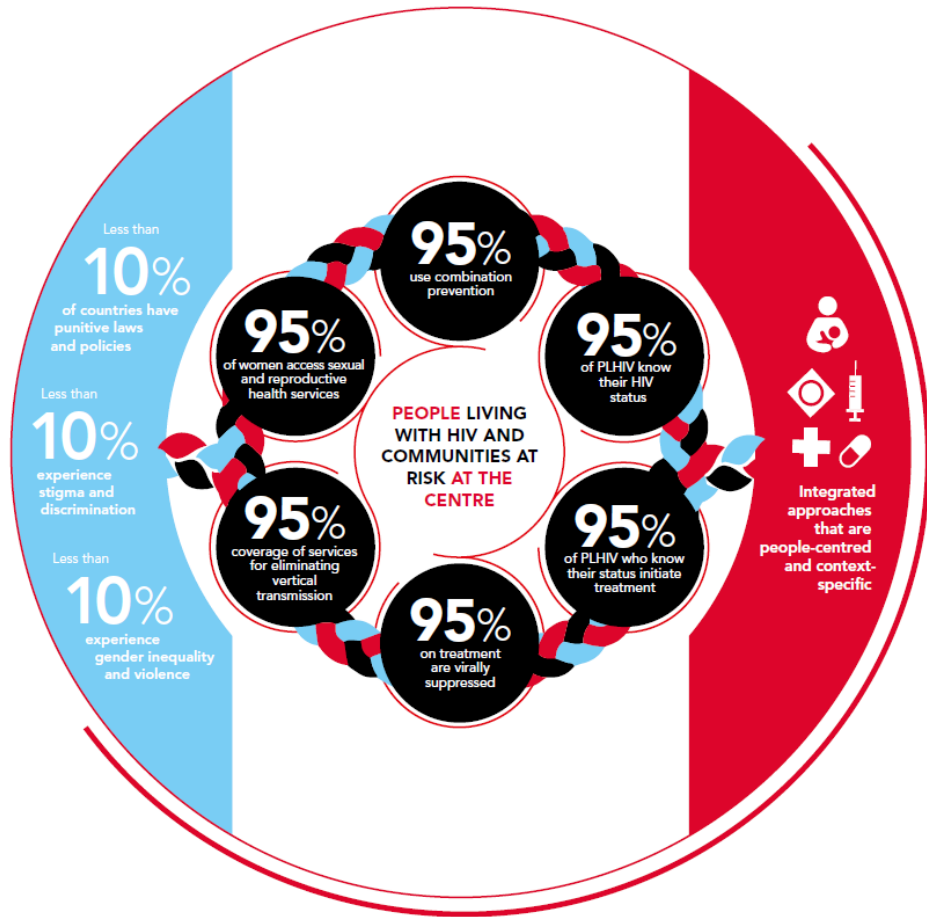


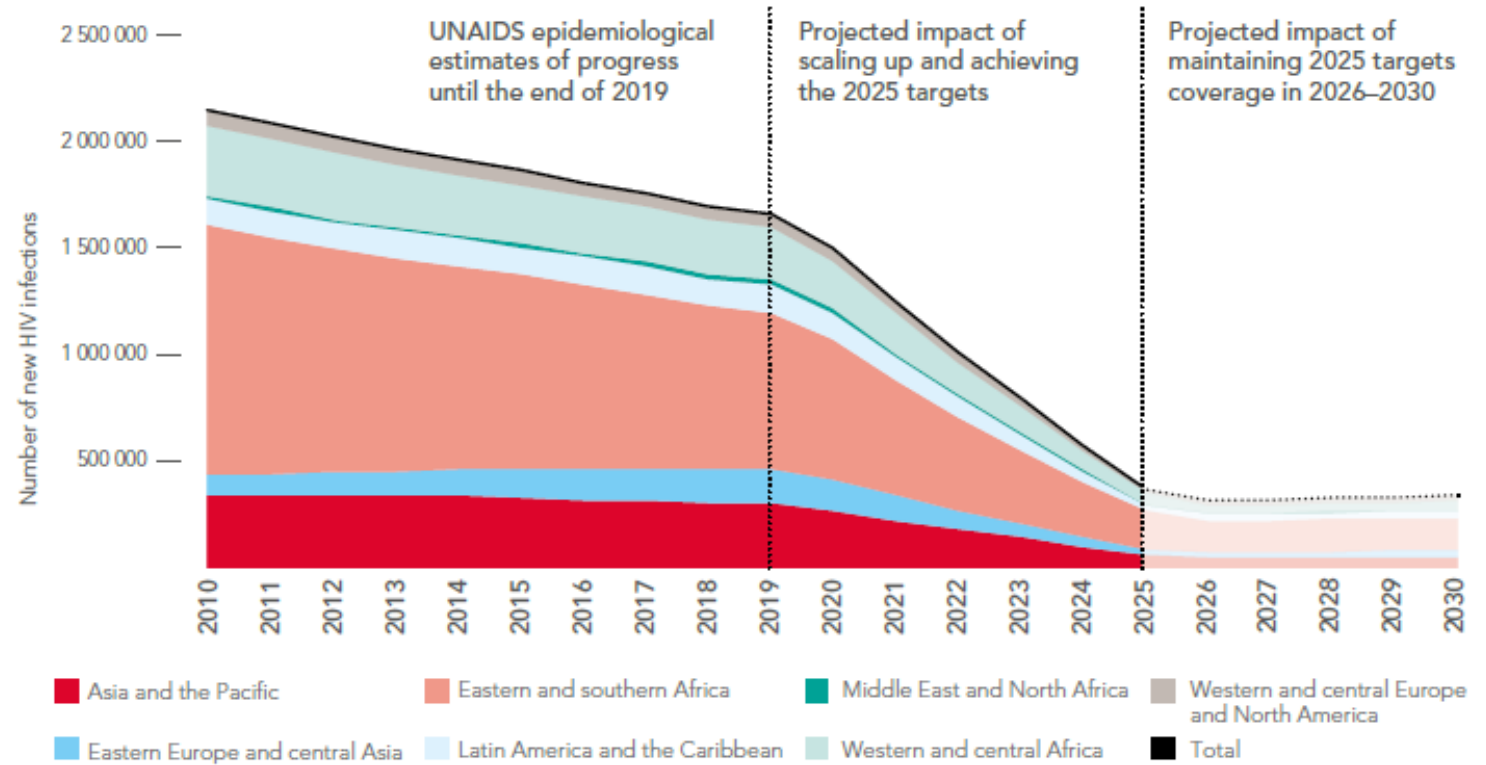
# A Monitoring Centre Concept for HIV and Viral Hepatitis

**Prof. Dr. med. Andri Rauch**  
Chefarzt Infektiologie  
INSELSPITAL, Universitätsspital Bern  
Universitätsklinik für Infektiologie  
[Andri.rauch@insel.ch](mailto:Andri.rauch@insel.ch)

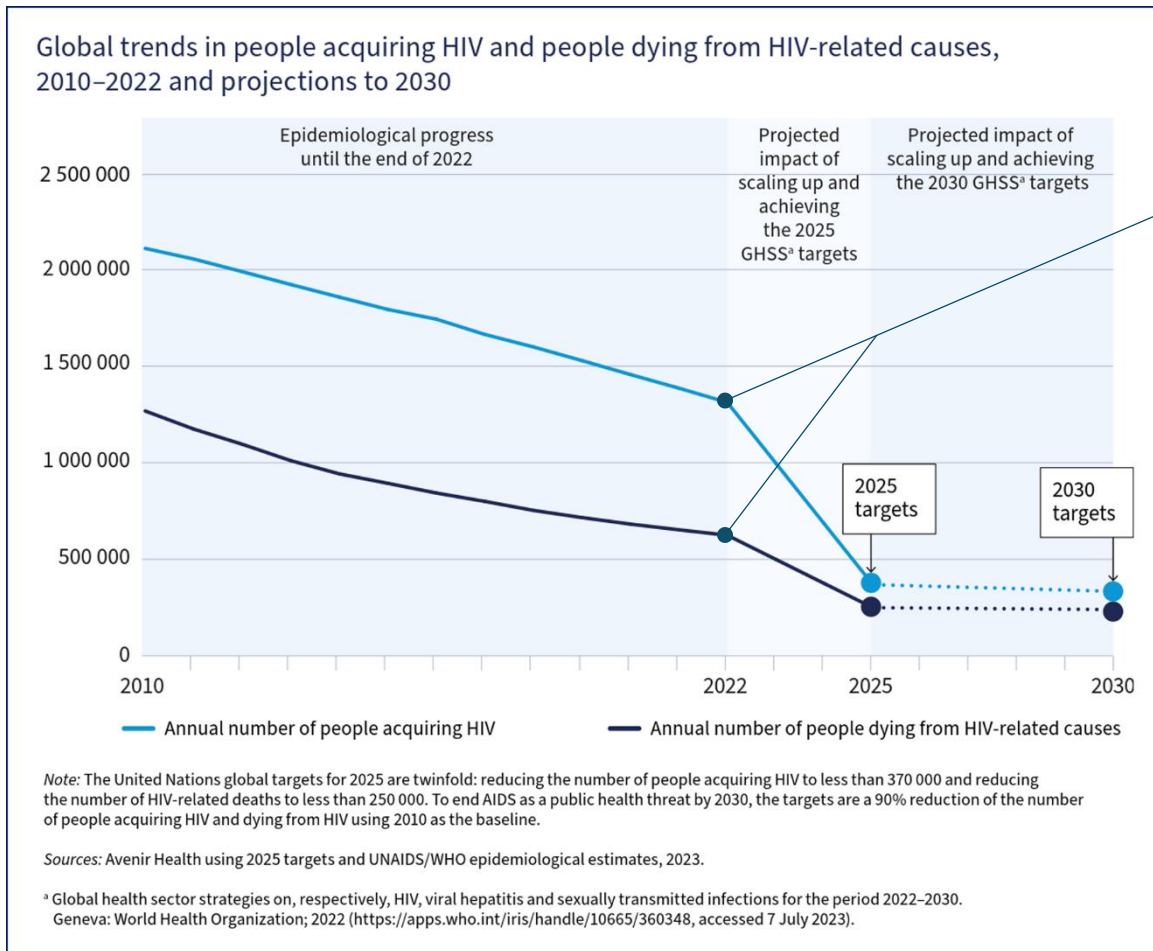
# UNAIDS 2020



## HIV infections



# Declining incidence but still off-target

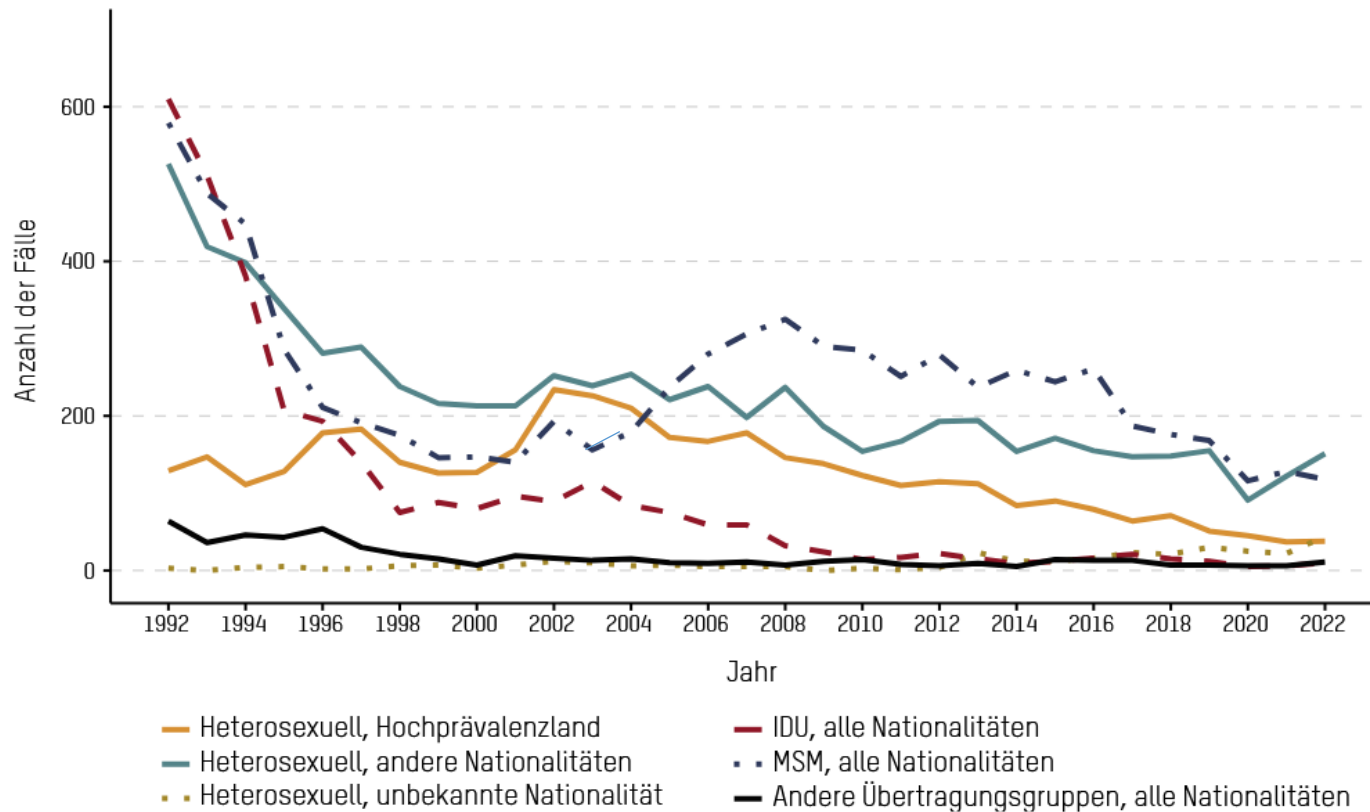


In 2022:

**1.3 Mio. neue HIV Infections**  
**630'000 HIV-associated deaths**

# HIV Epidemiology in CH

Abbildung 5  
HIV-Diagnosen<sup>1</sup> nach Ansteckungsweg<sup>2</sup> und Nationalität (präventionsorientierte Einteilung), 1992–2022



2023: **371 neue** HIV diagnoses

WHO target for elimination: ~50

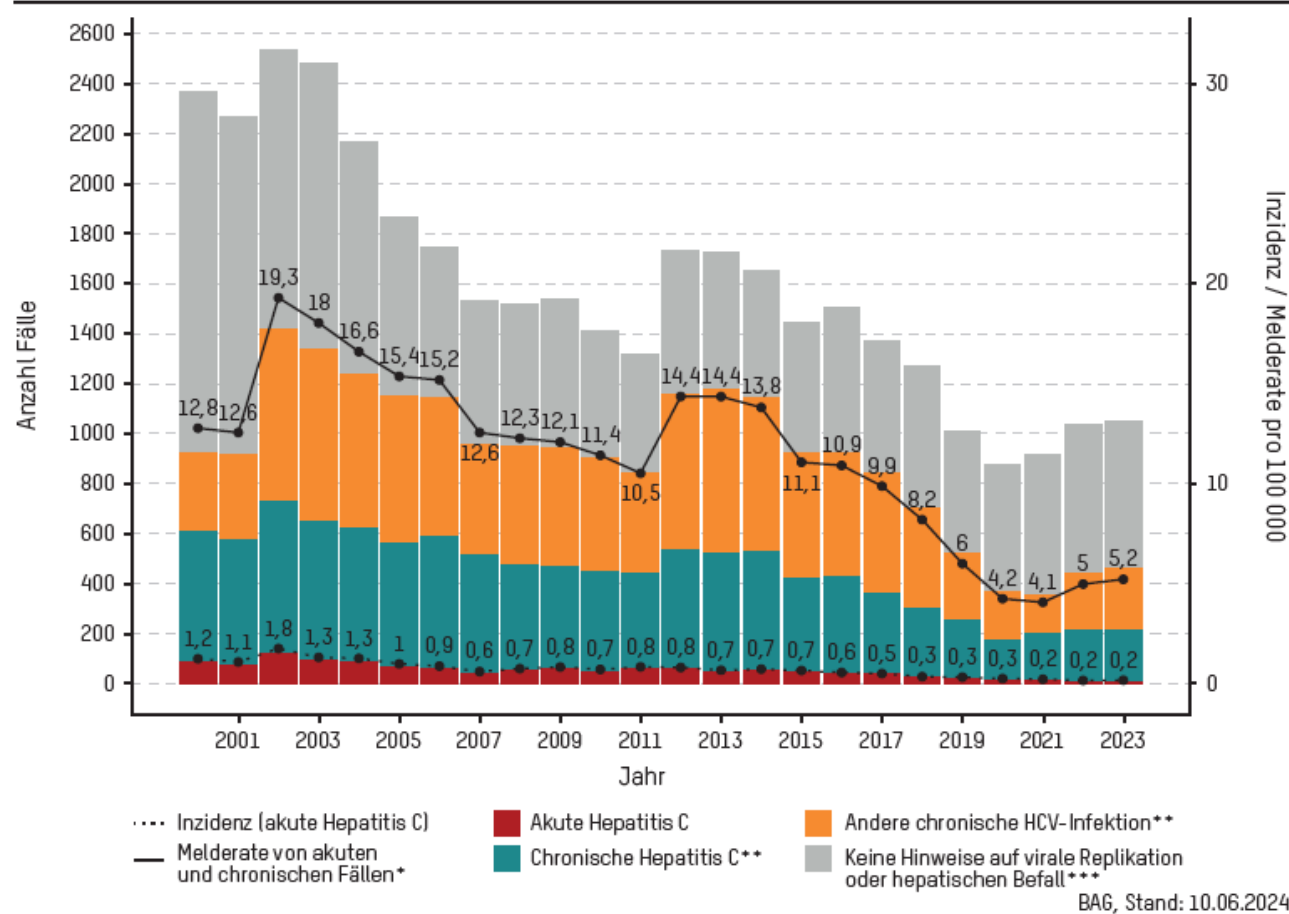
BAG, Stand: 11.08.2023

<sup>1</sup>Korrigiert für fehlende Arztmeldungen (MKB), siehe Anmerkung 1

<sup>2</sup>MSM: sexuelle Kontakte zwischen Männern; IDU: Injizierender Drogenkonsum

# New HCV diagnoses in Switzerland

Abbildung 5  
Entwicklung der gemeldeten Hepatitis-C-Fälle nach klinischem Stadium<sup>1</sup>, 2000 – 2023



<sup>1</sup> Adjustiert zur Berücksichtigung der Fälle ohne klinische Meldung.

\* Berechnet aus der Gesamtzahl der akuten Fälle und der chronischen Fälle mit dokumentiertem hepatischem Befall sowie anderen chronischen Infektionen ohne hepatischen Befall mit Nachweis von RNA/Antigen.

\*\* Chronische Hepatitis C mit dokumentiertem hepatischem Befall; Andere chronische HCV-Infektion ohne hepatischen Befall und mit Nachweis von RNA/Antigen (allfällige Anzeichen und Symptome ausserhalb der Leber werden nicht in die klinische Fallklassifikation einbezogen).

\*\*\* Andere Infektion, ohne hepatischen Befall und ohne Nachweis von RNA/Antigen. Es könnte sich mehrheitlich um geheilte Fälle handeln.

## «Not-on-target» despite:

- U=U and 97% HIV suppression rate
- PreP
- near-perfect DAA
- dense health-coverage
- established «Meldewesen», intensive monitoring in the Swiss HIV Cohort Study, SwissPrEPARED...

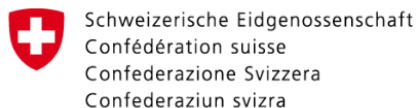
**How can we improve surveillance-response?**

# Alle elements are established - but not linked



CHECKPOINT

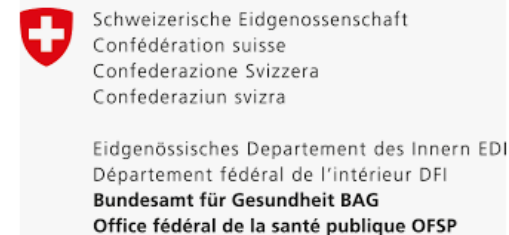
BerDa



Bundesamt für Statistik



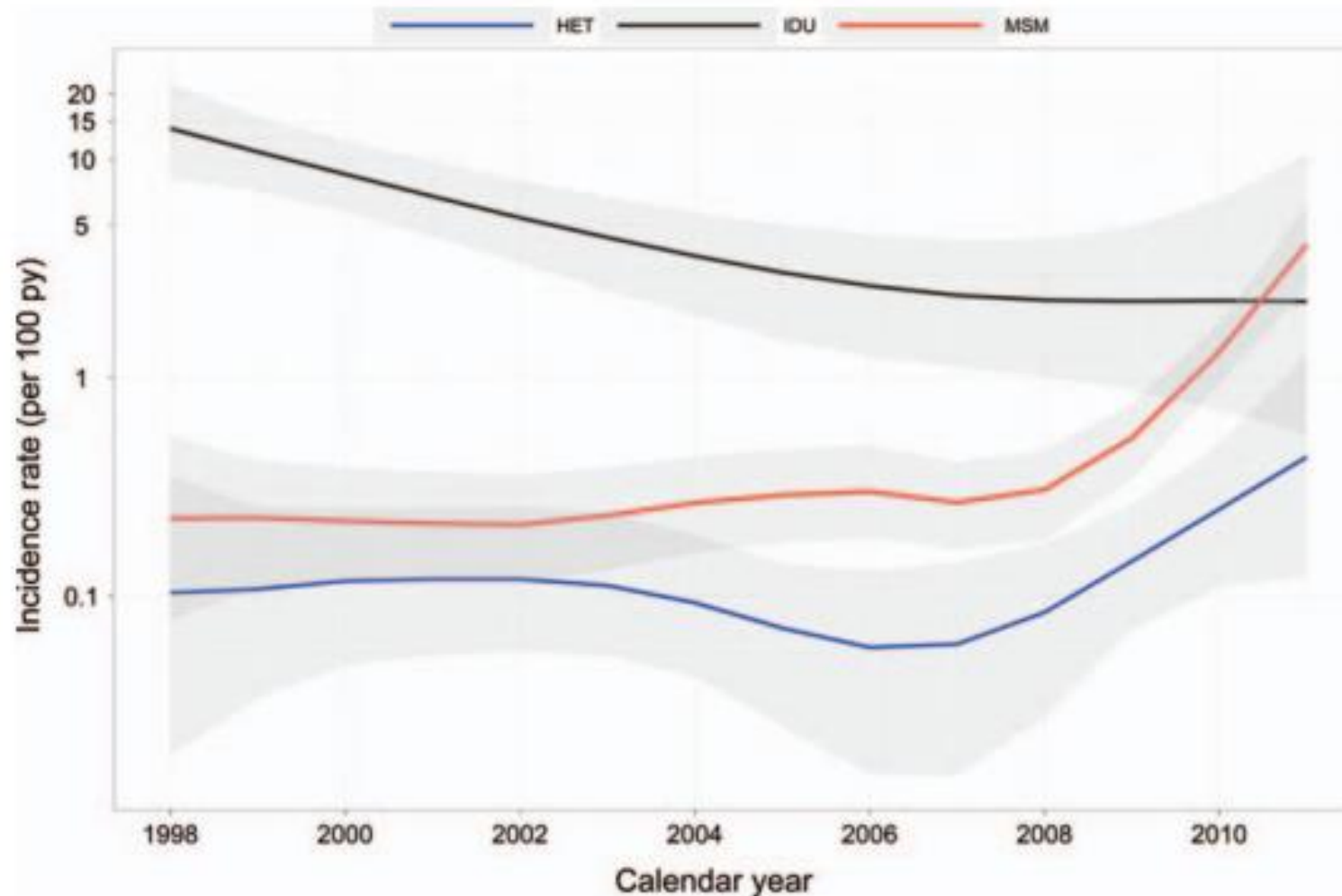
Meldewesen



Ärzt:innen /  
FMH

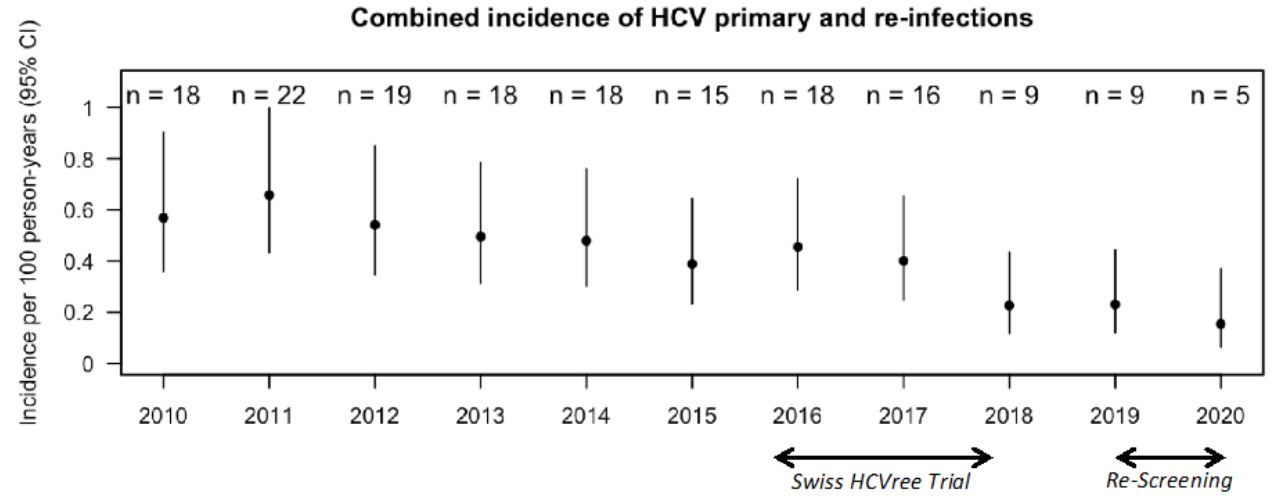
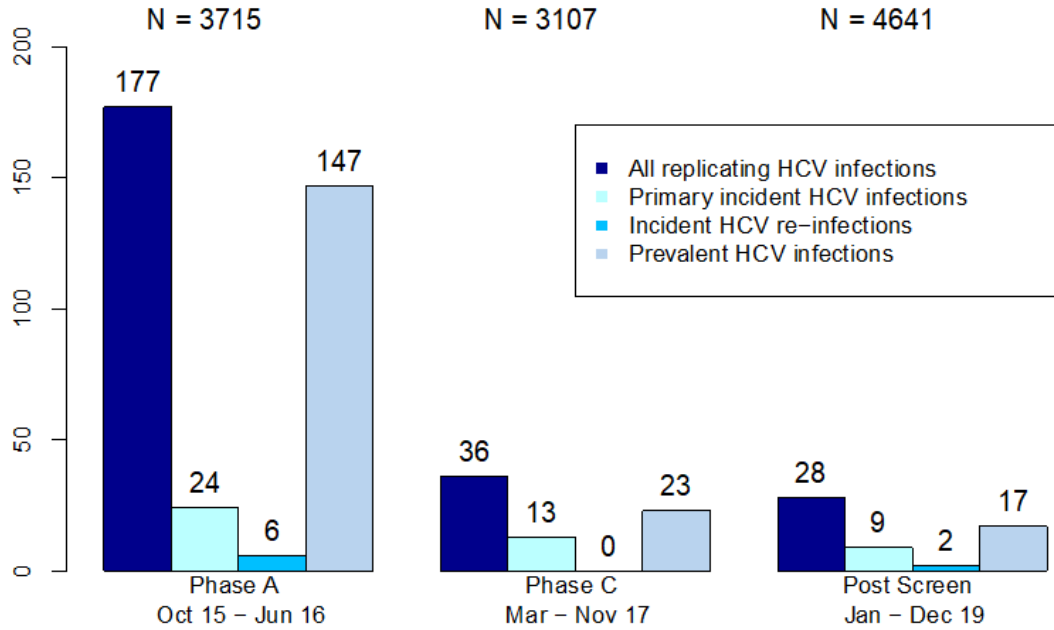


# Examples of value of available data I: Precise incidence estimates



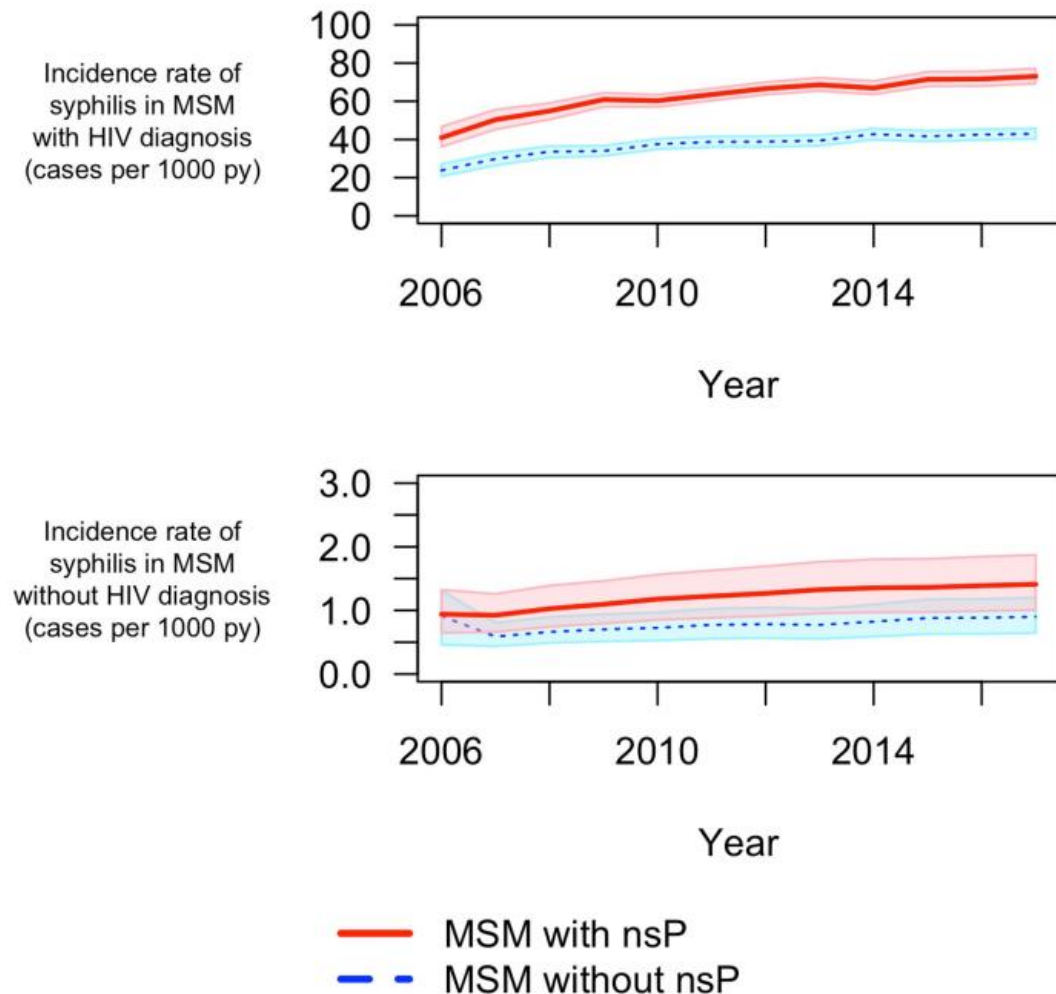
# Microelimination as response: HCVfree

Results of the three Hepatitis C screening phases in the SHCS



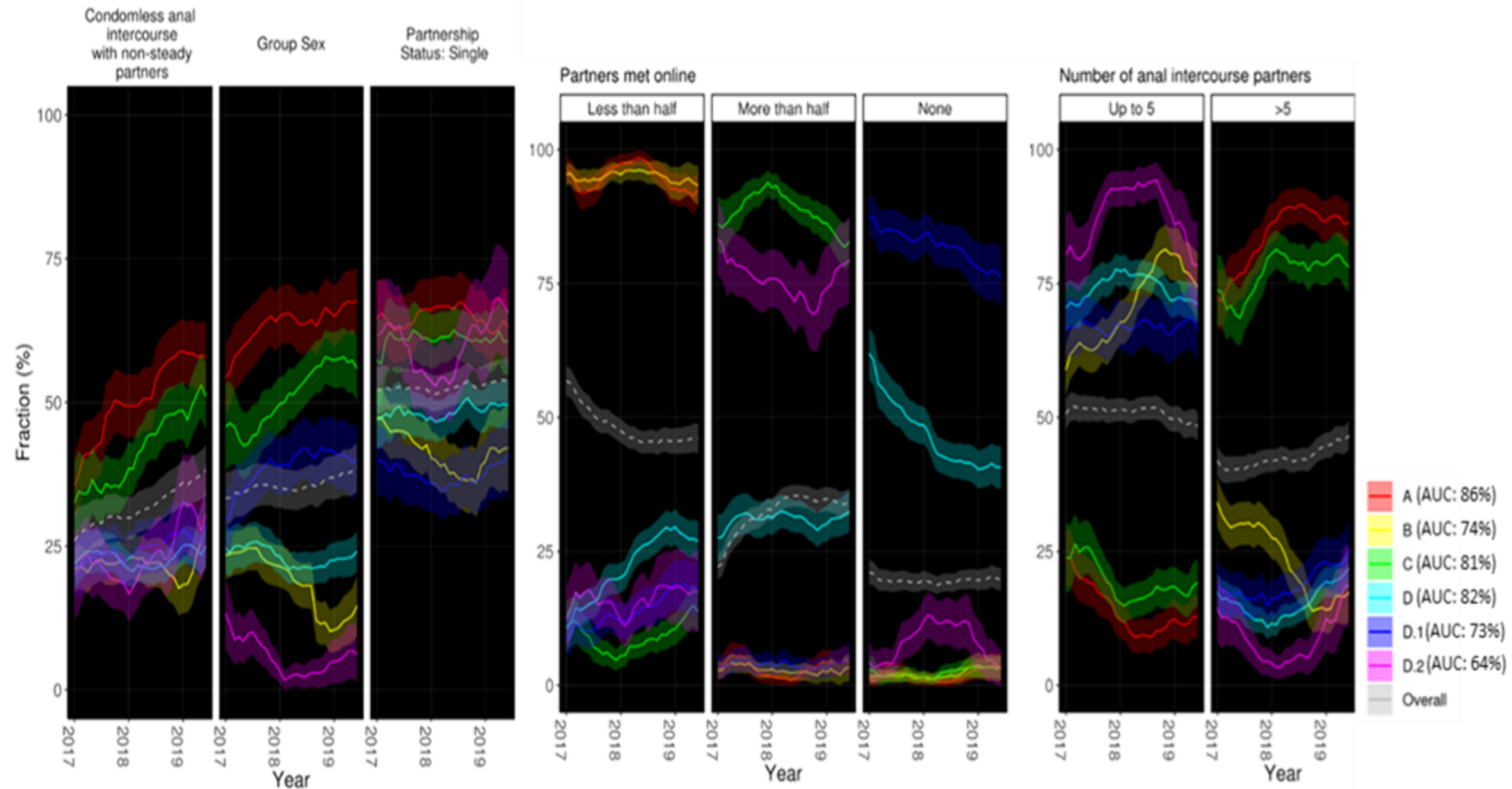
# Examples of value of available data II:

## Precise incidence estimates

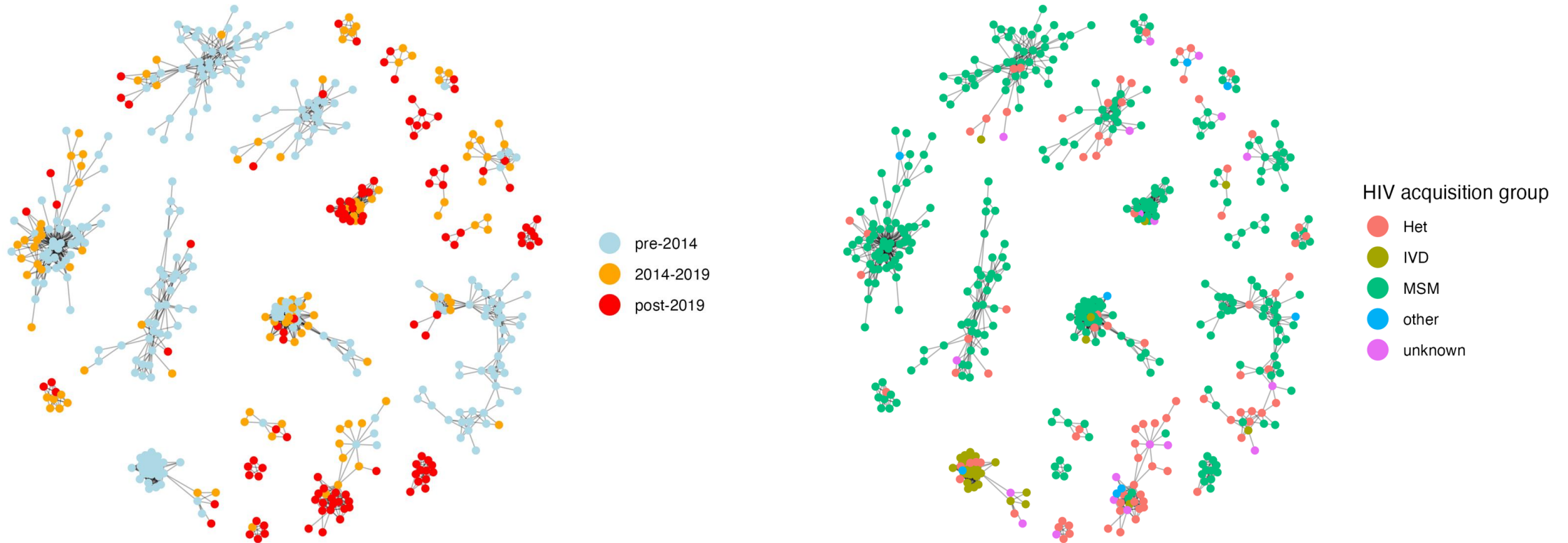


**Fig 3. Model simulations—Incidence of syphilis stratified by transmission risk (reported non-steady partners) and HIV-status;** MSM—men who have sex with men; nsP—non-steady partners; py—person-years; Solid red and dashed blue lines represent incidence rate of syphilis in MSM with and without nsP, respectively. The shaded regions represent the 95% quantile for the respective incidence rates.

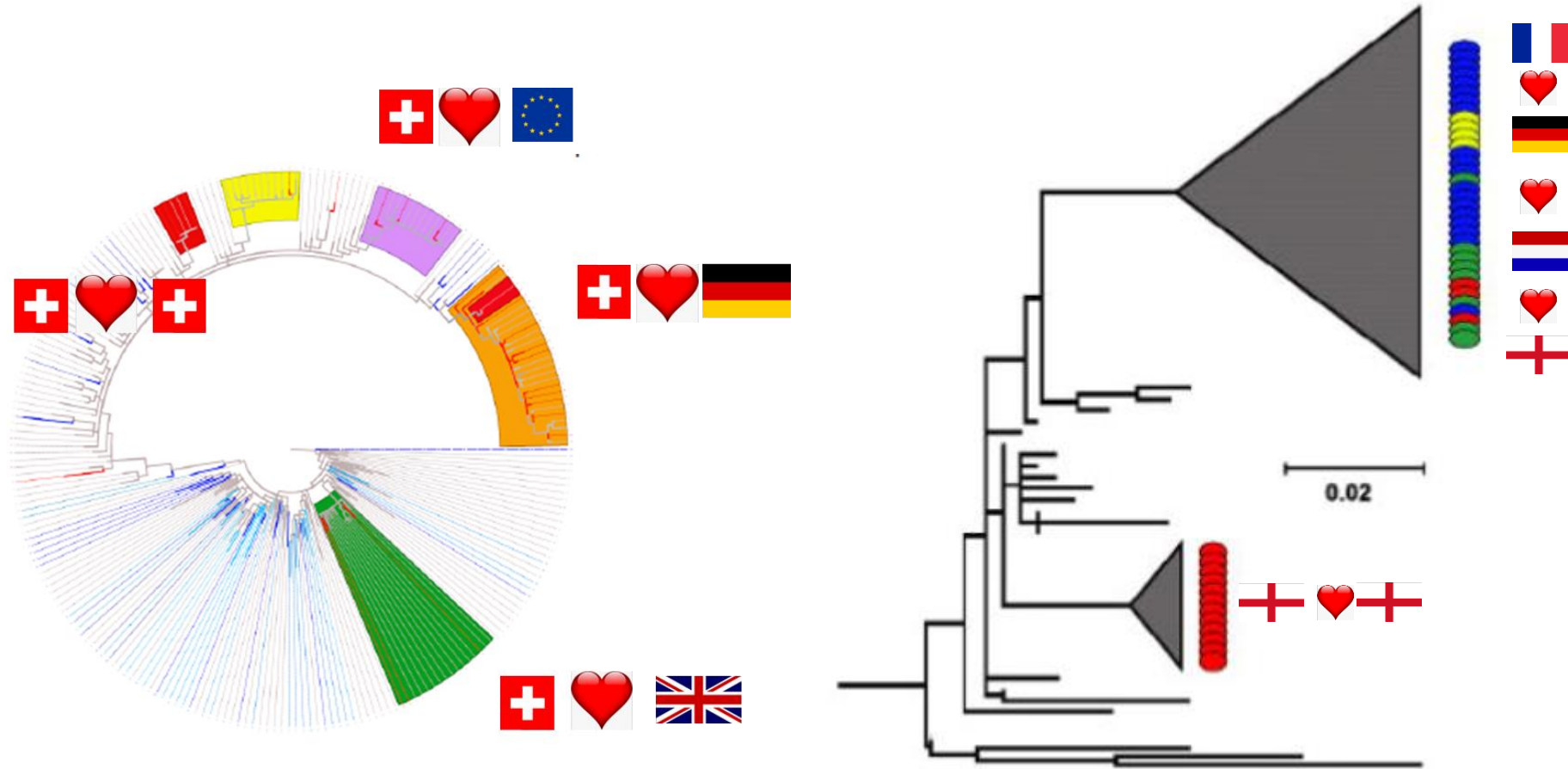
# Examples of value of available data III: Behavioral characteristics



# Examples of value of available data IV: Identifying transmission chains: HIV

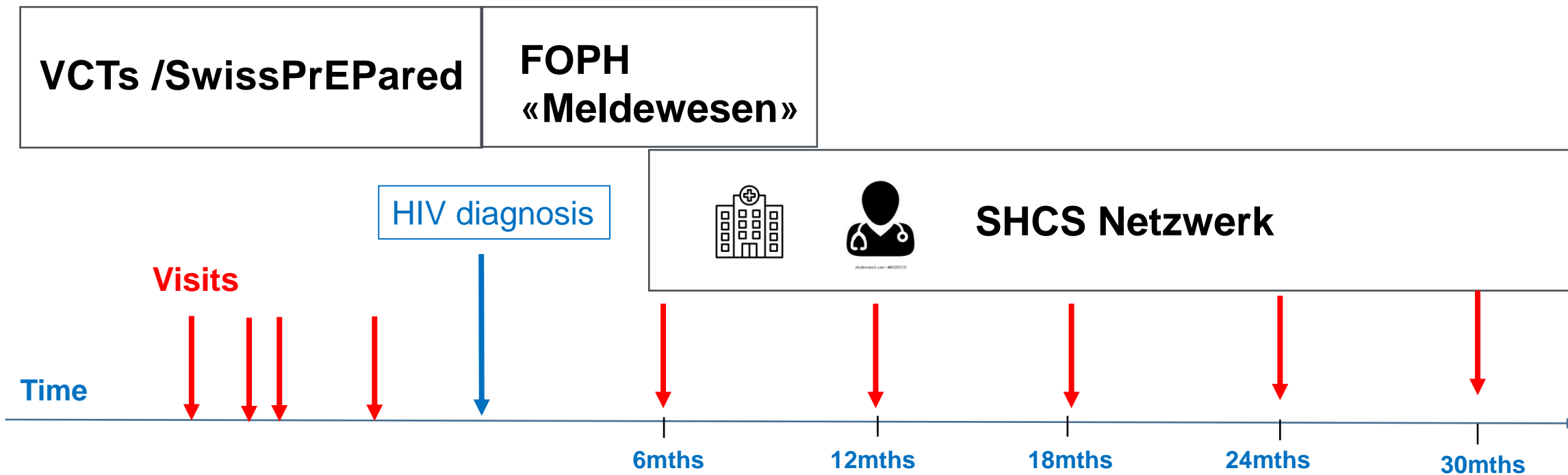


# Examples of value of available data V: Identifying transmission clusters: HCV



Phylogenetic analyses demonstrate international HCV transmission networks among MSM with HIV

# Optimal surveillance response: Preventing HIV-transmissions

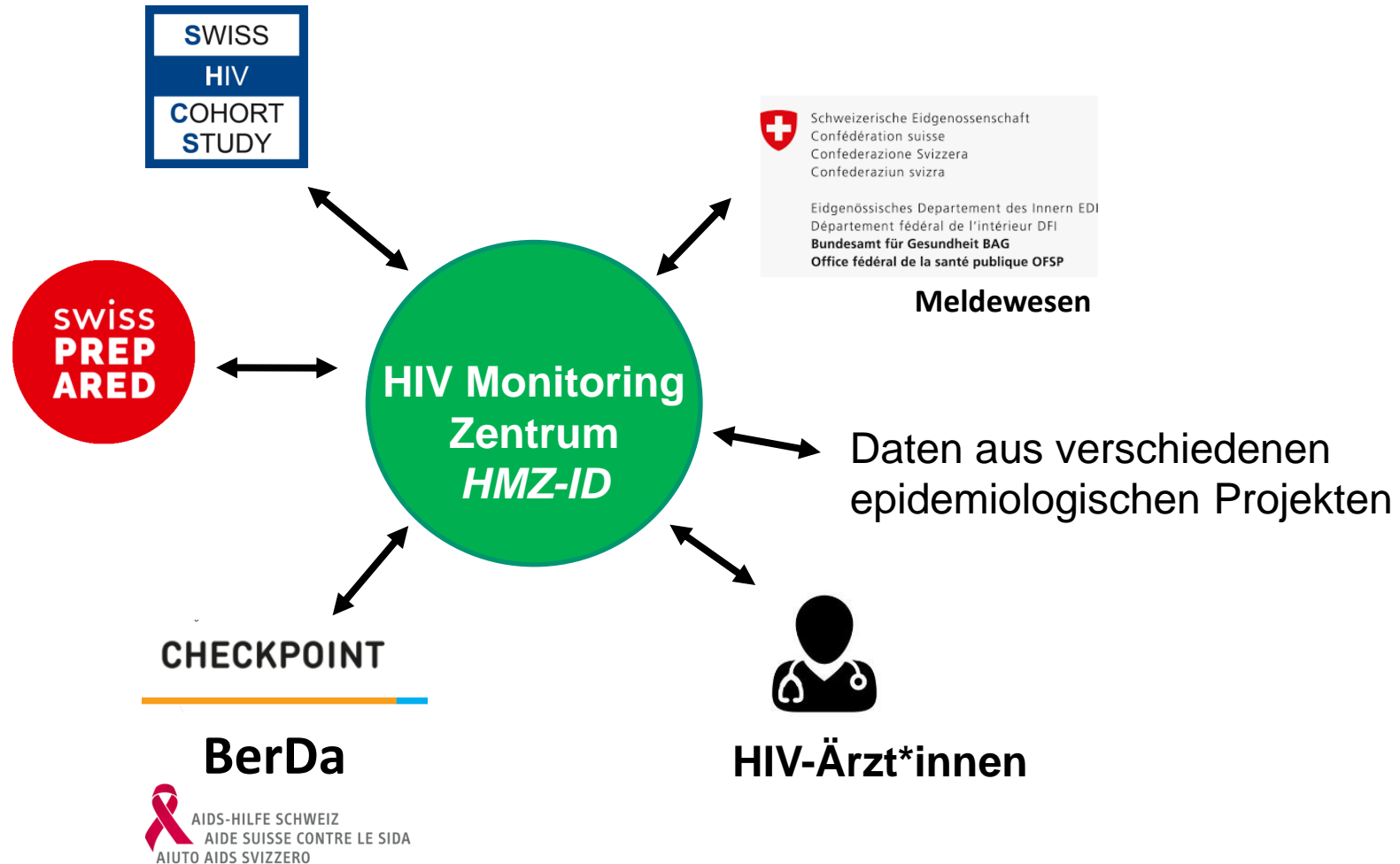


**SHCS (~80%) mit extensiver Datensammlung und Informed Consent**

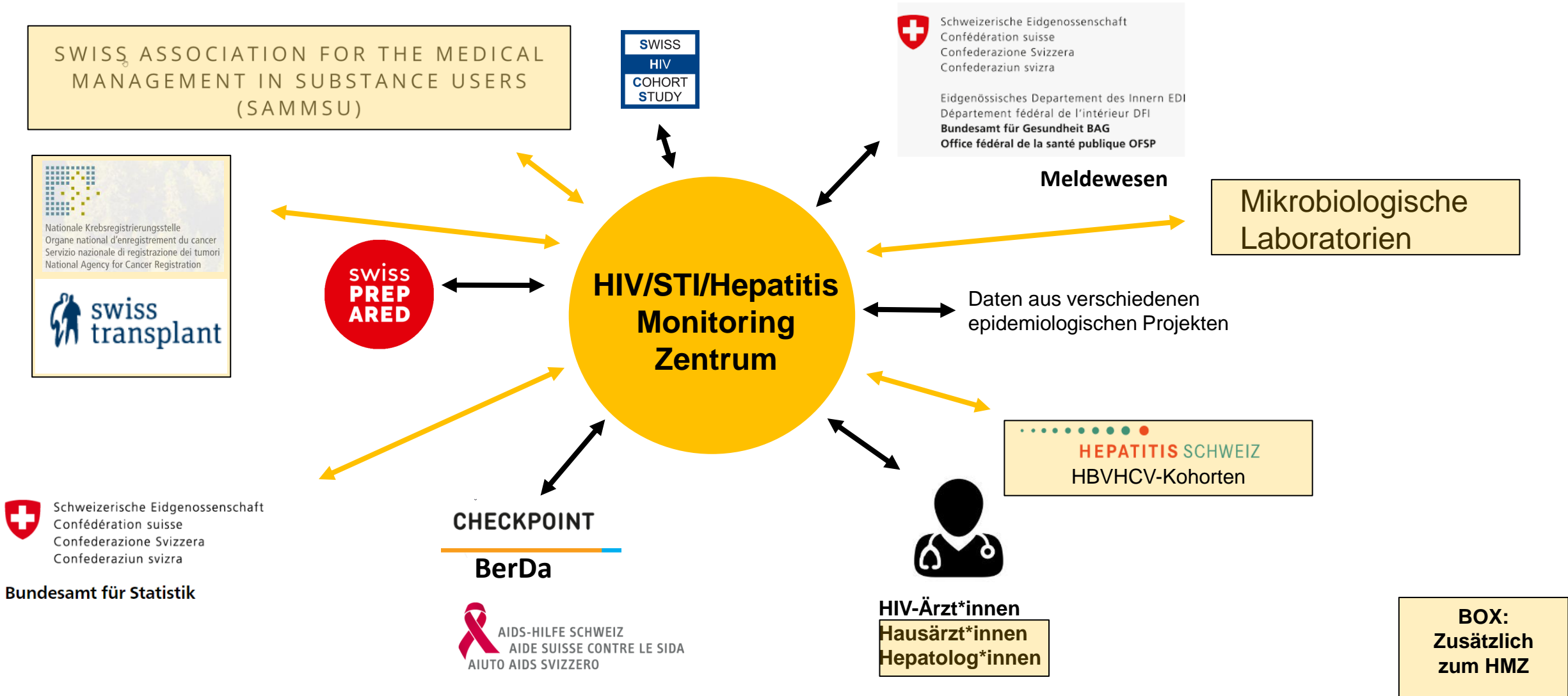
**Nicht-SHCS (~20%) mit minimalen essentiellen Daten/  
Grundlage: Epidemiengesetz**

# Concept HIV Monitoring Zentrum (HMZ): An integrative approach

Collection, processing and communication  
of essential data towards HIV elimination



# Sammlung, Verarbeitung und Kommunikation der essentiellen Daten zur Elimination von HIV/STI/Hepatitis im Rahmen des NAPS



# «Minimal essential data HIV/STI/Hepatitis»

| Demographie /<br>Soziales               | Verhalten /<br>Prävention                          | Gesundheitszustand /<br>Therapie (nur Ja/Nein +<br>Datum) | Labordaten<br>(Resultat/Datum)  |
|---|--|---|---|
| Alter                                   | Sex mit Person(en)<br>mit Penis und/oder<br>Vagina | Therapie:<br>HIV, STI, Hepatitis                          | Neudiagnosen:<br>HIV (inkl. <i>recency<br/>estimate</i> )<br>Hepatitis B/C/STIs |
| Person mit Penis /<br>Person mit Vagina | PrEP   | Hospitalisationen   | Follow-up:<br>HIV RNA<br>HCV RNA, HBV DNA,<br>HBs Ag<br>STIs                    |
| Herkunftsland                           | Kondomgebrauch                                     | Todesfälle  |   |
| Stigma                                  | IV Drogenkonsum<br>Hepatitis Impfung               | AIDS<br>Leberzirrhose, HCC,<br>Lebertransplantationen     | CD4 Kategorie<br>(nur nach HIV Diagnose)  |

# Datenquellen «Minimal essential data»

|                                  | Meldewesen<br>Mikrobiologische<br>Laboratorien | SHCS-<br>Netzwerk | SwissPrEPared | BeRDa | BA für Statistik /<br>SAMMSU<br>/Krebsreg./<br>Swisstransplant | Hepatolog*innen<br>Hausarzt*Innen |
|----------------------------------|--|-------------------|---------------|-------|--|-----------------------------------|
| Alter                            | X  | X                 | X             | X     | X  | X                                 |
| Geschlecht                       | X  | X                 | X             | X     | X  | X                                 |
| Herkunftsland                    | (X)  | X                 | X             |       |  | X                                 |
| Stigma                           |  | X                 |               |       |  |                                   |
| Partnerstatus                    |  | X                 | X             | X     |  |                                   |
| PrEP                             |  |                   | X             |       |  |                                   |
| Kondomgebrauch                   | X  | X                 | X             | X     |  |                                   |
| IV-Drogenkonsum                  | X  | X                 | X             | X     |  |                                   |
|                                  |  |                   |               |       |  |                                   |
| Therapie:<br>HIV, STI, Hepatitis |  | X                 | X             |       |  |                                   |
| Hospitalisationen                |  | X                 | X             |       |  |                                   |
| Todesfälle                       |  | X                 | X             |       | X  |                                   |
| AIDS                             | X  | X                 |               |       |  |                                   |
| HCC / Leberzirrhose / LTx        |  |                   |               |       | X  | X                                 |
| HIV Status                       | X  | X                 | X             | X     |  |                                   |
| HIV RNA, HCV RNA, HBV DNA        | X  | X                 | X             |       |  |                                   |
| STIs / Hepatitis                 | X  | X                 | X             |       |  | X                                 |
| CD4 Zellzahl                     |  | X                 |               |       |  |                                   |

# Added value Monitoring Centre for surveillance-response (I)

## HIV:

- Prevention / Behaviour:
  - How and where does risk behaviour change before / after HIV diagnoses?
  - What is the impact of campaigns on behaviour?
  - Do interventions change behaviour?
- Where, when and in whom do HIV-transmissions occur?
- Are there transmission chains which could be interrupted?
- Are new HIV-diagnosis related to gaps in PrEP uptake?
- Where are the gaps in the HIV cascade?
- To which extent does treatment uptake and efficacy differ in persons within and outside the SHCS?
- What is the impact of campaigns on HIV transmissions
- ...

# Added value Monitoring Centre for surveillance-response (II)

## Hepatitis / STIs:

- Where and when do HCV/HBV/STI transmissions occur?
- To which extent do transmissions overlap, „shared transmission pathways“?
- „Clusters“ of STI/Hepatitis/HIV transmissions?
- To which extent does PrEP impact STI and hepatitis transmissions?
- Risk factors for recurrent STIs? [cannot be identified sufficiently with „Meldewesen“]
- Complications of viral hepatitis: Are we on track for achieving elimination targets?
- Added value of unique identifiers in the monitoring centre:
  - data from different sources can be attributed to correct person
  - longitudinal analyses are possible (eg identification of recurrent infections)
  - Reduction duplicated entries in «Meldewesen»

...

# Surveillance-reponse 2025 😊

