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# Monitoring of an Infectious Disease in a Key Group: The SAMMSU cohort study

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# Disclosure

- Grant recipient of AbbVie
- Grant recipient of Gilead
- Project leader of the *Clinique virtuelle hépatite C* in collaboration with the Levant fondation, Lausanne, granted by AbbVie, Gilead and the Loterie Romande

# SAMMSU Sponsors



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## We are also grateful to past sponsors

Infodrog (on behalf of Swiss Federal Office of Public Health), Pharma industries (AbbVie, BMS, Merck, Roche), SSAM (Swiss Society for Addiction Medicine), SEVHep (Swiss Experts in Viral Hepatitis), Inselspital Bern, Kantonsspital St. Gallen, Kantonsspital Aarau, Arud Zentrum für Suchtmedizin, Zfs Zentrum für Suchtmedizin Basel, Universitätsspital Zürich

# SAMMSU



## SWISS ASSOCIATION FOR THE MEDICAL MANAGEMENT IN SUBSTANCE USERS

**2011**

SAMMSU is a non-profit organization aiming to improve healthcare for people who use drugs in Switzerland

## **SAMMSU COHORT STUDY**

**2014**

The SAMMSU prospective cohort study  
Eligibility criteria: > 18 years old, giving a written informed consent and on OAT

**2024**

Our goal is to become an international leading cohort on medical and public health evidence-based data among People Who Use Drugs.

Where did we stand in 2012?

# Hepatitis C Virus Infections in the Swiss HIV Cohort Study: A Rapidly Evolving Epidemic

Gilles Wandeler,<sup>1,2,\*</sup> Thomas Gsponer,<sup>2</sup> Andrea Bregenzer,<sup>3</sup> Huldrych F. Günthard,<sup>4</sup> Olivier Clerc,<sup>5</sup> Alexandra Calmy,<sup>6</sup> Marcel Stöckle,<sup>7</sup> Enos Bernasconi,<sup>8</sup> Hansjakob Furrer,<sup>1</sup> Andri Rauch<sup>1,2,\*</sup>; and the Swiss HIV Cohort Study

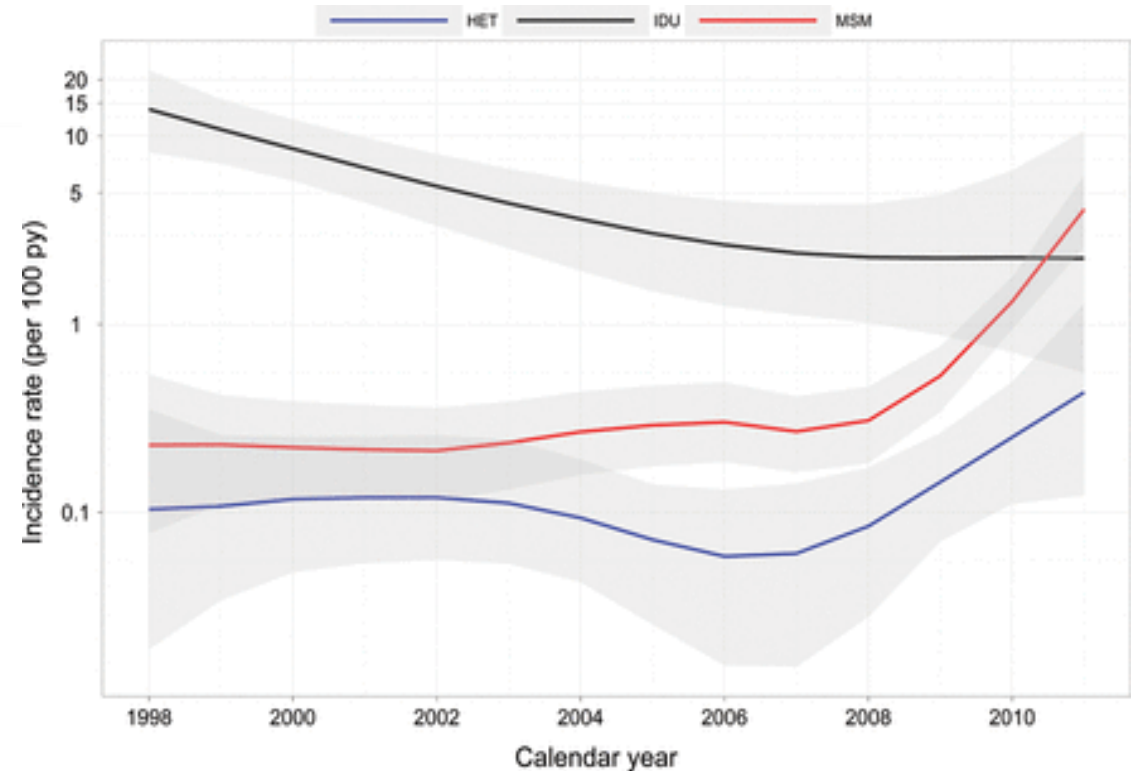
<sup>1</sup>Department of Infectious Diseases, Bern University Hospital and University of Bern, <sup>2</sup>Institute of Social and Preventive Medicine, University of Bern, <sup>3</sup>Cantonal Hospital, St Gallen, <sup>4</sup>Division of Infectious Diseases and Hospital Epidemiology, University Hospital Zurich, University of Zurich, <sup>5</sup>University Hospital Lausanne, <sup>6</sup>University Hospital Geneva, <sup>7</sup>University Hospital Basel, and <sup>8</sup>Regional Hospital, Lugano, Switzerland

*Clin Infect Dis*, Volume 55, Issue 10, 15 November 2012, Pages 1408–1416,  
<https://doi.org/10.1093/cid/cis694>

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**HCV burden in PWID**

**Figure 2.** Hepatitis C virus infection incidence rates by transmission group



# Models of Care for the Management of Hepatitis C Virus Among People Who Inject Drugs: One Size Does Not Fit All

Philip Bruggmann<sup>1</sup> and Alain H. Litwin<sup>2</sup>

<sup>1</sup>Arud Centres for Addiction Medicine, Zurich, Switzerland; and <sup>2</sup>Division of General Internal Medicine, Department of Medicine, Albert Einstein College of Medicine and Montefiore Medical Center, Bronx, New York

*Clin Infect Dis*, Volume 57, 2013, DOI: 10.1093/cid/cit271



# Where do we stand today?



SRG SSR  
dialog

# Diacetylmorphine-assisted treatment settings and SAMMSU centers, Switzerland

## SAMMSU cohort 8 centers

December 2<sup>nd</sup>, 2024

**AG** = Aarau

**BE** = Bern

**BS** = Basel

**GE** = Geneva

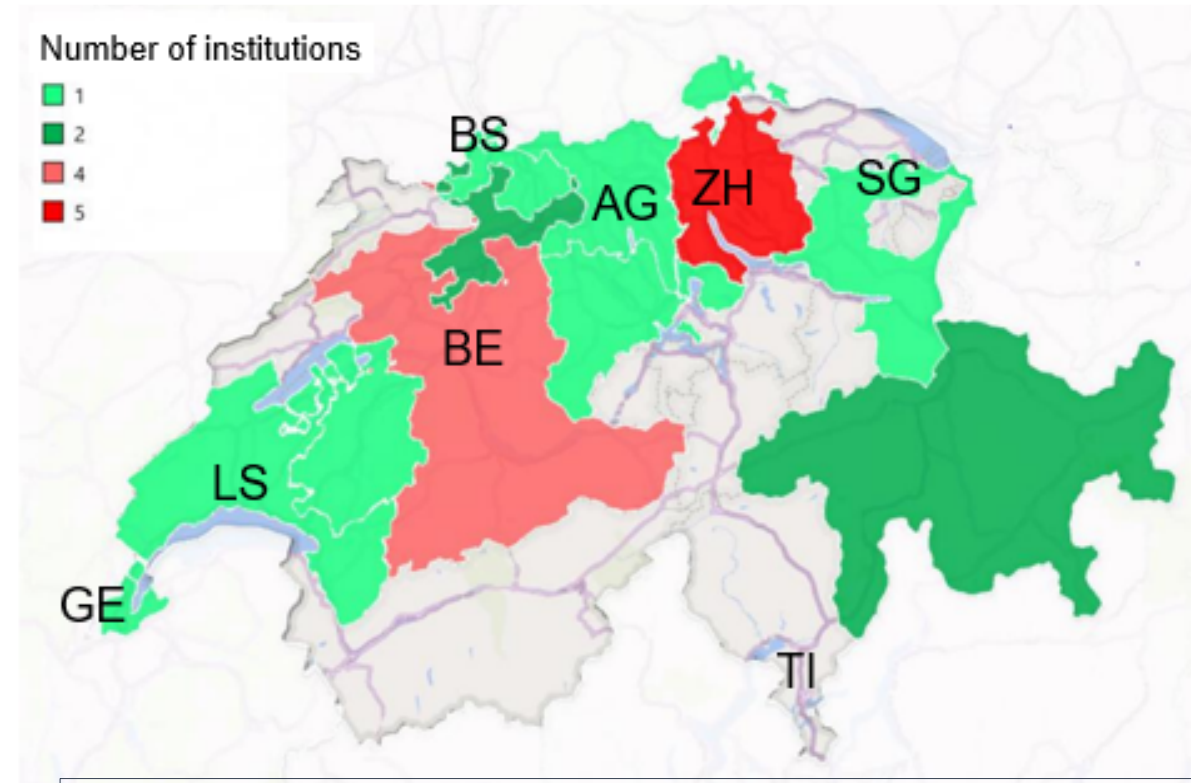
**LS** = Lausanne

**SG** = St. Gallen

**TI** = Ticino (Lugano)

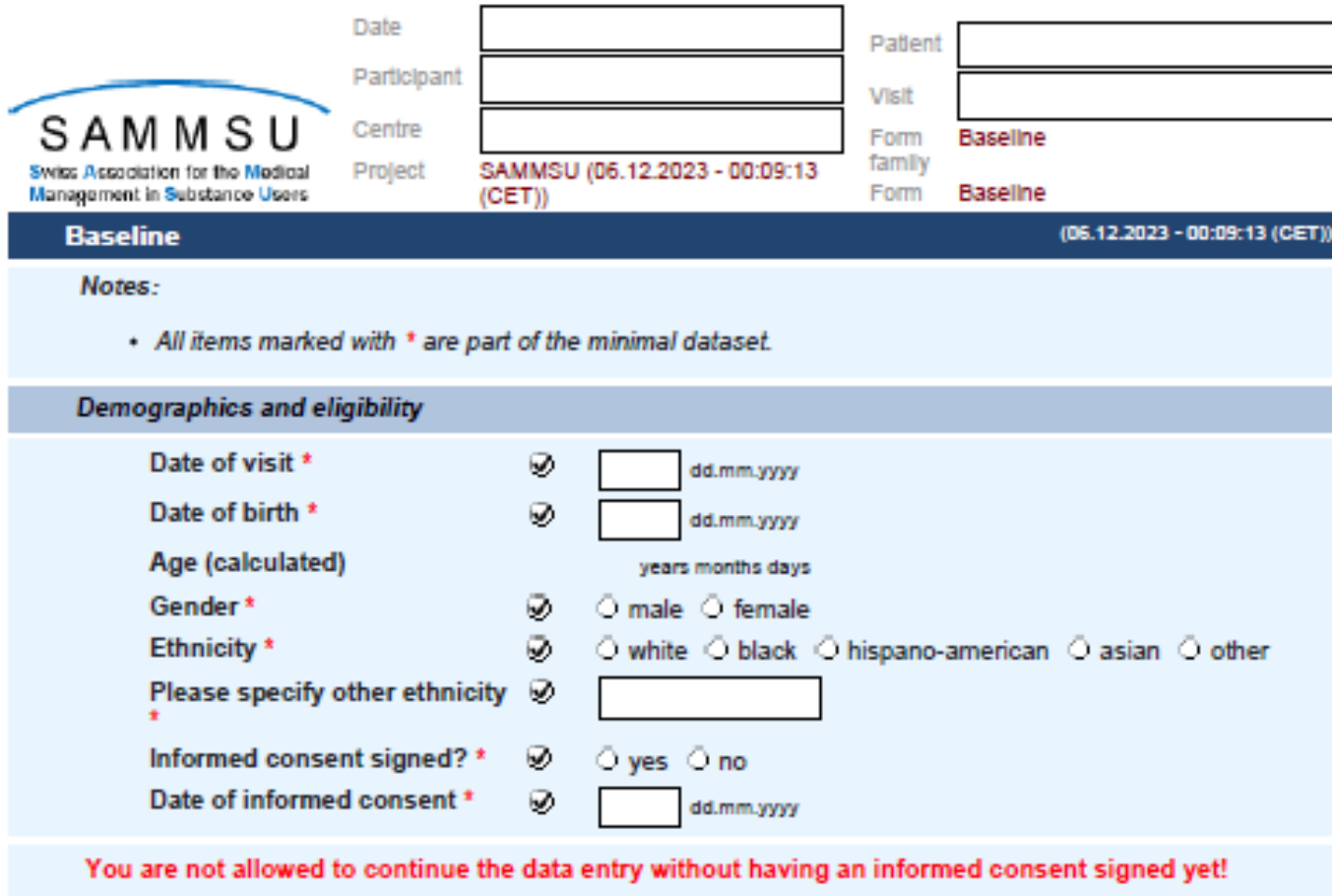
**ZH** = Zurich

*Across the country  
Region-wide*



Gmel G., Labhart F. (2023). Traitement avec prescription de diacétylmorphine en Suisse – Résultats de l'enquête 2022. Rapport de recherche N° 157. Lausanne: Addiction Suisse.

# SAMMSU cohort Case Report Forms



**SAMMSU**  
Swiss Association for the Medical Management in Substance Users

Date

Participant

Centre

Project SAMMSU (06.12.2023 - 00:09:13 (CET))

Patient

Visit

Form family **Baseline**

Form **Baseline**

**Baseline** (06.12.2023 - 00:09:13 (CET))

**Notes:**

- All items marked with \* are part of the minimal dataset.

**Demographics and eligibility**

Date of visit \*   dd.mm.yyyy

Date of birth \*   dd.mm.yyyy

Age (calculated) \_\_\_\_\_ years months days

Gender \*   male  female

Ethnicity \*   white  black  hispano-american  asian  other















Please specify other ethnicity \*

Informed consent signed? \*   yes  no

Date of informed consent \*   dd.mm.yyyy

**You are not allowed to continue the data entry without having an informed consent signed yet!**

## Baseline and Follow-up CRFs:

-  Adverse\_event.pdf
-  Baseline.pdf
-  Center\_change.pdf
-  Diagnostic\_procedures.pdf
-  General\_information.pdf
-  HCV\_Reinfections.pdf
-  HCV\_Therapies.pdf
-  Hematology\_and\_Chemistry.pdf
-  HIV\_and\_HCV\_care.pdf
-  Medications\_including\_erythropoietin\_blood\_transfusions...
-  Serology.pdf
-  Stop.pdf
-  Vaccinations.pdf
-  Virology\_and\_Immunology.pdf

# SAMMSU cohort Baseline Case Report Forms

Somatic comorbidities (before cohort inclusion)	
<b>Alcohol</b>	Did the patient ever have epilepsy? *
<i>Note: Pl type of s</i>	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes
Ev (IV Ye	Number of attacks ever
	Last attack
	Number of attacks last 12 months
	Etiology
	<input checked="" type="checkbox"/> withdrawal or intoxication <input type="checkbox"/> brain disease <input type="checkbox"/> genuine (primary) <input type="checkbox"/> un
Ev co Ye co	Did the patient ever have thyroid dysfunction? *
	Please specify
	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> hypothyroidism <input type="checkbox"/> hyperthyroidism
Ev Ye co	Did the patient ever have musculoskeletal and connective tissue disorder? *
	Please click on <a href="#">ICD-10 online catalog</a> to search for the right ICD-10 code.
Ev Ye co	Please give the general ICD-10 code
	If possible, please give the detailed ICD-10 code (Mxx.x)
Ev Ye co	Did the patient ever have osteoporosis? *
	Please specify
	<input checked="" type="checkbox"/> Osteoporosis (T-score < [-2.5]) <input type="checkbox"/> Osteopenia (T-score < [-1.0] - [-2.5]) <input type="checkbox"/> low bone r (Z-score < [-1.0])
Ev Ye co Nu	Did the patient ever have thrombosis? *
	Please specify
	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> non-septic <input type="checkbox"/> septic (with bacteraemia)
Ev Ye co	Did the patient ever have endocarditis? *
	Number of attacks ever
	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> > 2
Ev Ye co	Did the patient ever have cardiovascular disease? *
	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes (specify)
<b>Cardiovascular diseases</b>	

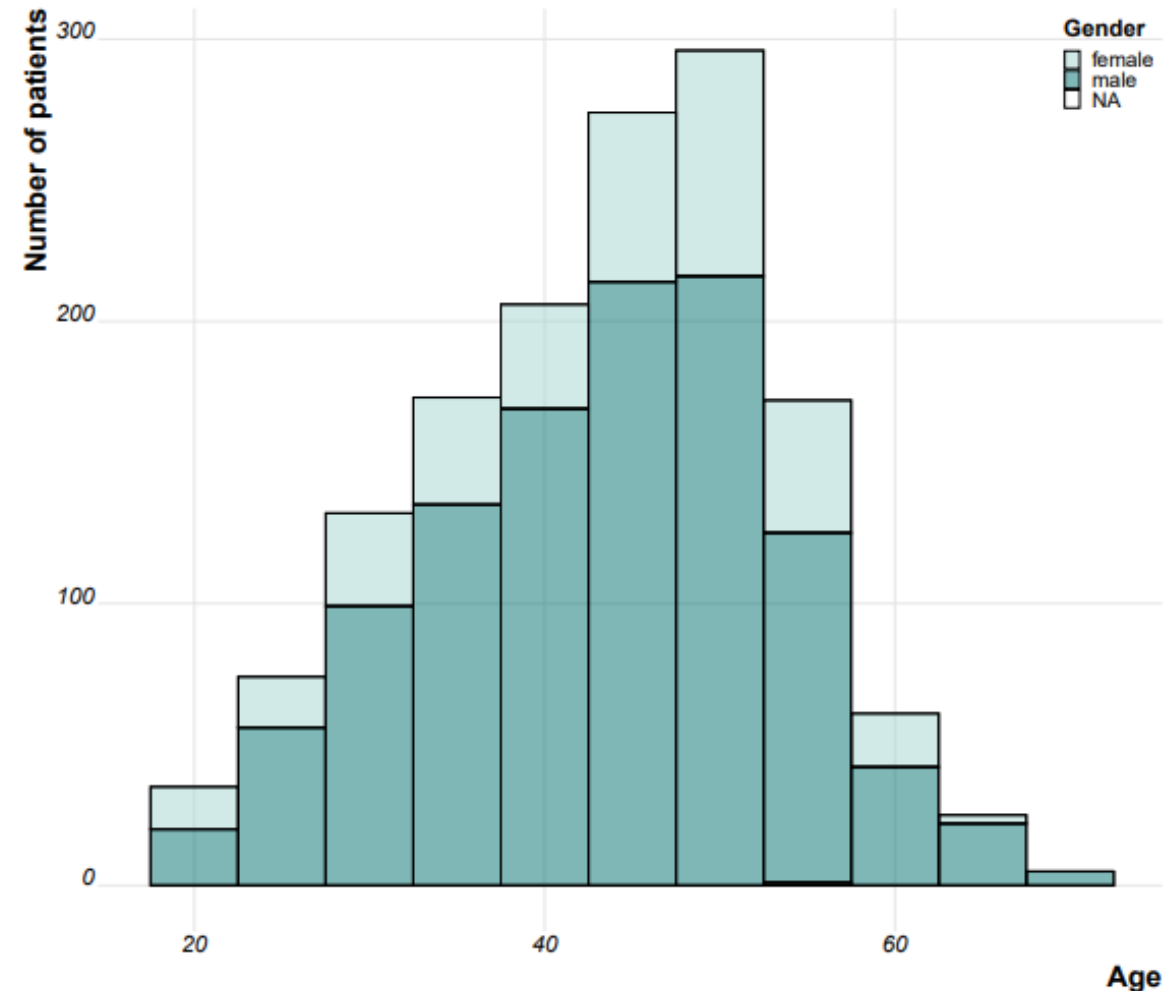
HIV and HCV	
Ev Ye co	Is the patient Anti-HIV positive? *
	Ever HIV therapy *
	Year of first HIV therapy *
	<i>Important: Please enter all HIV therapies into the "Medication" casenode.</i>
Ev Ye co	Is the patient Anti-HCV positive? *
	Ever chronic hepatitis C *
	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> unknown / not clearly defined <small>(= no HCV-RNA or no follow-up HCV-RNA to differentiate between chronic infection and spontaneous clearance)</small>
	chronic infection = HCV-RNA persistence for >6 months after primary or re-infection or an HCV-RNA decline of <2 log U/ml within 4 weeks ("early chronic hepatitis C") spontaneous clearance = confirmed HCV-RNA-negative without treatment (two HCV-RNA measurements at least 4 months apart)
Ev Ye co	Ever HCV therapy *
	Year of first HCV therapy *
	<i>Important: Please enter all HCV therapies into the "HCV therapy" casenode.</i>
<b>Past Vaccinations (before cohort inclusion)</b>	
Ev Ye co	Documentation Vaccination card available
	Vaccination history (clinical notes) available
Ev Ye co	Immunized against Hepatitis A *
	Number of doses received
	Date of last vaccination
Ev Ye co	Immunized against Hepatitis B *
	Number of doses received
	Date of last vaccination
<b>Comments</b>	

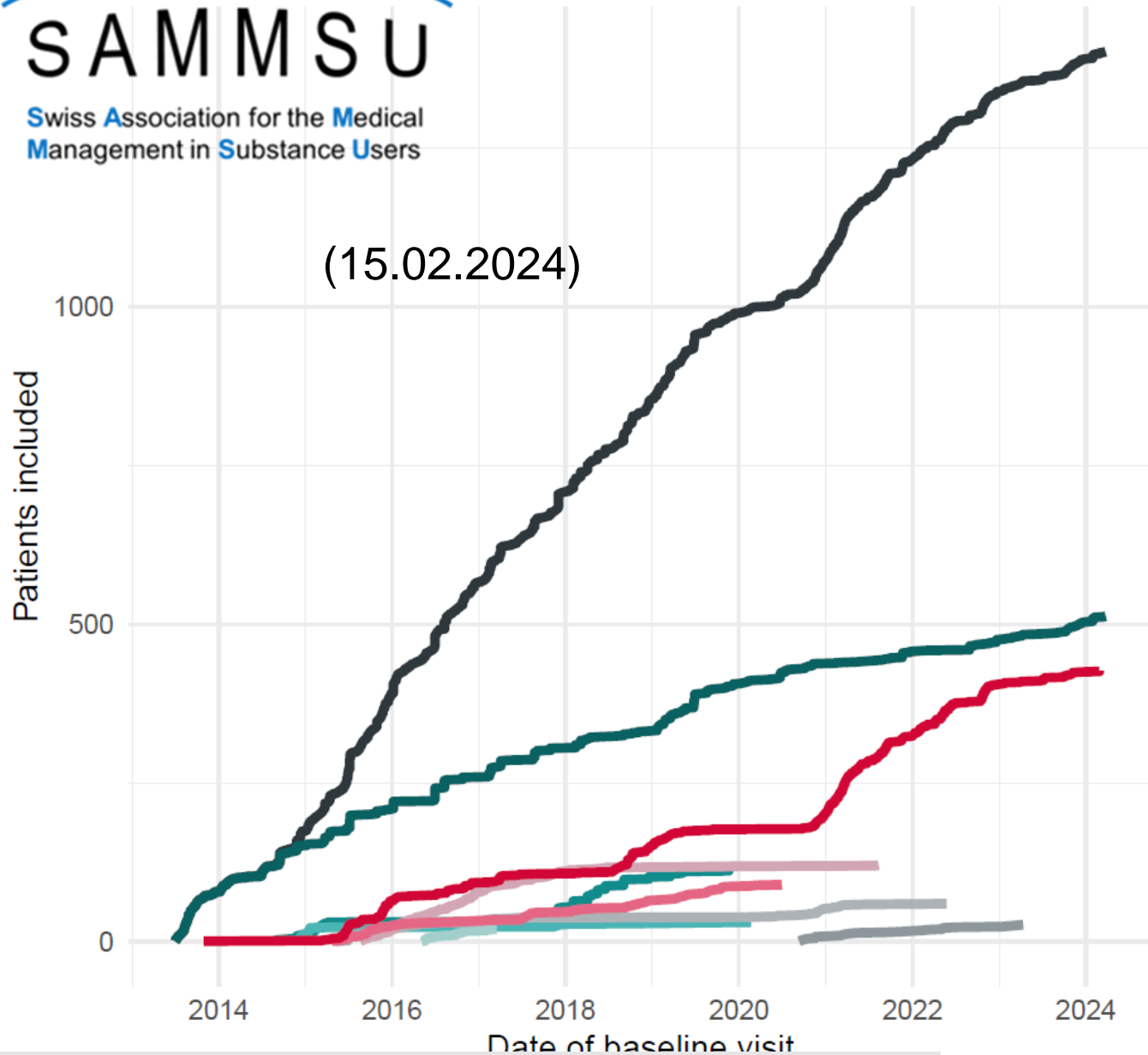
# SAMMSU cohort characteristics 2024

Data Manager  
Department of Clinical Research  
University of Basel

# Baseline characteristics of SAMMSU cohort patients

	Overall (n=1453)
Age (mean (SD))	43.4 (10.1)
Gender = male (%)	1102 (75.9)
Substitution = yes (%)	1380 (97.7)
Time in current program (y) (median [IQR])	3.3 [0.4, 8.4]
Anti-HIV positive = yes (%)	135 ( 9.4)
Thereof ever HIV therapy = yes (%)	134 (99.3)
Anti-HCV positive = yes (%)	852 (58.6)
Thereof ever chronic HCV = yes (%)	670 (78.6)
Thereof ever HCV therapy = yes (%)	578 (67.8)
Thereof HCV/HIV coinfectd = yes (%)	126 (14.8)





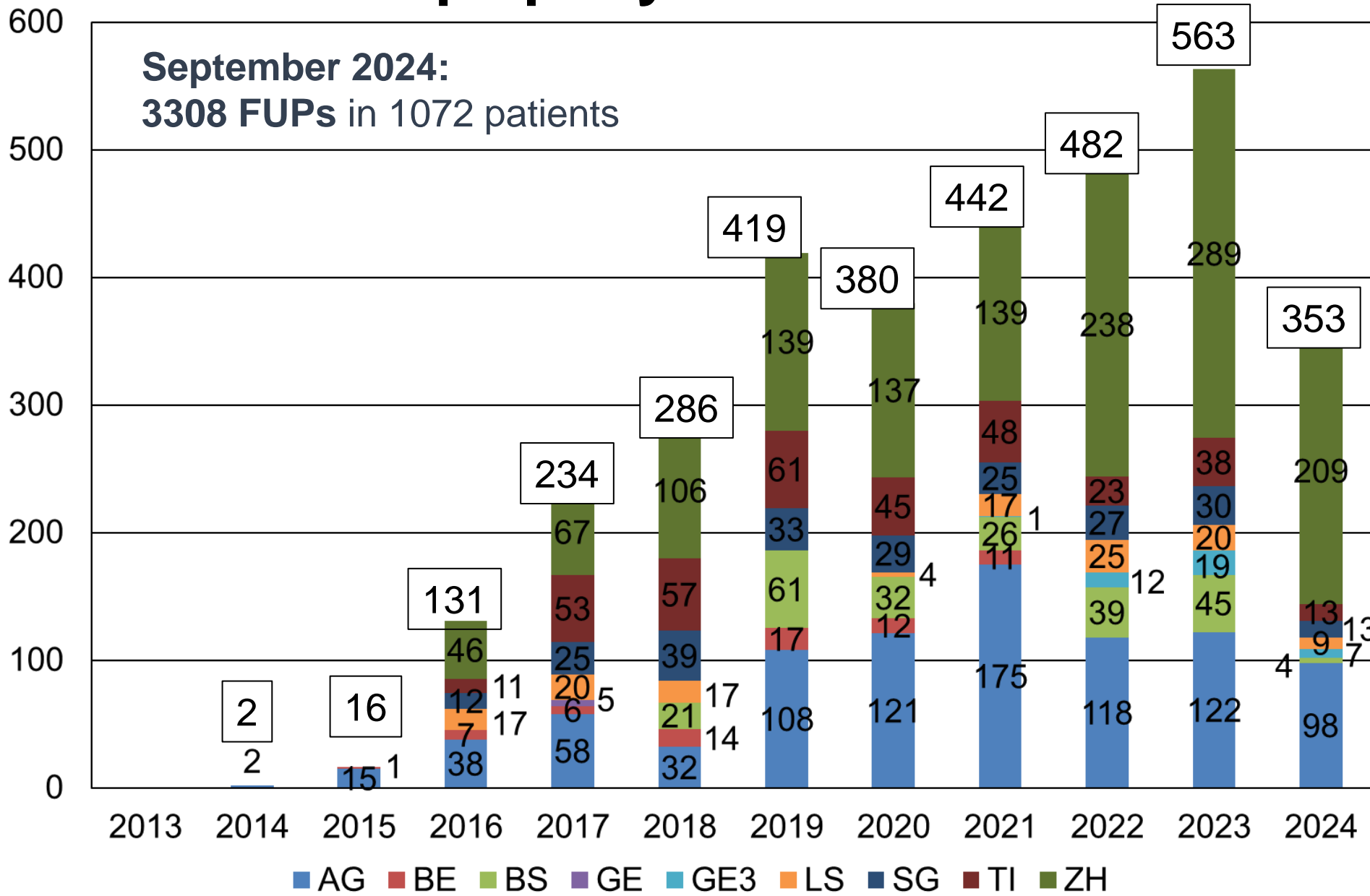
• **Since 2014**, the SAMMSU cohort recruits >18 year-old patients who were at least one day in an opioid agonist therapy (OAT) program

Center	(15.02.2024)	(02.09.2024)
All (n = 1402)		1453
Aarau (n = 513)		
Basel (n = 113)		
Bern (n = 31)		
Geneve (n = 20)		
Geneve – Fondation Phénix (n = 27)		
Lausanne (n = 60)		
Lugano (n = 121)		
St. Gallen (n = 90)		
Zurich (n = 427)		

• In contrast to the **SHCS** (Swiss HIV Cohort Study) and the **SCCS** (Swiss HCV Cohort Study), the **SAMMSU** cohort recruits patients irrespective of their HIV- and HCV-serostatus.

# Follow-ups per year and center

Number of follow-ups



- In 2023, the number of FUPs per year has increased to >500 (already 353 FUPs in the first 8 months of 2024 → extrapolated to one year: again >500 expected)

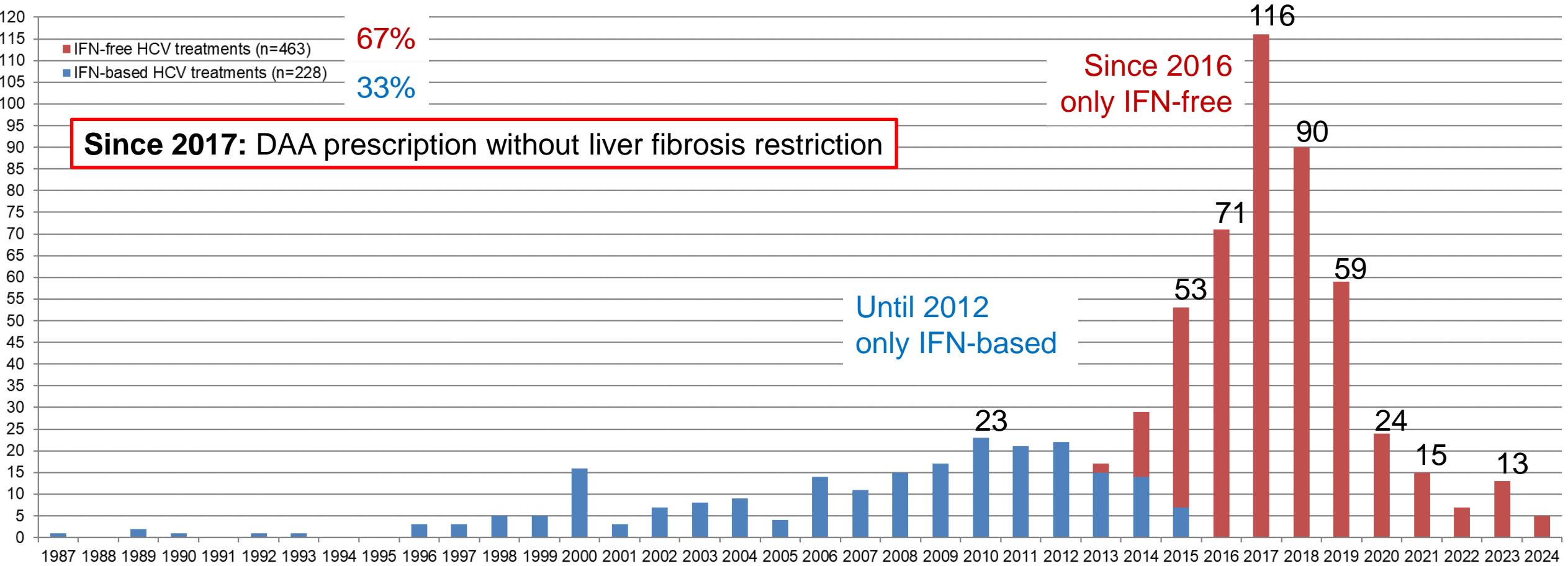
AG BE BS GE GE3 LS SG TI ZH



Source: Andrea Bregenzer, September 26- 2024

Swiss Hepatitis Symposium, December 2nd \_ 2024, E Castro

# Increase of HCV treatment-uptake in the era of IFN-free HCV treatment: Number of IFN-based (blue) and IFN-free HCV treatments (red) per calendar year



Status: 02/09/2024, n=1453, overall 697 HCV treatments in 562 patients

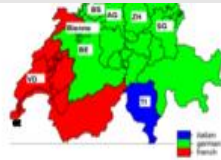
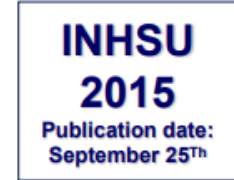
# SAMMSU cohort study

Data releases from 2015 to present

# Swiss data on hepatitis C treatment in people who use drugs: the SAMMSU cohort.



**Erika Castro<sup>1</sup>, Andrea Bregenzer<sup>2</sup>, Philip Bruggmann<sup>3</sup>, Alberto Moriggia<sup>4</sup>,  
Cornelia Staehelin<sup>5</sup>, Madeleine Rothen<sup>6</sup>, Pietro Vernazza<sup>7</sup> and Claude Scheidegger<sup>8</sup>.**



## Prospective data on people who use drugs in Switzerland: the SAMMSU cohort

Moriggia A<sup>1-2</sup>, Bregenzer A<sup>3</sup>, Bruggmann P<sup>4</sup>, Castro E<sup>5</sup>, Rothen M<sup>6</sup>, Rougemont M<sup>7</sup>, Schmid P<sup>8</sup>, Staehelin C<sup>9-10</sup>, Thurnheer C<sup>9-10</sup>, Scheidegger C<sup>11</sup>



## BARRIERS TO WIDESPREAD HEPATITIS C TREATMENT AMONG PEOPLE WHO INJECT DRUGS: DATA FROM THE SAMMSU COHORT

Moriggia A<sup>1-2</sup>, Bregenzer A<sup>3</sup>, Bruggmann P<sup>4</sup>, Castro E<sup>5</sup>, Rothen M<sup>6</sup>, Rougemont M<sup>7</sup>, Schmid P<sup>8</sup>, Thurnheer C<sup>9-10</sup>, Scheidegger C<sup>11</sup>



## FEASIBILITY, OUTCOME AND UPTAKE OF IFN-BASED AND IFN-FREE DAA HCV-TREATMENT IN OST PATIENTS IN SWITZERLAND – THE SAMMSU-COHORT

Bregenzer A<sup>1</sup>, Bruggmann P<sup>2</sup>, Castro E<sup>3</sup>, Moriggia A<sup>4,5</sup>, Rothen M<sup>6</sup>, Rougemont M<sup>7</sup>, Schmid P<sup>8</sup>, Thurnheer C<sup>9</sup>, Scheidegger C<sup>6</sup>

## AGEING WITH ADDICTION: DESCRIBING HEALTH CONDITIONS OF YOUNGER AND OLDER DRUG USERS IN SWITZERLAND

Moriggia, A, Di Giulio, P, Bregenzer A, Bruggmann P, Castro E, Della Santa P, Schmid P, Thurnheer C, Scheidegger C, Lisi, A and Caiata Z.M

# Swiss Medical Weekly

Formerly: Schweizerische Medizinische Wochenschrift  
An open access, online journal • [www.smw.ch](http://www.smw.ch)

Original article | Published 04 March 2021 | doi:10.4414/smw.2021.20460  
Cite this as: Swiss Med Wkly. 2021;151:w20460

## Hepatitis C virus elimination in Swiss opioid agonist therapy programmes – the SAMMSU cohort

Bregenzer Andrea<sup>a</sup>, Bruggmann Philip<sup>b</sup>, Castro Erika<sup>c</sup>, Moriggia Alberto<sup>de</sup>, Rothen Madeleine<sup>f</sup>, Thurnheer Maria Christine<sup>g</sup>, Vernazza Pietro<sup>h</sup>, Scheidegger Claude<sup>f</sup>

2022

INHSU

2022



### LATE PRESENTATION OF CHRONIC HEPATITIS C IN A SWISS COHORT OF PEOPLE ON OPIOID AGONIST THERAPY

Moriggia A<sup>1,2</sup>, Bregenzer A<sup>3</sup>, Bruggmann P<sup>4</sup>, Castro E<sup>5</sup>, Della Santa P<sup>6</sup>, Hensel-Koch K<sup>7</sup>, Thurnheer MC<sup>8</sup>, Scheidegger C<sup>9</sup>

### MENTAL DISORDERS AND HEPATITIS C PREVALENCE IN PEOPLE ON OPIOID AGONIST THERAPY FOLLOWED AT THE SAMMSU COHORT, SWITZERLAND

Castro E<sup>1</sup>, Gueorguiev B<sup>2</sup>, Bregenzer A<sup>3</sup>, Bruggmann P<sup>4</sup>, Della Santa P<sup>5</sup>, Hensel-Koch K<sup>6</sup>, Moriggia A<sup>7</sup>, Thurnheer MC<sup>8</sup>, Scheidegger C<sup>9</sup>, Combescure C<sup>10</sup> and Girardin F<sup>11</sup>.

# HIV and HCV cascade, RNA prevalence and new diagnoses in opioid agonist therapy (OAT) patients from the SAMMSU-cohort, Switzerland



Bregenzer A<sup>1</sup>, Bruggmann P<sup>2</sup>, Castro E<sup>3</sup>, Della Santa P<sup>4</sup>, Hensel-Koch K<sup>5</sup>, Moriggia A<sup>6,7</sup>, Scheidegger C<sup>8</sup>



## The HIV- and HCV-cascade in Swiss opioid agonist treatment (OAT) patients – the SAMMSU-cohort

Bregenzer A<sup>1</sup>, Bruggmann P<sup>2</sup>, Castro E<sup>3</sup>, Moriggia A<sup>4,5</sup>, Rothen M<sup>6</sup>, Schmid P<sup>7</sup>, Thurnheer C<sup>8</sup>, Scheidegger C<sup>6</sup>



## Occurrence and outcome of hepatitis C reinfections in opioid agonist therapy patients of the SAMMSU cohort

Bregenzer A<sup>1</sup>, Bruggmann P<sup>2</sup>, Castro E<sup>3</sup>, Della Santa P<sup>4</sup>, Hensel-Koch K<sup>5</sup>, Moriggia A<sup>6,7</sup>, Thurnheer MC<sup>8</sup>, Scheidegger C<sup>9</sup>



## CURRENT PREVALENCE OF AND RISK FACTORS FOR LIVER CIRRHOSIS IN OPIOID AGONIST THERAPY PATIENTS OF THE SAMMSU COHORT AFTER 5 YEARS OF UNRESTRICTED DAA ACCESS

Bregenzer A<sup>1</sup>, Bruggmann P<sup>2</sup>, Castro E<sup>3</sup>, Della Santa P<sup>4</sup>, Hensel-Koch K<sup>5</sup>, Moriggia A<sup>6,7</sup>, Thurnheer MC<sup>8</sup>, Scheidegger C<sup>9</sup>



# HCV late presentation (severe fibrosis/cirrhosis at first HCV therapy or first HCV diagnosis) in the Swiss Association for the Medical Management in Substance Users (SAMMSU) cohort since 2017

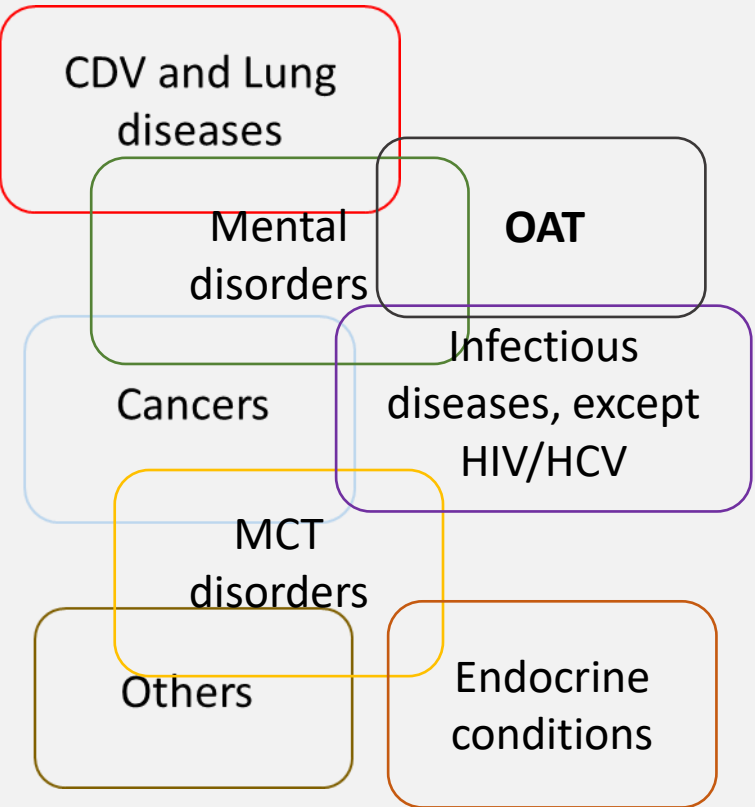


- In Switzerland, direct-acting antivirals (DAAs) are reimbursed without liver fibrosis restriction since 2017.
- We determined the prevalence of HCV late presentation in times of unrestricted DAA access.

## CONCLUSIONS

- In times of unrestricted DAA access, late diagnosis and late treatment of chronic hepatitis C are still common (one in four), suggesting insufficient care.
- But, once diagnosed or relinked to care, patients are promptly treated.

# Comorbidities and research horizons in the SAMMSU cohort



Baseline comorbidities (except HCV and HIV Infections)

~ 50% have 1 or more comorbidities

Comorbidity	n	%
Affective disorders	420	28.9
Ever Major Surgery	293	20.2
Personality disorders	277	19.1
Schizophrenia and other psychotic disorders	259	17.8
Ever suicide attempt	249	17.1
Arterial Hypertension	233	16.0
Anxiety, adaptation, somatoform disorders	214	14.7
Musculoskeletal and Connective tissue disorder	177	12.2
Epilepsy	170	11.7
Needle Abscess needing surgery	169	11.6
Behavioural disorders	166	11.4
ADHS	132	9.1
COPD	124	8.5
Malignancies	100	6.9
Thrombosis	94	6.5
Cardiovascular Disease	77	5.3
Osteoporosis	75	5.2
Asthma	69	4.7
Hypogonadism	64	4.4
Thyroid Dysfunction	56	3.9
Diabetes Mellitus	56	3.9
STD, except HIV	55	3.8
Pancreatitis	31	2.1
Endocarditis	24	1.7
Peripheral Arterial Disease	15	1.0

# New questions

Gender disparities

Aging/life expectancy

Sexual health

Vaccinations

Life quality

Harm reduction (safe supply)

HIV/HCV treatment as prevention

## Challenges

Representativeness

Syndemics research

Sustainability

# SAMMSU cohort study 10 years follow-up

## Unique in its kind!



ELSEVIER



International Journal of Drug Policy

Volume 95, September 2021, 103288



Research paper

Characteristics and risk of incarceration among “hard-to-reach” people who use drugs: A five-year prospective cohort study combining self-reports and registry data

Linn Gjersing  , Anne Line Bretteville-Jensen

# Thank you for your attention

Find more @

<https://www.sammsu.ch/>

