30% of persons undergoing inpatient addiction treatment or attending low-threshold contact and drop-in centres are infected with hepatitis C. In patients admitted to heroin-assisted treatment for the first time, it is estimated that 60% are infected with HCV (FOPH, Infodrog, 2019).

All admissions in 2018 – including readmissions – were included in the analysis of hepatitis C (Figure 11) as annual analyses are recommended because patients are not immune even after they recover, and reinfection is possible. There is no vaccination against hepatitis C.

Figure 11:   *Conduct of Hepatitis C tests for all admitted patients (including re-admitted patients) in 2018*

Ever been tested?
- No response: 4.1% (n=6)
- Not known: 19.6% (n=29)
- Have been tested: 73.6% (n=109)
- Never been tested: 2 people
- Refuse to answer: 2 people

When tested?
- Baseline: people who had been tested (n=109)
- 4 missing responses (3.7%)
- On admission: 39.4% (n=43)
- Earlier: 56.9% (n=62)

HCV test
- Baseline: When tested? (n=105)
- 3 missing responses (2.9%)
- Negative: 58.1%
- Recovered (spontaneously or following treatment): 21.9% (n=26)
- Chronically infected: 17.1% (n=18)

Overall, it should be noted that of 148 patients admitted in 2018, the hepatitis C status is ultimately unknown for 46 patients (31.1%). One reason for this is that for 23.7% (cf. Figure 11) it is not known whether or not they had ever been tested. This partially corroborates the assumption that between a quarter and half of patients in opioid-assisted treatment have not been tested (FOPH, Infodrog, 2019). Of those who answered the question, only two explicitly said they had not been tested. For 73.6% it is at least known that they had once been tested, even if the test result is not fully known. Of those who had been tested, just under 40% were tested on admission, and 56.9% earlier (cf. Figure 11), although the test was performed longer than 12 months ago in around a third of patients. Fortunately, of those who said when they had been tested, 58.1% were negative. In terms of patients whose test status was known, 59.8% were negative. At the time of the test, 21.9% were recovered and 17.1% were chronically infected. If we relate this figure only to persons whose test status was available, 17.6% were chronically infected.
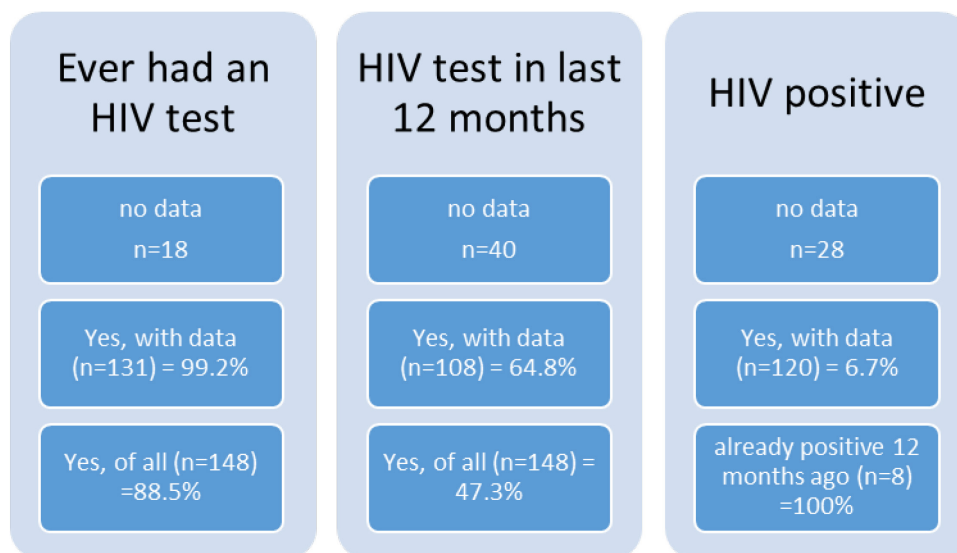
The percentage of chronically infected patients in HAT has been declining for some years. According to Hiltebrand et al. (2018), it was still 72.7% in the period 2001 – 2004, 37.1% in the period 2013-2016, and 33.3% in 2017. In 2018, the prevalence of chronic hepatitis C infections was below 18%. It should be noted, however, that the statistics in Hiltebrand et al. (2018) only refer to cases for which there are valid data. In 2001–2004 this only concerns 6.1% of all first-time admissions, in 2013–2016 51.4%, in 2017 60.0% and in 2018 almost 70%. It may therefore be that tests were only carried out in previous years if there was a strong suspicion that a patient was infected, which would go some way to explaining the apparent sharp decline in chronic infections. But it also shows that tests are now performed more often, and that measures to increase HCV testing have paid off and may have a preventative effect.

Key takeaways: The data on hepatitis C in heroin-assisted treatment have significantly improved in recent years. Nevertheless, for more than 30% of patients admitted in 2018 there is no information on hepatitis C status. This is much lower than in previous years, however. In patients for whom test results are available, the majority tested negative and the prevalence of chronically infected patients has fallen sharply, to below 18%.

7.5 ....HIV

88.5% (n=131 of 148) stated that they had ever had an HIV test. Only one person said she had never had an HIV test. In other words, almost 100% of those for whom data are available had already had an HIV test (cf. Figure 12).

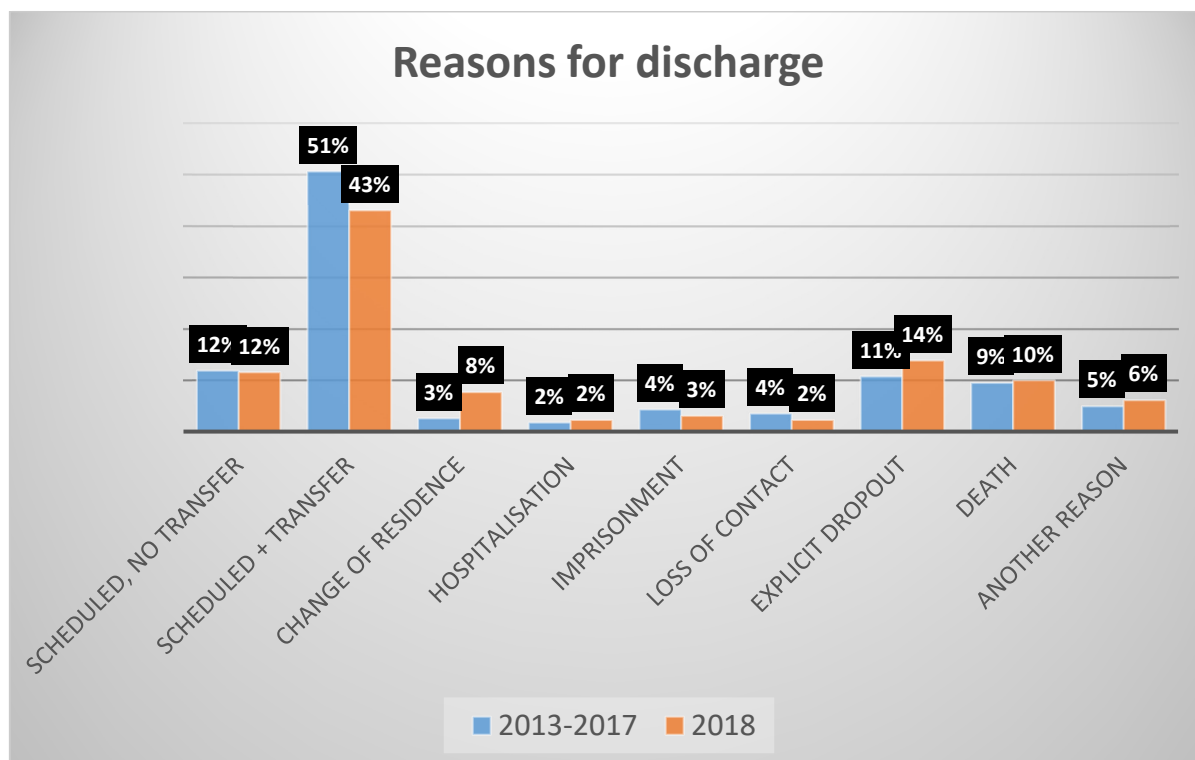*Figure 12:   HIV tests conducted and HIV status, admission 2018*

Ever had an HIV test

| no data n=18 |
| Yes, with data (n=131) = 99.2% |
| Yes, of all (n=148) =88.5% |

HIV test in last 12 months

| no data n=40 |
| Yes, with data (n=108) = 64.8% |
| Yes, of all (n=148) = 47.3% |

HIV positive

| no data n=28 |
| Yes, with data (n=120) = 6.7% |
| already positive 12 months ago (n=8) =100% |

That said, only 64.8% of those who for whom data are available had been tested in the last 12 months. If we relate this to all admissions, including those for whom there are no data (unknown or missing data), fewer than 50% of all admissions had undergone an HIV test in the previous 12 months. Eight patients are HIV positive, but all eight said they first contracted the virus more than 12 months previously. As in the previous year (cf. Hiltebrand et al., 2018), there were therefore no new cases of HIV in 2018.

Key takeaways: According to information from patients, there were no new cases of HIV infection in 2018. It should be noted, however, that only around half of patients had been tested within the previous 12 months.

8 Reasons for discharge

The reasons for discharge have been very similar since 2013 (cf. Figure 13). The predominant one is scheduled end of treatment and transfer to another facility or form of treatment. This includes transfer to a methadone programme, either within the same facility or at another one (including general practitioner), or a change of substance (for example to Sevre-Long). In 2018 there were 13 deaths. This is roughly in line with previous years.

Figure 13:   *Reasons for discharge in 2018 compared with 2013–2017.*

Reasons for discharge

Categories: SCHEDULED, NO TRANSFER; SCHEDULED + TRANSFER; CHANGE OF RESIDENCE; HOSPITALISATION; IMPRISONMENT; LOSS OF CONTACT; EXPLICIT DROPOUT; DEATH; ANOTHER REASON

2013-2017 / 2018 values: 12% 12%; 51% 43%; 3% 8%; 2% 2%; 4% 3%; 4% 2%; 11% 14%; 9% 10%; 5% 6%

N.B.:   N=130 including transfers, 5 missing values; [1] cf. Hiltebrand et al. (2018)

9 Psychiatric disorders

The prevalence of disorders according to Chapter V of the ICD-10 'Mental and behavioural disorders' diagnosed on discharge are listed below. Unlike in previous reports, disorders caused by substance use are also shown, although disorders caused by the use of opioids (and opiates) are not taken into account as they must always be present in heroin-assisted treatment. To allow comparison with previous years, the prevalence is also shown excluding disorders due to substance use (cf. Table 15).

If we take into account other disorders due to psychoactive substance use excluding opioids/opiates (e.g. alcohol, cannabinoids, cocaine, multiple substances), it is clear that only a small percentage of patients (8.3%) do not have at least one other diagnosed disorder due to substance use. In general, they are disorders due to multiple drug use (ICD-10: F 19). If we exclude disorders due to substance use, this means excluding 45.9 % of patients who had been diagnosed with a disorder that is only due to substance use. This is roughly in line with previous years.

Table 15:   *Number of confirmed psychiatric diagnoses according to Chapter V of the ICD 'Mental and behavioural disorders' in patients discharged from HAT in 2018, and compared with 2013–2017*

Number of diagnoses (including disorders caused by alcohol and other substances but not opioids)			Number of diagnoses excluding disorders caused by substance use						
	2018			2018		2017[1]		2013-2016[1]	
	n	%		n	%	n	%	n	%
Disorders caused by opioids only	9	8.3%	Disorders caused by substances (including opioids) only	50	45.9%	64	48.9%	279	45.3%
One diagnosis	39	35.8%	One diagnosis	46	42.2%	50	38.2%	253	41.1%
Two diagnoses	39	35.8%	Two diagnoses	10	9.2%	13	9.9%	72	11.7%
Three diagnoses	18	16.5%	Three diagnoses	2	1.8%	3	2.3%	11	1.8%
Four diagnoses	3	2.8%	Four diagnoses	1	0.9%	1	0.8%	1	0.2%
Five diagnoses	1	0.9%	Five diagnoses	0	0.0%	0	0.0%	0	0.0%
Total	109	100%		109	100%	131	100%	616	100%

N.B.:   11 missing values on all diagnosis questions; [1] vgl. Hiltebrand et al. (2018)

In addition to disorders due to alcohol (31.2%), the majority of HAT patients suffer from mental and behavioural disorders due to substance use (71.6%, cf. Table 16), usually from diagnosed disorders due to multiple substance use (ICD-10: F19). No information was provided on this in previous years (cf. Hiltebrand et al., 2018).

Among the non-substance-related disorders, one fifth of discharged patients (approximately in line with previous years) has a diagnosed personality or behavioural disorder (Table 16). A personality disorder is characterised by a persistent, inflexible and maladjusted pattern of perception, thinking, feeling and behaviour which differs significantly from socio-cultural expectations of the environment. Those affected are severely compromised in their ability to cope with everyday life in social and other contexts. By definition, personality disorders start in childhood or at some point during adolescence and early adulthood and then persist. In addition, 9.2% of discharged patients suffer from behavioural and emotional disorders with onset in childhood and adolescence (ICH-10: F90-F98). Mood (affective) disorders (21.1%) and schizophrenic disorders (11.0%) are also common.

Table 16:   *Prevalence of ICD-10 diagnosis groups from Chapter V 'Psychiatric and behavioural disorders' in patients discharged from HAT in 2018, and compared with the period 2013–2017 (multiple answers possible).*

Disorder	2018		2017		2013-2016	
	n	%	n	%	n	%
Organic, including symptomatic, mental disorders	4	3.7%	2	1.5%	15	2.4%
Mental and behavioural disorders caused by alcohol	34	31.2%	n.s.	n.s.	n.s.	n.s..
Mental and behavioural disorders caused by psychotropic substances (excluding opioids)	78	71.6%	n.s.	n.s.	n.s.	n.s.
Schizophrenia, schizotypal and delusional disorders	12	11.0%	11	8.4%	58	9.4%
Mood (affective) disorders	23	21.1%	22	16.8%	114	18.5%
Neurotic, stress-related and somatoform disorders	3	2.8%	6	4.6%	34	5.5%
Behavioural syndromes associated with physiological disturbances and physical factors	1	0.9%	1	0.8%	4	0.6%
Disorders of adult personality and behaviour	23	21.1%	34	26.0%	170	27.6%
Mental retardation	0	0.0%	0	0.0%	4	0.6%
Disorders of psychological development	0	0.0%	0	0.0%	0	0.0%
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence	10	9.2%	13	9.9%	34	5.5%
Unspecified mental disorders	0	0.0%	0	0.0%	34	5.5%

Key takeaways: Only in exceptional cases do HAT patients have a purely opioid-related disorder. Usually they also have disorders due to the use of other substances (e.g. alcohol, cannabinoids, cocaine). Disorders due to multiple drug use are often diagnosed. In addition, personality and behavioural disorders, mostly with onset in childhood and adolescence, are common, as are mood (affective) disorders and schizophrenic disorders.

10 References

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