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The hepatitis C continuum of care among HIV infected individuals in EuroSIDA

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on behalf of the EuroSIDA study group

Presenter Disclosure Information

Sarah Amele

disclosed no conflict of interest.

Background

- Globally 2.3 million HIV/HCV co-infected, majority are injecting drug users (IDU) [1]
- WHO goal of eliminating viral hepatitis as a public health threat by 2030[1] - HCV continuum of care (CoC) is an essential framework to monitor and evaluate progress in achieving these targets
- Also useful to identify leaks/breaks in the continuum that need to be addressed to ensure individuals transition through all stages and achieve sustained virologic response (SVR)
- More work is required to develop a standardised continuum for HCV infected people living with HIV (PLWH) to allow cross country or population comparisons

[1]World Health Organization. Global hepatitis report, 2017. 2017. 62 p.

Aims

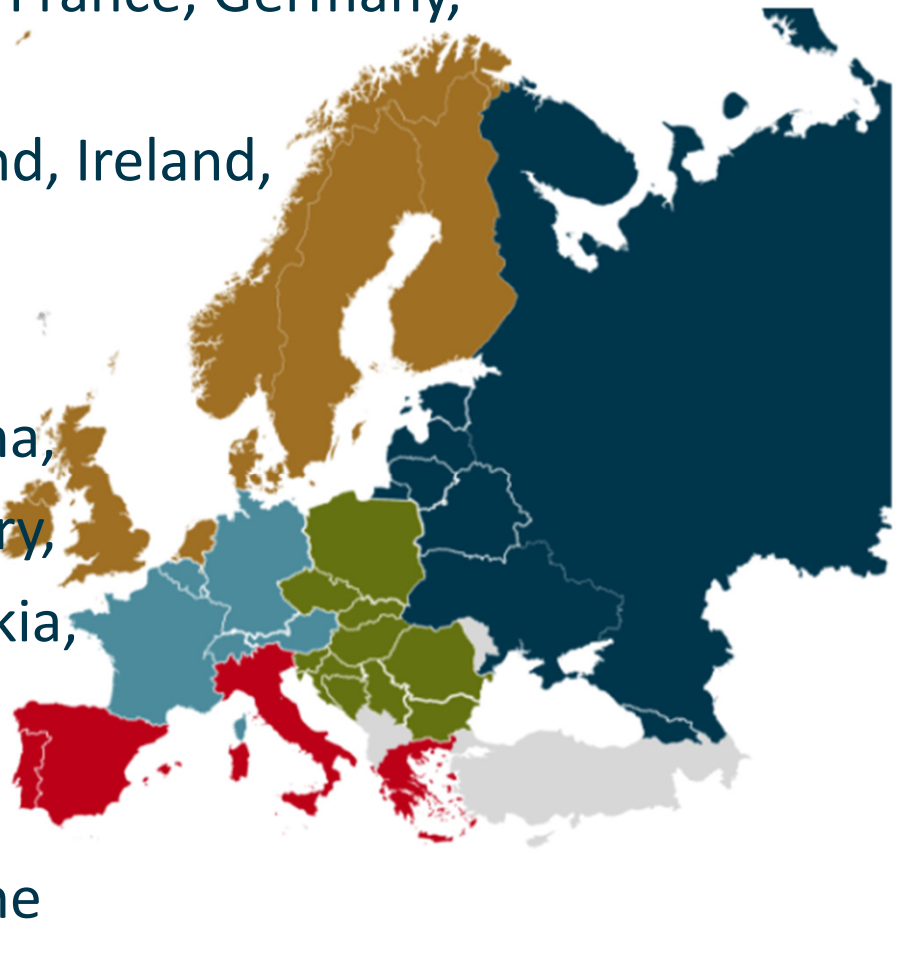
- To develop and evaluate a HCV continuum of care in HIV co-infected individuals across Europe at 1/1/2015
- Look at regional differences in the continuum
- Examine the proportion of individuals genotyped and with a fibrosis marker
- Describe factors associated with being HCV-RNA tested once already anti-HCV positive

EuroSIDA study

- Large prospective observational cohort study with over 22,000 HIV-positive individuals
- Inclusion criteria
  - HIV positive
  - Under follow-up at 1/1/2015
  - Anti-HCV positive before 1/1/2015
  - >16 years of age

Regions

- **South:** Greece, Israel, Italy, Portugal, Spain, Argentina
- **Central West:** Austria, Belgium, France, Germany, Luxembourg, Switzerland
- **North:** Denmark, Finland, Iceland, Ireland, Netherlands, Norway, Sweden, United Kingdom
- **Central East:** Bosnia-Herzegovina, Croatia, Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia, Slovenia
- **East:** Belarus, Estonia, Georgia, Latvia, Lithuania, Russia, Ukraine

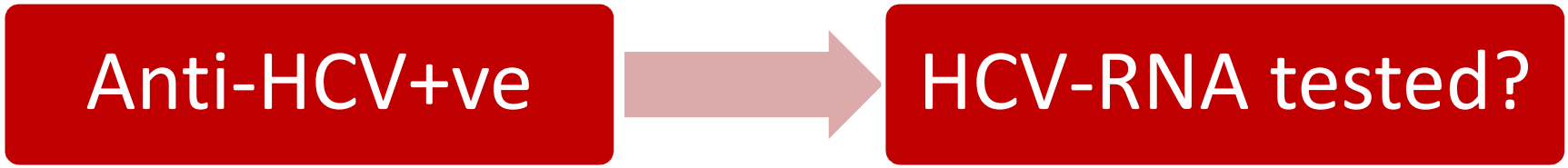


Methods - Definitions

Stage	Definition
1: anti-HCV +ve	Anti-HCV positive, HCV-RNA positive, HCV genotyped or received HCV treatment before 1/1/2015
2: Ever HCV-RNA tested	Ever HCV-RNA tested, HCV genotyped or received HCV treatment before 1/1/2015
3: Currently HCV-RNA +ve	Most recent HCV-RNA test before 1/1/2015 was positive, HCV genotyped but not treated before 1/1/2015, started treatment for the first time after 1/1/2015 or first HCVRNA test result after 1/1/2015 is positive and never treated.
4: Ever HCV-RNA +ve	Ever had a positive HCV-RNA test, received HCV treatment or HCV genotyped before 1/1/2015
5: Ever received treatment	Started HCV treatment on or before 1/1/2015
6: Treatment completed	Completed HCV treatment on or before 1/1/2015
7: FU HCV-RNA available	HCV-RNA test after completing treatment (HCV-RNA test data included for duration of FU to allow for assessment of SVR)
8: SVR	HCV-RNA negative test at least 12 or 24 weeks post treatment (for IFN-free and IFN-based therapy, respectively)

Methods - Statistics

- Tested for regional differences within each stage of continuum
- Identify predictors of being HCV-RNA tested:



Logistic regression

Model adjusted for: age, sex, ethnicity, region in Europe, CD4 count, HIV-RNA, previous use of cART, mode of HIV transmission, mode of HCV transmission, stage of liver fibrosis, hepatitis B co-infected and prior AIDS diagnosis

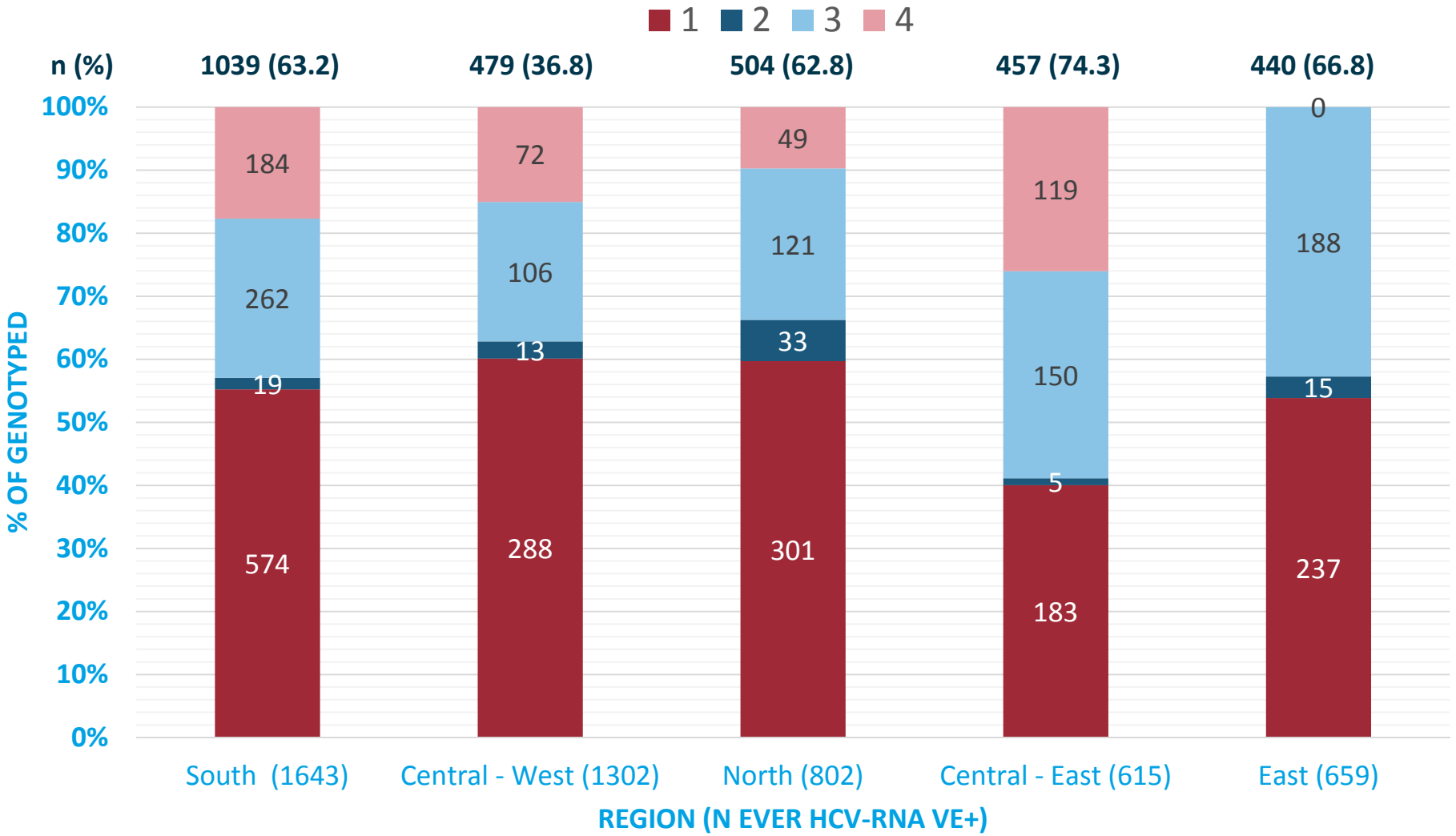
Characteristics at 1/1/2015

Region n (%)		Overall 6985 (100.0)	South 1910 (27.3)	Central - West 1614 (23.1)	North 966 (13.8)	Central - East 925 (13.2)	East 1570 (22.5)
Variables				%			
Gender	Male	71.6	72.5	75.1	78.4	72.0	62.7
Ethnicity	White	88.3	94.3	68.2	82.3	98.6	99.4
Fibrosis	<F3	74.7	73.9	80.9	69.5	69.4	75.7
	≥F3*	12.9	15.4	11.6	12.8	9.8	13.1
HIV risk group	MSM	21.0	16.5	32.2	42.0	21.2	2.0
	IDU	54.2	60.1	40.0	37.9	59.1	68.9
cART	Yes	88.8	95.3	80.4	95.9	95.0	81.7
				Median			
Age		47	50	51	51	41	37
CD4 count (cells/mm^3)		278	297	332	234	244	267

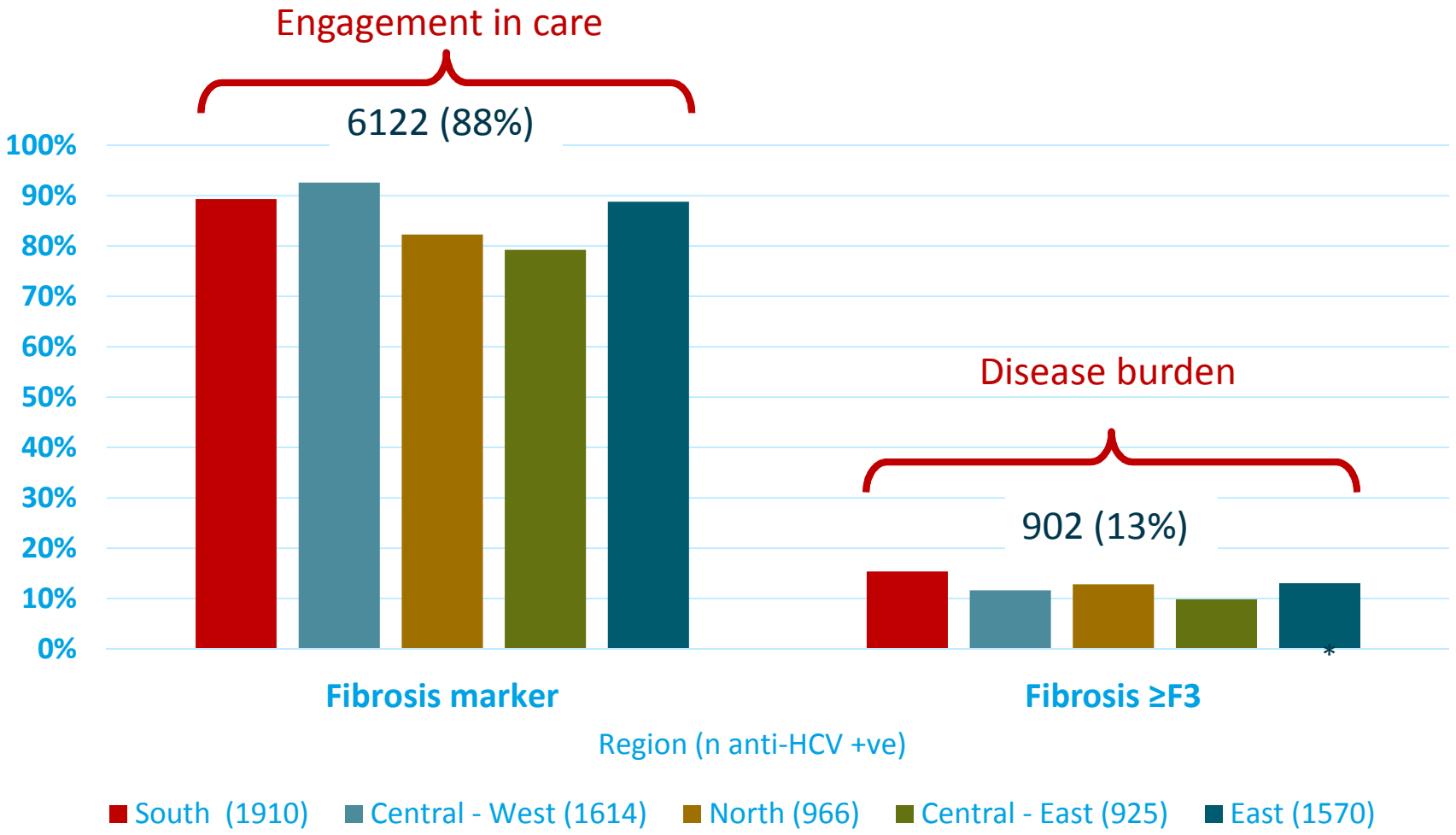
**Either a biopsy (≥METAVIR stage F3), APRI (score >1.5), hyaluronic acid (>160ng/mL) or FibroScan (>9.5kPa) test during follow-up*

Evidence of difference between regions for all variables (p<0.001)

HCV genotype



Fibrosis



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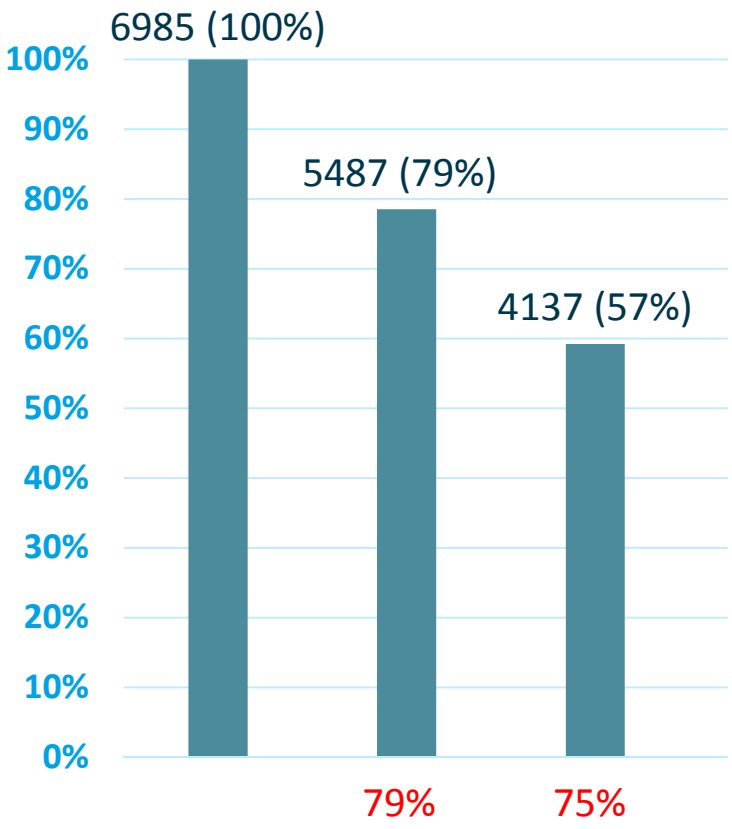
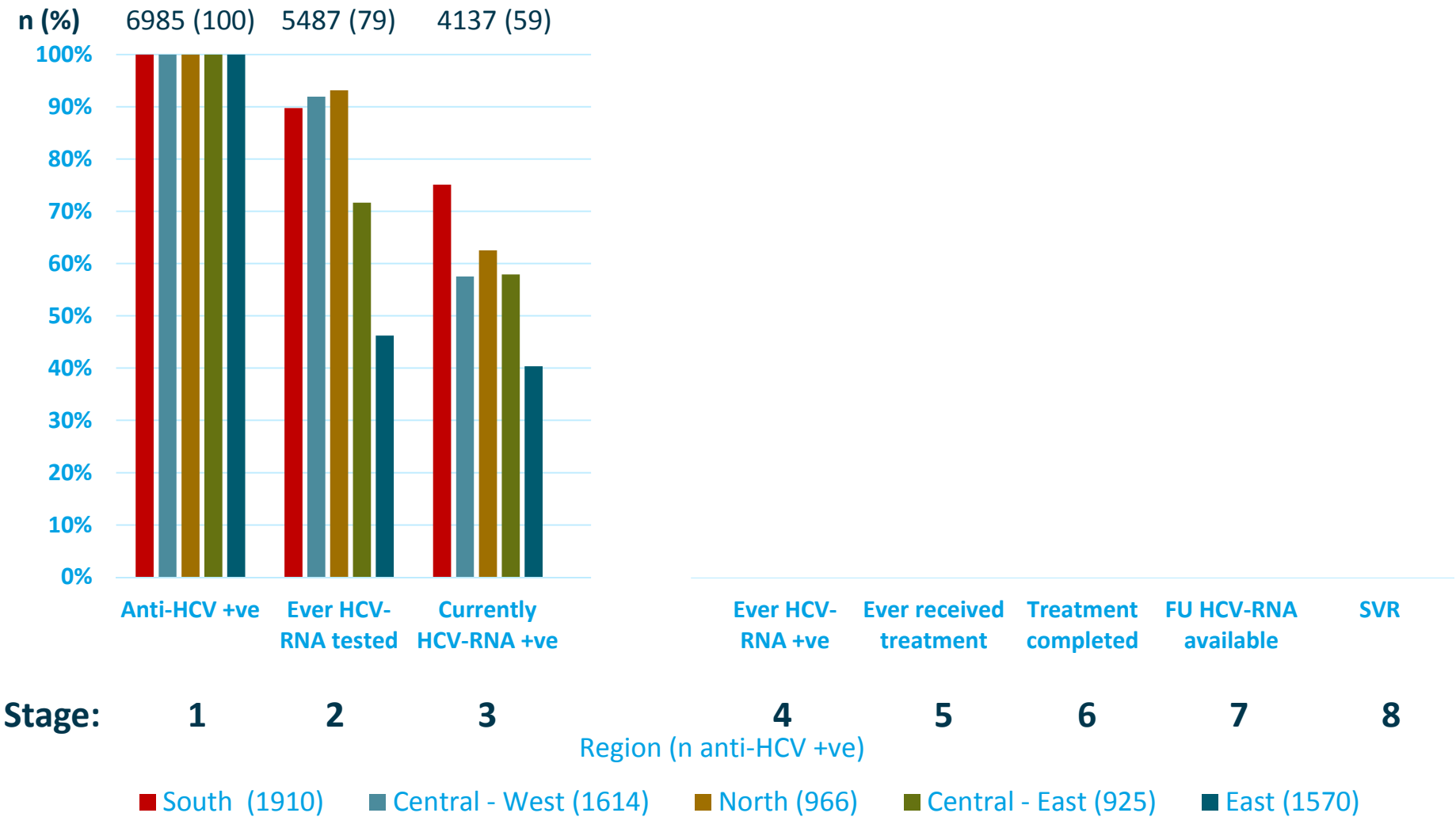
Overall CoC at 1/1/2015

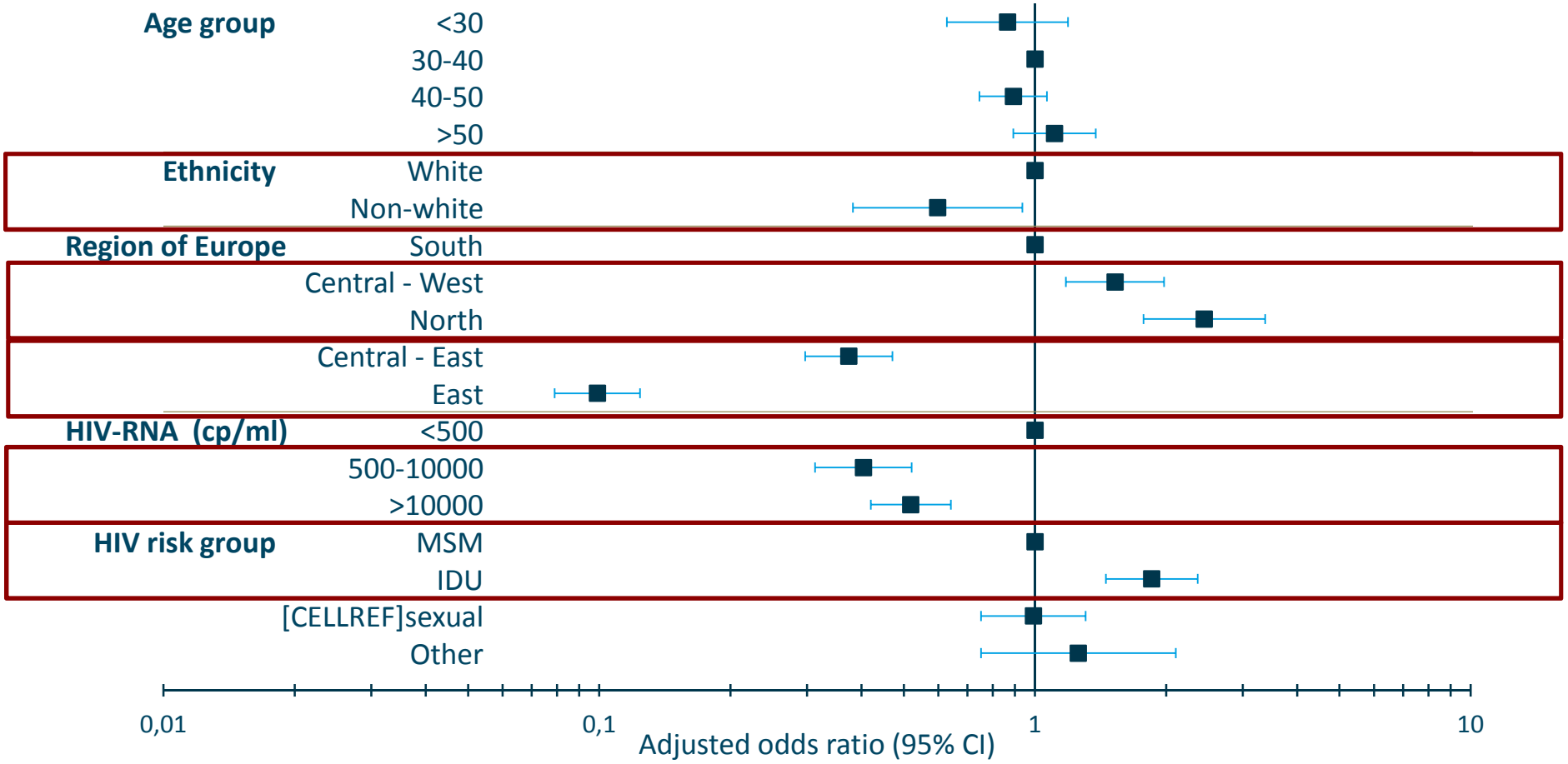


CoC by region at 1/1/2015



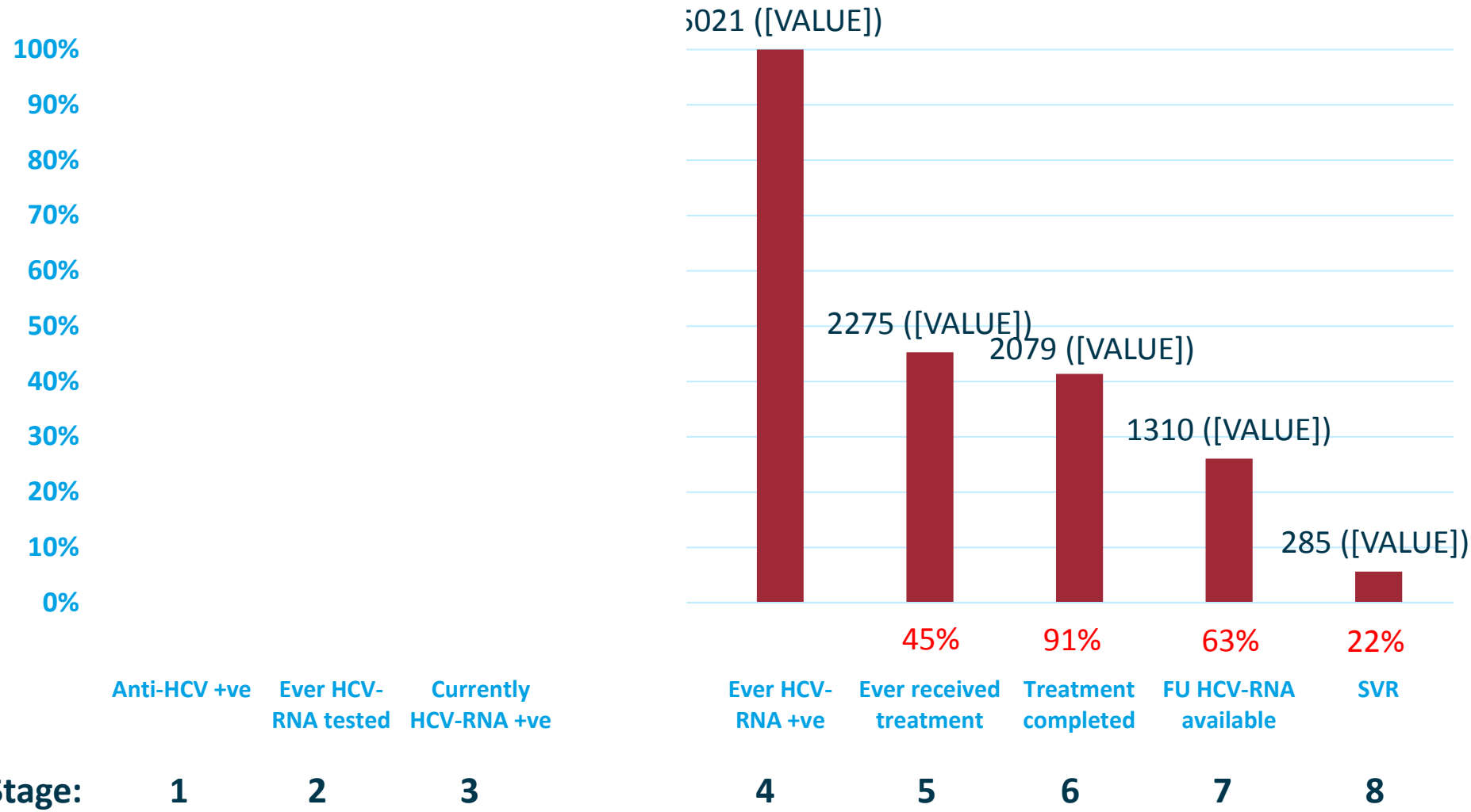
Evidence of difference between regions for all stage (p<0.001)

Odds of being HCV-RNA tested

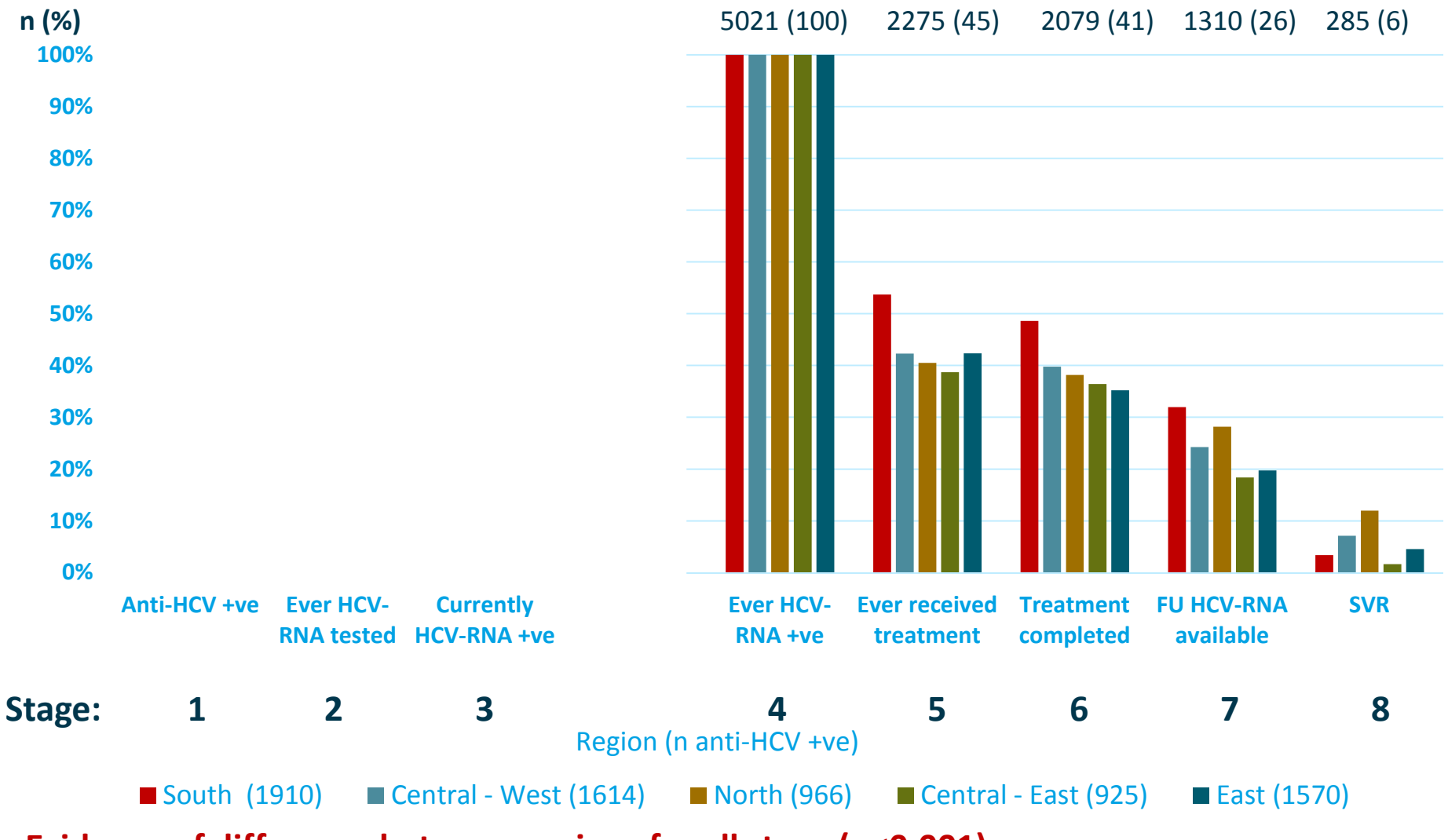


Model also included: gender, CD4 count, previous use of cART, mode of HCV transmission, stage of liver fibrosis, hepatitis B co-infection and prior AIDS diagnosis

Overall CoC at 1/1/2015



CoC by region at 1/1/2015



Evidence of difference between regions for all stage (p<0.001)

Low SVR?

Region (n FU HCV-RNA available):	South (525)	Central-West (316)	North (226)	Central – East (113)	East (130)
Genotype 1 or 4 Genotyped	74%	71%	73%	60%	44%
IFN-free regimen FU HCV-RNA available	4%	7%	12%	0%	0%

- High proportion of individuals with genotype 1 or 4 that are hard to treat with IFN based regimens.
- Very low number of individuals received IFN-free treatments

Limitations

- Cohort individuals not necessarily representative of all HCV infected individuals (vulnerable groups, incarcerated population etc. not included in cohort)
- Not everyone has a HCV-RNA measurement at 12/24 weeks after completing treatment
- CoC was examined at a fixed point in time and therefore may be different if repeated now
- Differences in treatment guidelines, access to care and patient management approaches within countries and regions
- Did not look at the whole continuum, undiagnosed population not estimated

Summary

- Significant proportion of individuals lost at all stages of our proposed HCV continuum, with large variations between regions of Europe
- Region, ethnicity, and HIV viral load found to affect the odds of being HCV-RNA tested after anti-HCV +ve test
- Large gap between testing and starting treatment likely due to multifactorial reasons, including access to treatment, lack of DAAs and patient characteristics

Conclusions

- The proportion of individual achieving SVR was low, in part due to our definitions but improvements in HCV treatment cannot be realised unless barriers to care are addressed
- Our proposed definitions would allow repeated analyses over time to monitor changes in the break points
- Further work on defining the HCV CoC is urgently needed

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