

# Characteristics of Foreign-born Patients in the Swiss Hepatitis C Cohort Study: Implications for National Screening Recommendations

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## INTRODUCTION

- In Switzerland, hepatitis C virus (HCV) screening focused on persons with intravenous drug abuse (IVDA).
- Recently, foreign-born people were also recognized as a risk group: The Swiss Federal Office of Public Health (FOPH) recommends to screen patients who were born in countries with HCV prevalence  $\geq 2\%$ .
- The only country with important immigration to Switzerland and prevalence  $>2\%$  is Italy.
- We aimed to analyze if patient characteristics of HCV- diagnosed foreign-born patients could help to refine the existing screening recommendations.

## METHODS

- All patients from the SCCS and the FOPH surveillance data (since 1999) were included if age, gender, risk group and country or origin were known.
- Patients were grouped by region (Figure 1) or by country of birth representing  $\geq 1\%$  of SCCS data (Figure 2)
- Age and other patient characteristics were analyzed by history of IVDA.

## RESULTS

- Overall 99% of the 4,252 SCCS and 57% of the FOPH patients were included. Patient characteristics were similar.
- Main sources of infection in SCCS (Graph 1):  
**Western European- and Swiss-born: mostly IVDA (red)**  
**Southern European-born: in  $<60$ y both IVDA and non-IVDA; in  $>60$ y, non-IVDA (orange)**  
**born in other regions: non-IVDA across all ages (blue)**
- History of non-IVDU is particularly high in Italian- and Spanish-born patients  $>60$  years both in the SCCS (Graph 2, green) and the FOPH.
- Patient characteristics (age, gender, HBV-/HIV coinfections and HCV genotype) in non-IVDA Italian-borns  $>60$ y are typical for healthcare-associated infections which occurred mostly in 1950-70. These patient characteristics are clearly different in Italian-born IVDU (Table 1).
- In non-IVDA Italian- and Spanish-born patients cirrhosis rate is high and increases with age; however, most patients are still in Child-Pugh class A (Table 2).

## CONCLUSIONS

- In foreign-born HCV patients, non-IVDA transmission is frequent. These patients would be missed by focusing screening on IVDA.
- Testing patients from countries with  $\geq 2\%$  prevalence would include only Italian-borns but potentially miss other groups where healthcare-associated infections are also frequent (e.g. Spain).
- Screening for healthcare-associated infections could be limited to patients aged  $> 60$  years.
- Further cost-effectiveness analyses are needed. Potential screening of Italian- and Spanish-born patients should consider:
  - old age of patients (mean: 72 years)
  - high rate of cirrhosis which can still be treated.
- Although the analysis is specific for Switzerland, HCV patient characteristics in other countries could help to target screening.

Figure 1: Patients in the SCCS by region of birth, history of IVDA and age

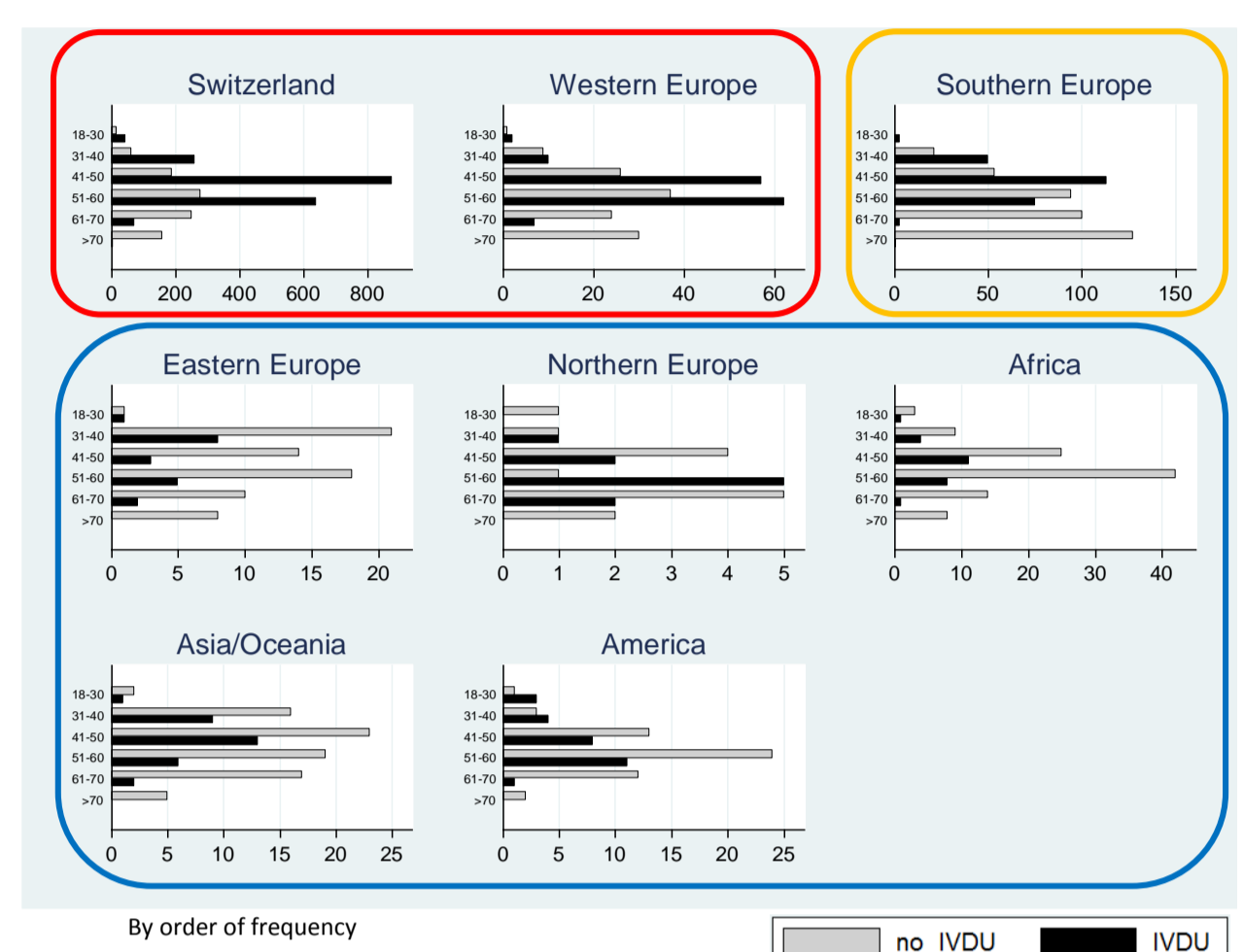


Figure 2: Patients in the SCCS by country of birth ( $\geq 1\%$ ), history of IVDA and age

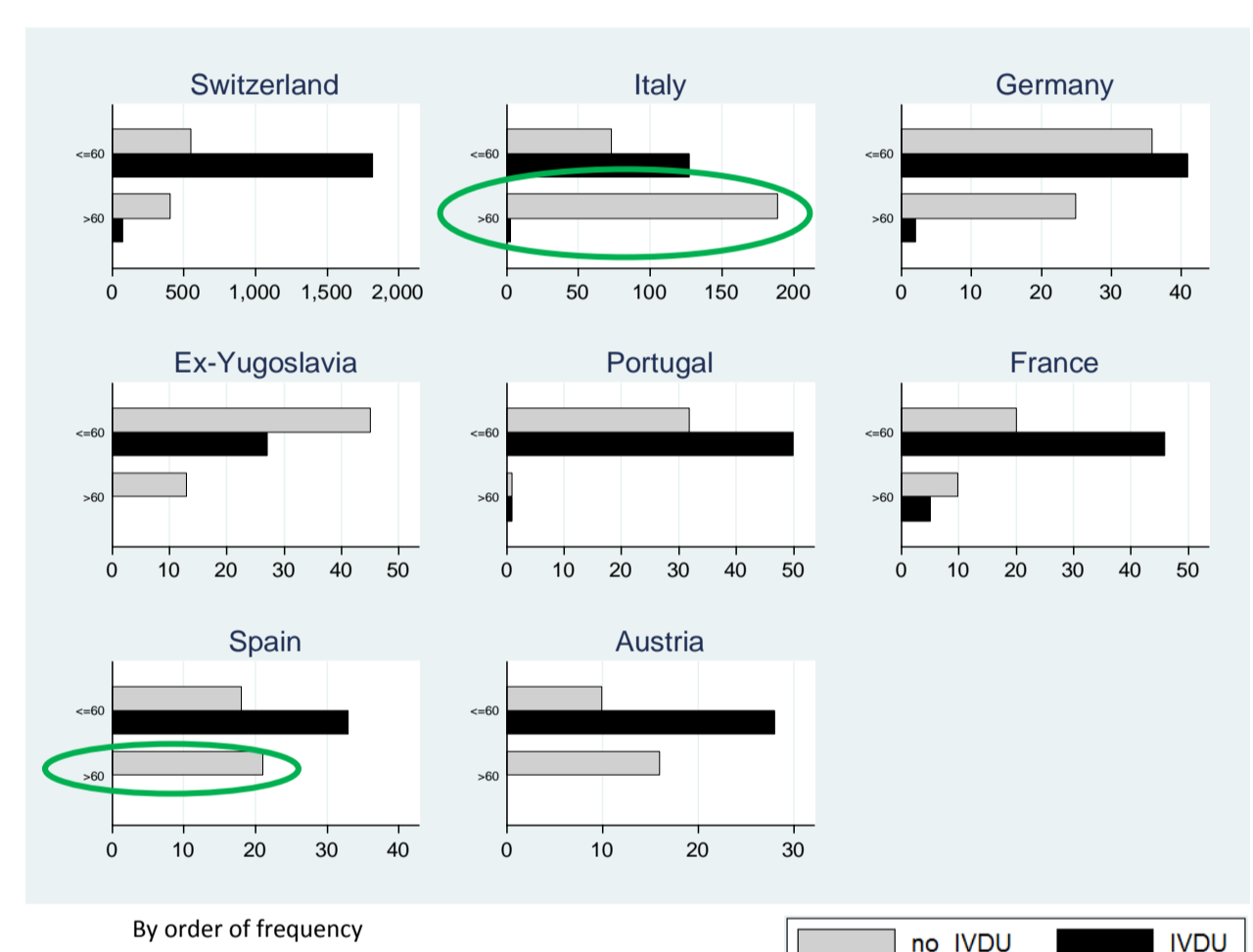


Table 1: Characteristics of Italian-born patients infected by IVDU versus healthcare-associated, SCCS data

	History of IVDA	No history of IVDA with age $>60$ y	p-value	
Percentage males	82%	58%	$< 0.001$	
HIV positive	12%	1%	$< 0.001$	
Anti-HBc positive	57%	34%	$< 0.001$	
Genotype	1	42%	64%	$< 0.001$
	2	3%	30%	$< 0.001$
	3	44%	2%	$< 0.001$
	4	11%	4%	0.019

Table 2: Cirrhosis in Italian-/Spanish-born patients  $>60$ y without history of IVDA, SCCS data

Country of birth	Age in 2014	Number	At registration (number / %)	During follow-up* (number / %)	Child-Pugh class	Deaths / dropouts
Italian-born & Spanish-born	61-70	90	24 (27)	13 (14)	A = 95%	6 / 23
	71-80	118	39 (33)	16 (14)	A = 89%	17 / 26
	above 81	7	3 (43)	1 (14)	A = 100%	2 / 0

\* average time in cohort = 5.2 y for elderly Italian, 6.3 y for elderly Spanish