

# SLOVENIA

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## VHPB BALKAN MEETING

*CURRENT SITUATION:  
EPIDEMIOLOGY, BURDEN OF  
DISEASE, SCREENING &  
PREVENTION, CASCADE OF  
CARE*



# DECLARATION OF CONFLICT OF INTEREST

- Lecturer: Abbvie, Bayer, Gilead, Merck, Sandoz
- Manuscript preparation: Abbvie, Gilead, Merck
- Travel/accommodational meeting expences: Abbvie, Gilead, Merck

No conflict of interest regarding this presentation

# SLOVENIA

## EPIDEMIOLOGY - HBV

| PREVALENCE                | HBsAg (year)                          |
|---------------------------|---------------------------------------|
| General population        | est. <b>0.8% ?</b> (2019)             |
| Blood donors (first time) | <b>0.004 %</b> (2018-2020); N=250 640 |
| Pregnant women            | NA (a national study in progress)     |
| Risk Groups               |                                       |
| PWID                      | 2.5% (2003)                           |
| MSM                       | 0.25% (2019-2022); N=1 600            |
| Prisoners                 | NA                                    |
| Other                     | -                                     |
| Healthcare workers        | NA                                    |

# SLOVENIA

## EPIDEMIOLOGY - HBV

| INCIDENCE          | Acute:<br>HBsAg (most common age group)   | Chronic:<br>HBsAg (most common age group)   |
|--------------------|---|---|
| General population | 2019: <b>0.4/100 000</b> (65-74 y)<br>2020: <b>0.1/100 000</b> (55-64 y)<br><b>NO INFANTS*</b> (since 1996) | 2019: <b>2.5/100 000</b> (55-64 y)<br>2020: <b>1.2/100 000</b> (45-54 y)<br><b>NO INFANTS*</b> (since 1996) |

\*born to parents with Slovenian origin

| Number of annually reported cases (cases /100 000) of acute and chronic HBV infection in Slovenia, period 2016-2020 |   |   |   |   |   |
|---|---|---|---|---|---|
| LETO  | 2016                                      | 2017                                      | 2018                                      | 2019                                      | 2020                                      |
|   | št. primerov<br>(št.primero /<br>100.000) | št. primerov<br>(št.primero /<br>100.000) | št. primerov<br>(št.primero /<br>100.000) | št. primerov<br>(št.primero /<br>100.000) | št. primerov<br>(št.primero /<br>100.000) |
| akutni hepatitis B  | 18 (0,9)                                  | 15 (0,7)                                  | 10 (0,5)                                  | 9 (0,4)                                   | 2 (0,1)                                   |
| kronični hepatitis B  | 22 (1,1)                                  | 37 (1,8)                                  | 45 (2,2)                                  | 52 (2,5)                                  | 26 (1,2)                                  |



**WHO 2021**

Elimination of chronic HBV infection as a public health problem

|                            |                            |
|----------------------------|----------------------------|
| Incidence<br>95% reduction | Mortality<br>65% reduction |
|----------------------------|----------------------------|

**HBV EMTCT**

≤0.1% HBsAg prevalence in ≤5 year olds<sup>a,b</sup>

Additional target: ≤2% M1C1 rate (where use of targeted HepB-BD)<sup>c</sup>

Annual mortality<sup>a</sup> (HBV) ≤4/100 000

# SLOVENIA

## EPIDEMIOLOGY - HCV

### HCV-seroprevalence by selected groups, period 1992-2015

| Population            | HCV RNA + (%) | N        | Year             |
|-----------------------|---------------|----------|------------------|
| Haemophiliacs         | <b>26.7%</b>  | 374      | <b>1992</b>      |
| Blood donors          | 0.025%        | 1,4 mill | <b>1993-2000</b> |
| Haemodialysis         | 1.1%          | 1343     | <b>1995</b>      |
| <b>PWID on OAT</b>    | <b>16.5%</b>  | 1,050    | 2007             |
| <b>Prison inmates</b> | <b>26%</b>    | 378      | 2006             |
| Pregnant women        | 0.08%         | 9,574    | 2013             |

Maticic M. JEADV 2008; Kastelic A et al. 2nd Slovenian Conference on HCV Infection in IVDU, March 2007; Skamperle M et al. Acta Dermatoven APA 2014; 23: 25-6.

EMCDDA. <http://www.emcdda.europa.eu/publications/country-overviews/sj>; Kopilovic B et al. Euro Surveill 2015; 20(22): 21144. Seme K, et al. Nephron. 1997;77(3):273-8.

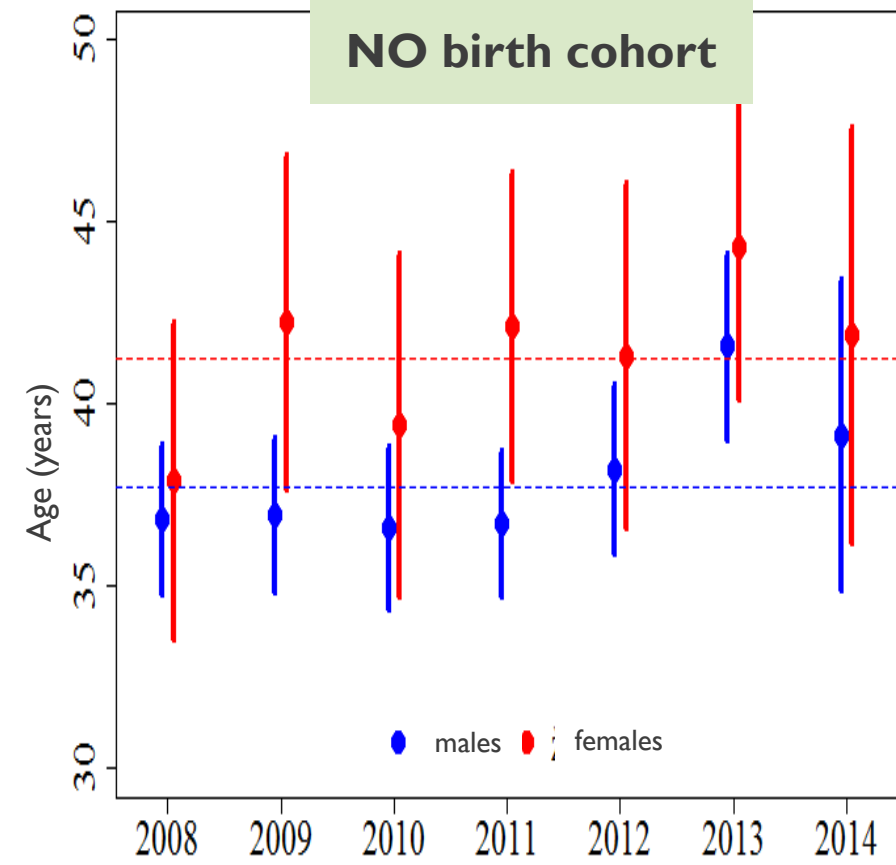
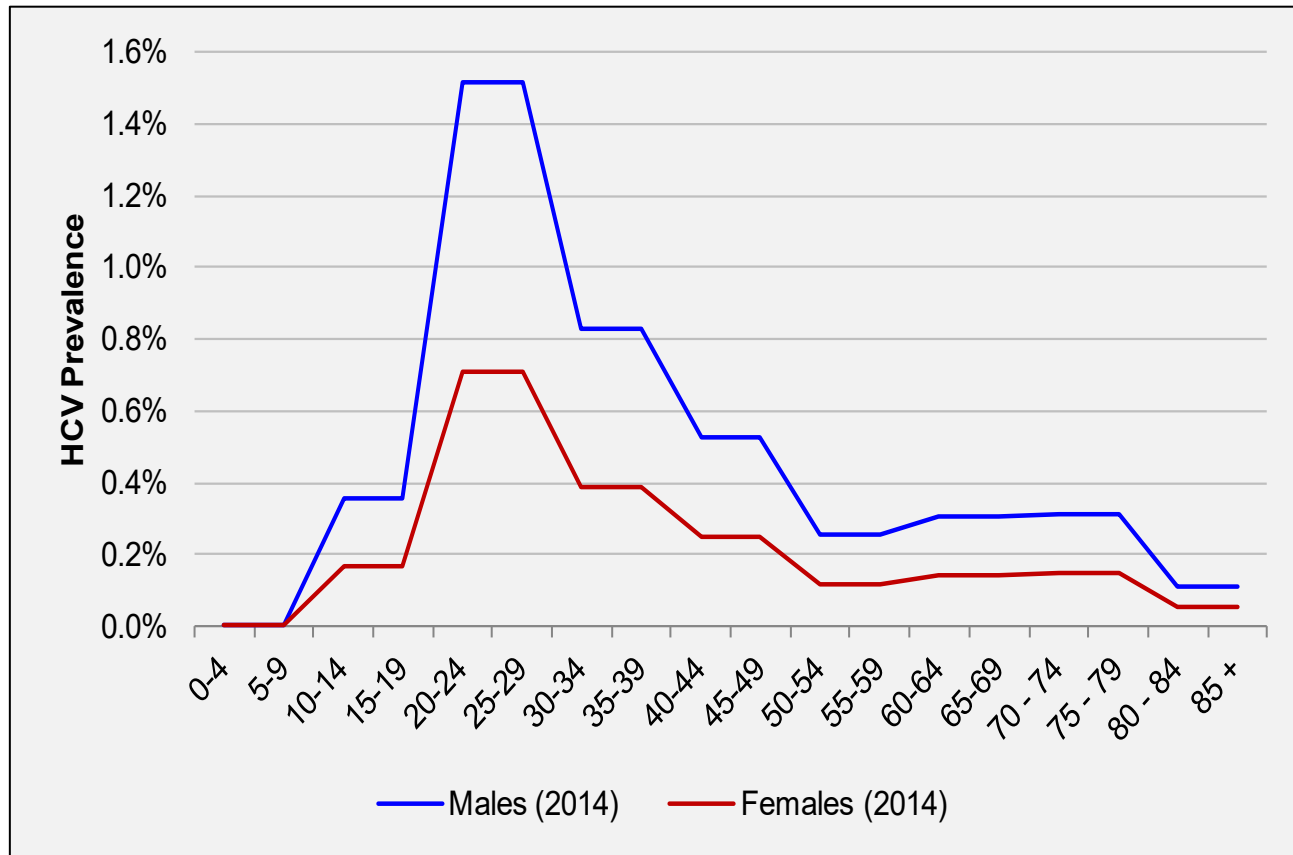
Gregorčič S et al. ECCMID 2018. Madrid, April 23, 2018. Poster #Mon-13. Institute for transfusion Medicine Slovenia; Annual Reports 1993-2000.



# SLOVENIA

## EPIDEMIOLOGY - HCV

Anti-HCV positive individuals by age and gender, period 2008 - 2014



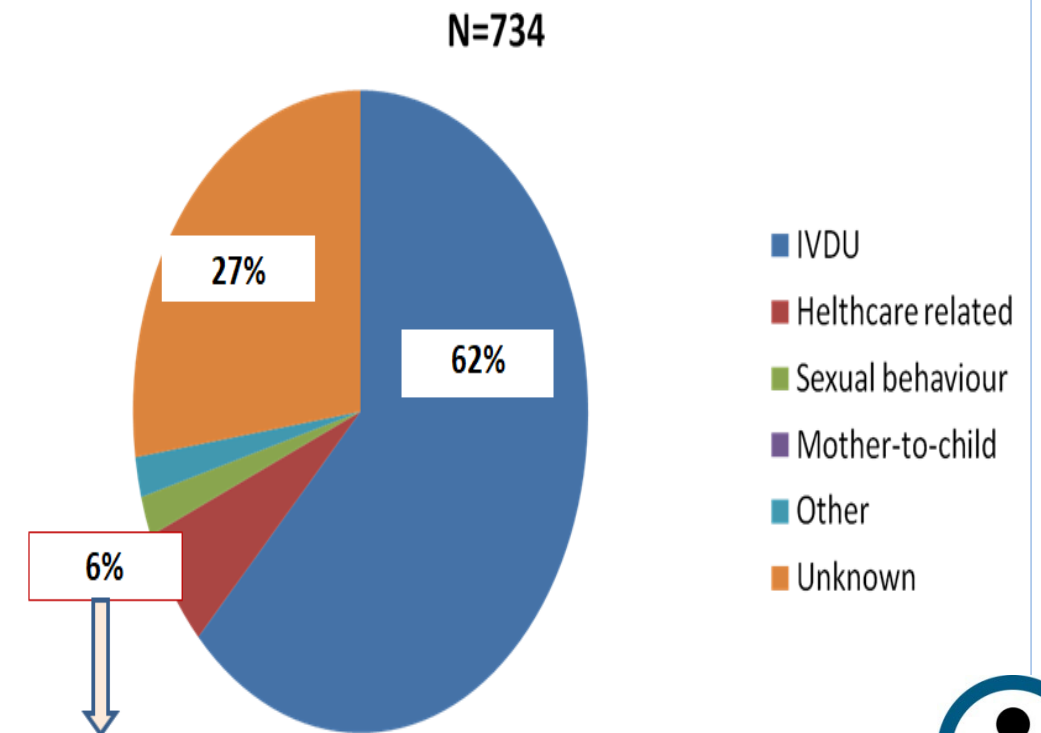
# SLOVENIA

## EPIDEMIOLOGY - HCV

### Characteristics of anti-HCV positive individuals in two observational periods

|                            | Period        |               | p-value |
|----------------------------|---------------|---------------|---------|
|                            | 1993-2007     | 2008-2015     |         |
| <b>Number</b>              | 2719          | 1398          |         |
|                            | <b>4117</b>   |               |         |
| <b>Sex (n, %)</b>          |               |               | 0.27    |
| Males                      | 1811 (66.6%)  | 955 (68.3%)   |         |
| Females                    | 908 (33.4%)   | 443 (31.7%)   |         |
| <b>Age at diagnosis</b>    |               |               | <0.001* |
| mean, SD                   | 36.65 (15.29) | 39.33 (14.40) |         |
| <b>Risk factors (n, %)</b> |               |               | <0.001* |
| Intravenous drug use       | 1029 (37.8%)  | 818 (58.5%)   |         |
| Healthcare                 | 300 (11.9%)   | 80 (5.7%)     |         |
| Sexual contacts            | 38 (1.4%)     | 29 (2.1%)     |         |
| Other                      | 24 (0.9%)     | 37 (2.6%)     |         |
| Unknown                    | 1328 (48.8%)  | 434 (31.1%)   |         |

### Proportion of HCV-seropositive persons by risk groups, period 2008-2014



• Healthcare related: 80% blood-transfusion recipients before 1992



# SLOVENIA

## EPIDEMIOLOGY - HCV

| PREVALENCE                | HCV RNA (year)                |
|---------------------------|-------------------------------|
| General population        | 0.01% (2022)                  |
| Blood donors (first time) | 0.000% (2018-2020); N=250 640 |
| Pregnant women            | 0.08% (2013); N=9 574         |
| Risk Groups               |                               |
| PWID                      | 16.5% (2007)                  |
| MSM                       | 0.13% (2019-2022); N=4 783    |
| Prisoners                 | 26% (2006)                    |
| Other                     | -                             |
| Healthcare workers        | 0.7% (2000-2013)              |

Maticic M. JEADV 2008; Kastelic A et al. 2nd Slovenian Conference on HCV Infection in IVDU, March 2007; Baklan Z, et al. Wien Klin Wochenschr 2004; 116(2): 5-7.

EMCDDA. <http://www.emcdda.europa.eu/publications/country-overviews/si>; Kopilovic B et al. Euro Surveill 2015; 20(22): 21144. Gregorčič S et al. ECCMID 2018. Madrid, April 23, 2018. Poster #Mon-13.

Rahne U et al. Institute for transfusion Medicine Slovenia; Report 2018-2020. Legebitra. Annual Report on STI testing in MSM, 2019.-2022.





# SLOVENIA

## EPIDEMIOLOGY - HCV

| INCIDENCE          | Acute:<br>HCV RNA (most common age group)                                | Chronic:<br>HCV RNA (most common age group)                              |
|--------------------|--|--|
| General population | 2019: <b>0.1/100 000</b> (25-34 y)<br>2020: <b>0.1/100 000</b> (35-44 y) | 2019: <b>2.5/100 000</b> (35-44 y)<br>2020: <b>1.1/100 000</b> (35-44 y) |

| WHO 2021  |   |
|---|---|
| Elimination of chronic HCV infection as a public health problem |   |
| Incidence<br>80% reduction                                      | Mortality<br>65% reduction                        |
| Annual incidence (HCV)<br>≤5/100 000<br>≤2/100 (PWID)           | Annual mortality <sup>B</sup> (HCV)<br>≤2/100 000 |

| Number of annually reported cases (cases / 100 000) of acute and chronic HCV infection in Slovenia, period 2016-2020 |   |   |   |   |   |
|--|---|---|---|---|---|
| LETO   | 2016  | 2017  | 2018  | 2019  | 2020  |
|  | št. primerov<br>(št. primerov /<br>100.000) | št. primerov<br>(št. primerov /<br>100.000) | št. primerov<br>(št. primerov /<br>100.000) | št. primerov<br>(št. primerov /<br>100.000) | št. primerov<br>(št. primerov /<br>100.000) |
| akutni hepatitis C   | 7 (0,3)                                     | 6 (0,3)                                     | 5 (0,2)                                     | 1 (0,1)                                     | 2 (0,1)                                     |
| kronični hepatitis C   | 108 (5,2)                                   | 111 (5,4)                                   | 114 (5,5)                                   | 53 (2,5)                                    | 24 (1,1)                                    |

# SLOVENIA

## EPIDEMIOLOGY - HEV

| PREVALENCE                | HBsA (year)                          | HCV RNA (year)                      |
|---------------------------|--------------------------------------|-------------------------------------|
| General population        | ?                                    | <b>0.01%</b> (2022)                 |
| Blood donors (first time) | <b>0.004 %</b> (2018-2020) N=250 640 | <b>0.000%</b> (2018-2020) N=250 640 |
| Pregnant women            | NA                                   | 0.08% (2013) N=9 574                |
| Risk Groups               |                                      |                                     |
| PWID                      | 2.5% (2003); 2-8.1% (2010-2014)      | 16% (2007), 13% (2022)              |
| MSM                       | 0.25% (2019-2022); N=1 600           | 0.13% (2019-2022); N=4 783          |
| Prisoners                 | NA                                   | 26 (2006)                           |
| Other                     | -                                    | -                                   |
| Healthcare workers        | NA                                   | 0.7% (2000-2013)                    |
|                           | In risk-population (specify)         | Prevalence (year)                   |
| HEV RNA                   | Blood donors                         | 0.057% (2019, a study); N=8 817     |
| Anti HEV (IgG)            | Blood donors                         | 7.6% (2019, a study); N=1264        |



# SLOVENIA

## EPIDEMIOLOGY - HEV

| PREVALENCE                | HBsA (year)                          | HCV RNA (year)                      |
|---------------------------|--------------------------------------|-------------------------------------|
| General population        | ?                                    | <b>0.01%</b> (2022)                 |
| Blood donors (first time) | <b>0.004 %</b> (2018-2020) N=250 640 | <b>0.000%</b> (2018-2020) N=250 640 |
| Pregnant women            | NA                                   | 0.08% (2013) N=9 574                |
| Risk Groups               |                                      |                                     |
| PWID                      | 2.5% (2003); 2-8.1% (2010-2014)      | 16% (2007), 13% (2022)              |
| MSM                       | 0.25% (2019-2022); N=1 600           | 0.13% (2019-2022); N=4 783          |
| Prisoners                 | NA                                   | 26 (2006)                           |
| Other                     | -                                    | -                                   |
| Healthcare workers        | NA                                   | 0.7% (2000-2013)                    |
|                           | In risk-population (specify)         | Prevalence (year)                   |
| Anti HAV                  | NA                                   | NA                                  |
| Anti HEV                  | Blood donors                         | <b>7.6%</b> (2019, a study); N=1264 |



# SLOVENIA

## EPIDEMIOLOGY - HAV



Spread of hepatitis A virus strains of genotype IB in several EU countries and the United Kingdom

News

29 Sep 2022

## An **OUTBREAK**

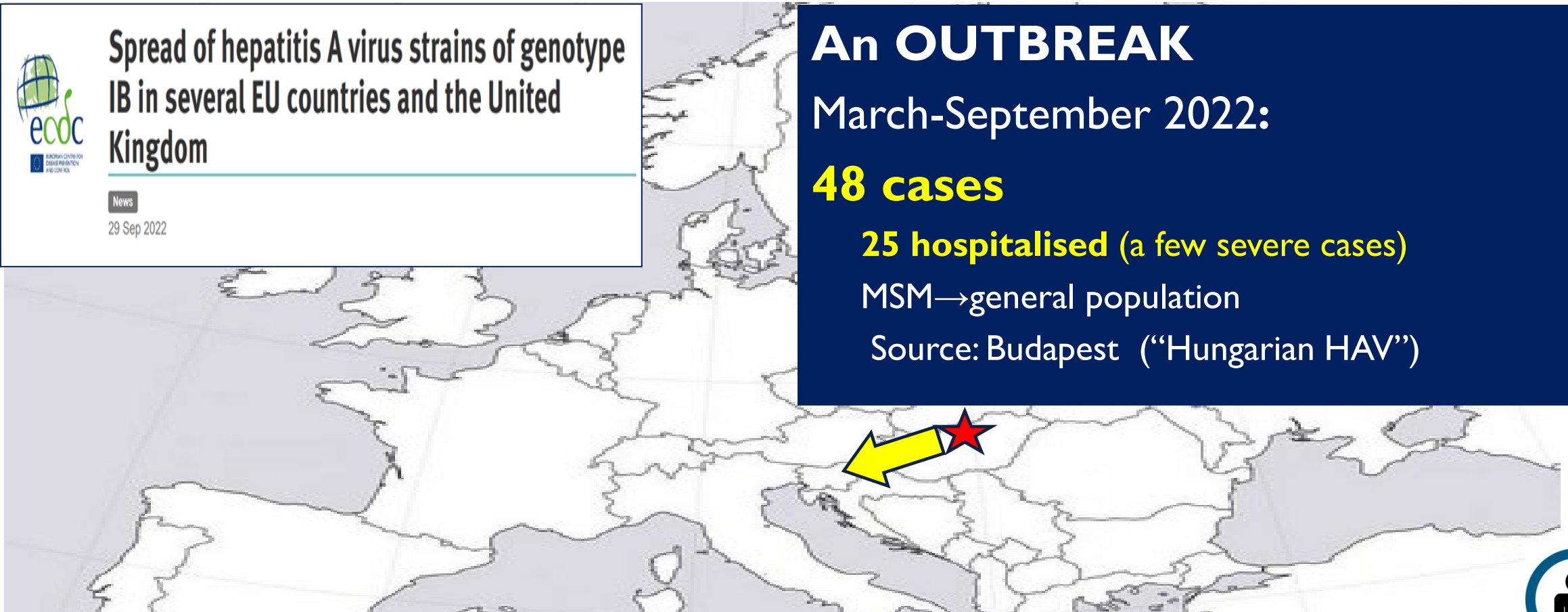
March-September 2022:

**48 cases**

**25 hospitalised** (a few severe cases)

MSM → general population

Source: Budapest (“Hungarian HAV”)



# SLOVENIA

## VACCINATION PROGRAM

| Hepatitis A | Y/N | population + Schedule   | Since/period   |
|-------------|-----|---|--|
| Universal   | N   | -   | -  |
| Risk group  | Y   | Professional / epidemiological exposure<br>MSM  | 1993<br>2015   |
| Hepatitis B | Y/N | population + Schedule   | Since/period   |
| Universal   | Y   | Children  | Birth cohort ≥1992                                   |
| Catch-up    | N   | -   | -  |
| Risk Group  | Y   | HCW<br>PWID<br>Prisoners<br>MSM<br>Medical indication<br>Family members/sex partners<br>Refugees from Ukraine | 1986<br>1995<br>2016<br>2015<br>1993<br>1993<br>2022 |



# SLOVENIA

## NATIONAL PROGRAM FOR CHILDREN VACCINATION

- 3rd dose vaccination coverage:

| YEAR             | 3rd dose (%) |
|------------------|--------------|
| <b>2016/2017</b> | 88,7         |
| <b>2017/2018</b> | 87,2         |
| <b>2018/2019</b> | 87,5         |
| <b>2019/2020</b> | 79,9         |
| <b>2020/2021</b> | 79,9         |

- Birth cohort  $\geq 1992$

### WHEN?

- Untill 2020: at age 5-6 y
- From Jan 2020: at age 3 mth  
(6-valent vaccine)



# SLOVENIA SCREENING

| Recommended for following groups: | Hep B | Hep C |
|-----------------------------------|-------|-------|
| General population                | N     | N     |
| Birth cohorts                     | N     | N     |
| Blood and organ donors            | Y     | Y     |
| Pregnant women                    | Y     | N     |
| PWID                              | Y     | Y     |
| STI clinic patients               | Y     | Y     |
| Haemodialysis patients            | Y     | Y     |
| Health care workers               | Y     | Y     |
| Men having sex with men           | Y     | Y     |
| Prison population                 | Y     | Y     |
| Migrants                          | N     | N     |
| Others: Refugees from Ukraine     | Y     | Y     |

# SLOVENIA SCREENING

| Recommended for following groups: | Hep B | Hep C |
|-----------------------------------|-------|-------|
| General population                | N     | N     |
| Birth cohorts                     | N     | N     |
| Blood and organ donors            | Y     | Y     |
| Pregnant women                    | Y     | N     |
| PWID                              | Y     | Y     |
| STI clinic patients               | Y     | Y     |
| Haemodialysis patients            | Y     | Y     |
| Health care workers               | Y     | Y     |
| Men having sex with men           | Y     | Y     |
| Prison population                 | Y     | Y     |
| Migrants                          | N     | N     |
| Others: Refugees from Ukraine     | Y     | Y     |



# SLOVENIA

## ACTIVE SEARCH FOR HBV/HCV SCREENING IN REFUGEES FROM UKRAINE

### A QUESTIONNAIRE on possible HBV, HCV, HIV infections for refugees from Ukraine For personal use only (Engl/Ukr)

#### A QUESTIONNAIRE for displaced persons from Ukraine

regarding infections with HIV, hepatitis B virus, hepatitis C virus

(ONLY FOR PERSONAL USE)

By answering to the following questions you may importantly affect your health and receive appropriate medical care in Slovenia if needed.

1. Are infected with HIV: NO YES Not sure  
2. Do you have hepatitis B: NO YES Not sure  
3. Do you have hepatitis C: NO YES Not sure

If you answered to any of the questions with "YES", you can get medical care at one of the following centers for managing these diseases:

Ljubljana: Clinic for Infectious Diseases and Febrile Illnesses, Japljeva 2  
Tel: 01 522 44 54 Email: [narocanje.kibvs@kclj.si](mailto:narocanje.kibvs@kclj.si)  
Maribor: University Clinical Centre Maribor  
Tel: 02 321 27 40 Email: [infekcijska.ambulanta@ukc-mb.si](mailto:infekcijska.ambulanta@ukc-mb.si)  
Celje: Splošna bolnica Celje  
Tel: 03 423 30 08 Email: [enarocanje@sb-celje.si](mailto:enarocanje@sb-celje.si)  
Murska Sobota: Splošna bolnica Murska Sobota  
Tel: 02 512 34 55 Email: [info@sb-ms.si](mailto:info@sb-ms.si)  
Novo mesto: Splošna bolnica Novo mesto  
Tel: 07 391 65 82 Email: [adm.infekcijski@sb-nm.si](mailto:adm.infekcijski@sb-nm.si)

Please continue if you answered to the questions above with "NO":

4. Is there any possibility that you are infected with HIV, hepatitis B virus or hepatitis C virus?  
NO YES I don't know  
5. Have you ever had a sexually transmitted infection (syphilis, gonorrhoea, chlamydia, etc.)?  
NO YES I don't know  
6. Have you or any of your family members had tuberculosis (now or in the past)?  
NO YES I don't know

7. Have you ever injected drugs? NO YES  
8. Have you had unprotected sex with multiple partners? NO YES  
9. If you are male: have you had unprotected sex with men?  
NO YES  
10. Are you a sex worker? NO YES  
11. Have you been sexually abused? NO YES  
12. Have you ever been incarcerated? NO YES  
13. Do you have a sexual partner, close family member, joint household member who has HIV infection or/and hepatitis B or/and hepatitis C?  
NO YES I don't know  
14. Have you ever received a blood transfusion? NO YES I don't know  
15. Have you ever been treated with haemodialysis? NO YES I don't know  
16. Are you taking medications that weaken your immune system?  
NO YES I don't know  
17. Do you have abnormal liver test results? NO YES I don't know  
18. Are you pregnant? NO YES I don't know

If you answered to any of the questions with "YES" or "I don't know", you are advised to test for infections with HIV, hepatitis B virus and hepatitis C virus.

You can get tested at general practitioners or you can be tested anonymously and free-of-charge at: Clinic for Infectious Diseases and Febrile Illnesses, Poljanski nasip 58, Ljubljana (on Mondays between 12.00-14.00) or at Blood Transfusion Centers (<http://www.ztm.si/testiranje/>).

If you are an active drug user, you can get tested at one of 22 Centers for Prevention and Treatment of Drug Addiction (CPZOPD) where you can also get a medical care for drug addiction (<https://www.infodroga.si/kam-po-nasvet/seznam-centrov-cpzopd/>).

In case the result of your test is POSITIVE, you will be provided with the necessary medical care at one of five centers for managing HIV, viral hepatitis B and C infections.

#### Accessible

##### On-line:

- Ministry of health RS
- National Institute of Public Health
- University Medical Centers
- General Hospitals
- Centers for Refugees

##### In paper:

- When applying for a Temporary Protection
- Centers for Refugees



# SLOVENIA

## TREATMENT

| National guidelines available  | Y/N (year)         |
|--|--------------------|
| Hepatitis B  | Y (2000 + updates) |
| Hepatitis C  | Y (1997+ updates)  |
| Management of HCV infection in PWID                                    | Y (2007)           |
| Prevention of HBV reactivation in persons on immunosuppressive therapy | Y (2008)           |
| Management of HBV in patients with chronic kidney disease – an update  | Y (2021)           |

National Viral Hepatitis Expert Board. CPG for HCV treatment. Ljubljana, 1997-2021.

National Viral Hepatitis Expert Board. CPG for HBV treatment. Ljubljana, 2000-2019.

Maticic M, Kastelic A. Zdrav Vestn 2009; 78: 529-39.

Matičič M, Poljak M. Zdrav Vestn 2010; 79: 599-608.

Mlinšek G, Oblak M, Arnol M, Matičič M. Clin Nephrol 2021 Suppl;96(1):119-126.



# SLOVENIA TREATMENT

| Drugs available for HCV treatment*         | Y/N      |
|--|----------|
| PegInterferon                              | N        |
| Ribavirin                                  | N        |
| Boceprevir                                 | N        |
| Telaprevir                                 | N        |
| Simeprevir                                 | N        |
| Sofosbuvir                                 | N        |
| Daclatasvir                                | N        |
| Sofosbuvir/Ledipasvir                      | N        |
| <b>Sofosbuvir/Velpatasvir</b>              | <b>Y</b> |
| <b>Glecaprevir/Pibrentasvir</b>            | <b>Y</b> |
| <b>Sofosbuvir/Velpatasvir/Voxilaprevir</b> | <b>Y</b> |
| Other (specify)                            | -        |

| Drugs available for HBV treatment* | Y/N      |
|------------------------------------|----------|
| <b>Lamivudine</b>                  | <b>Y</b> |
| Adefovir                           | N        |
| Telbivudine                        | N        |
| <b>Entacavir</b>                   | <b>Y</b> |
| <b>TDF</b>                         | <b>Y</b> |
| <b>TAF</b>                         | <b>Y</b> |

## Number of patients treated (cumulative)

|       |                   |
|-------|-------------------|
| Hep B | 801 (2000-2020)   |
| Hep C | 2 823 (1997-2020) |

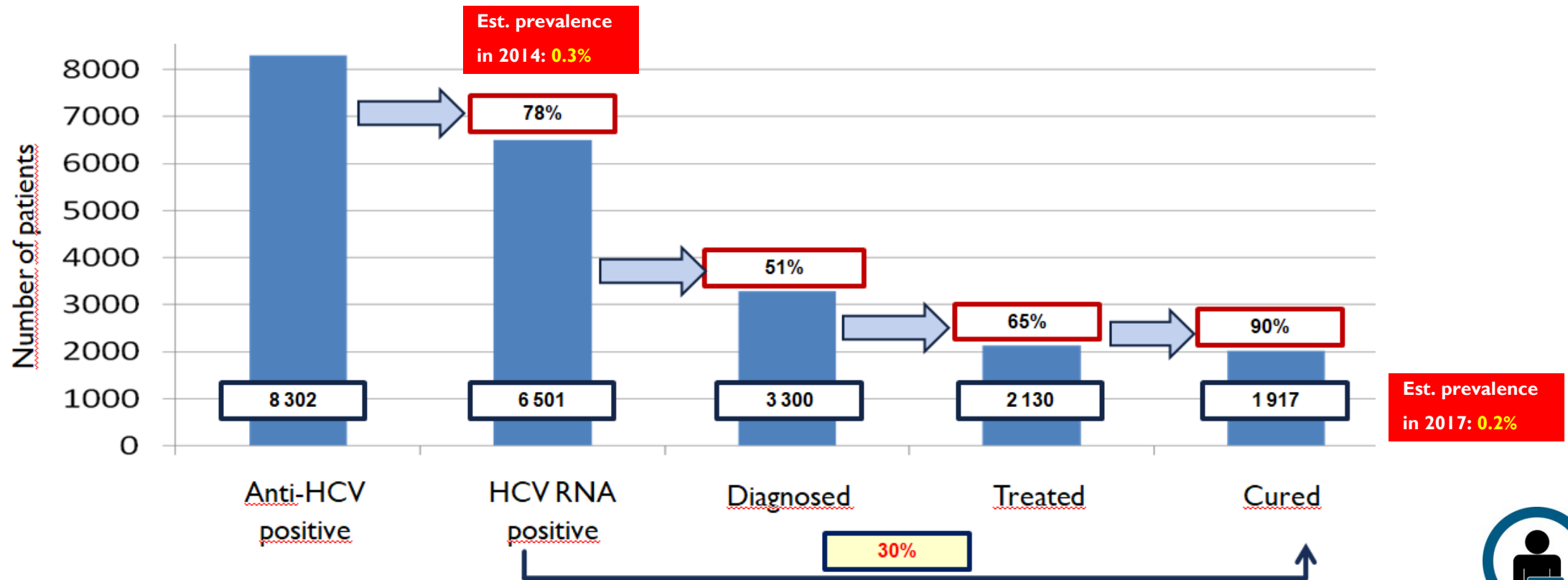
\*included on the national essential medicines list



# SLOVENIA

## HCV BURDEN - 2014

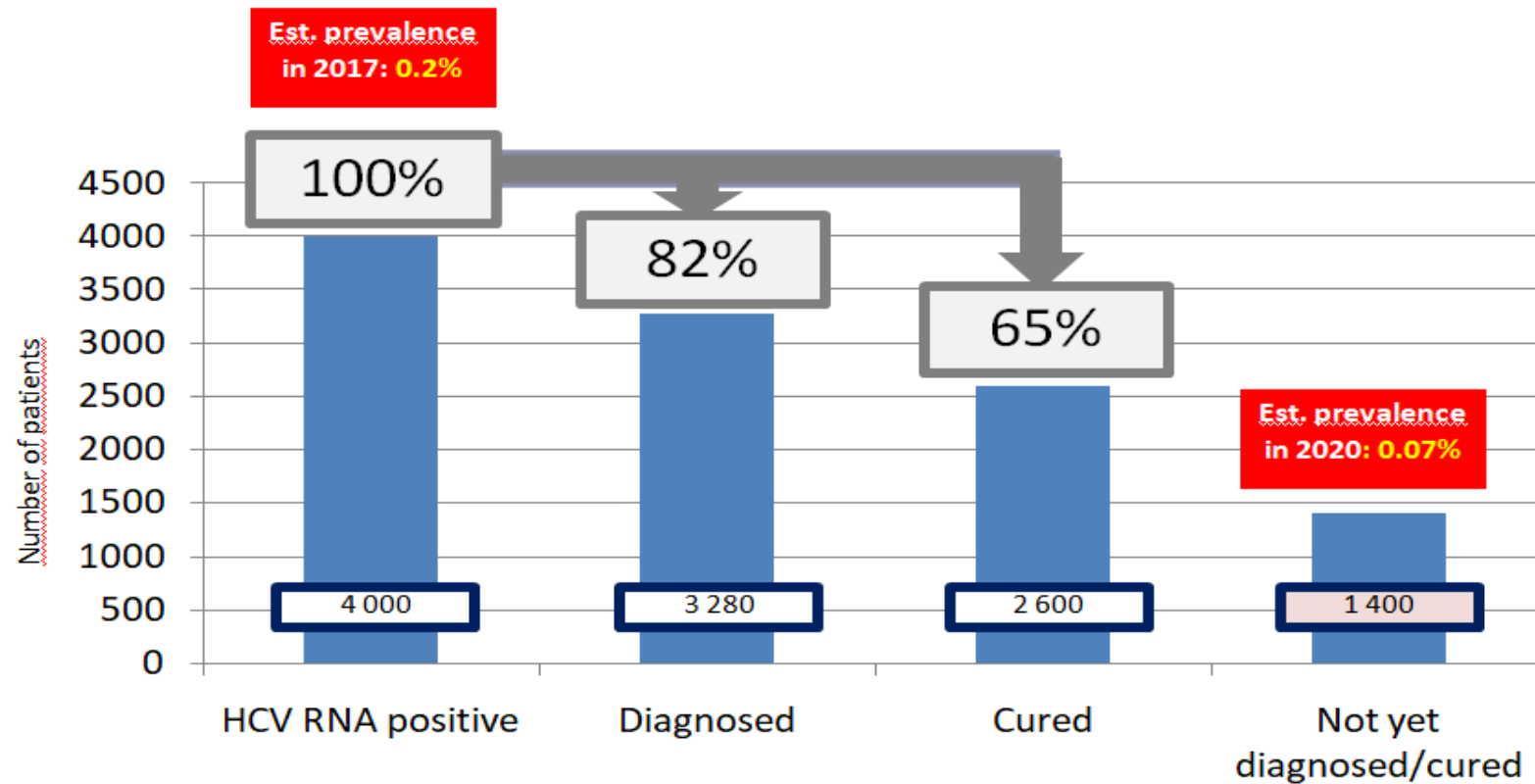
A Cascade-of-Care (1997-2014): est. HCV RNA prevalence **0.3%**



# SLOVENIA

## HCV BURDEN - 2020

A Cascade-of-Care (2017-2020): est. HCV RNA prevalence **0.07%**



THANK YOU

