

DIFFERENCES IN THE HEPATITIS C VIRUS CASCADE OF CARE AND TIME TO INITIATION OF HCV THERAPY AMONG VULNERABLE SUBPOPULATIONS USING A MOBILE UNIT AS THE POINT-OF-CARE

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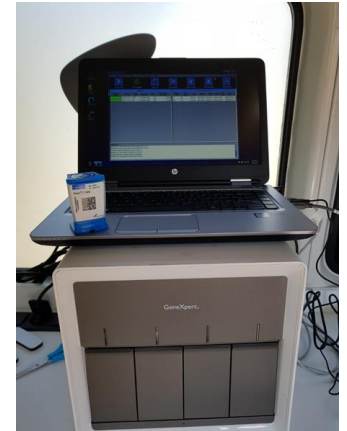
BACKGROUND

- PWID and others subpopulations face barriers to access healthcare when using traditional models of care due to drug use criminalization, stigma and discrimination, and the stress surrounding their precarious living circumstances.
- The amount of time elapsed between the HCV-RNA test result and treatment initiation (time to HCV treatment) is a useful parameter to measure success in treating HCV in vulnerable groups, in spite of it not being considered part of the HCV Cascade of care consensus



Methods I:

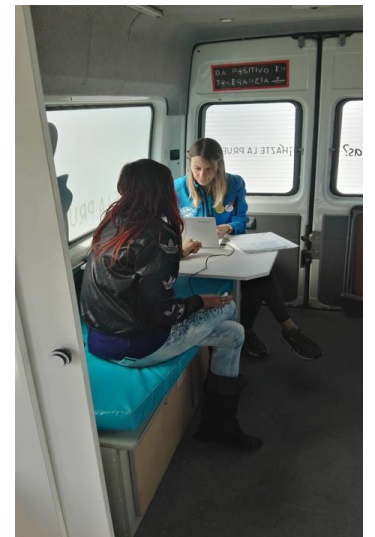
- We carried out a prospective study of vulnerable persons in Madrid, Spain from 1 February 2019, to 28 February 2021. A mobile unit was used to screen active hepatitis C using a linkage to care and two-step PoC-based strategy.
- Participants viremic were stratified into four subgroups: PWID, the homeless, people with mental health disorder (MHD) and people with alcohol use disorder (AUD).
- The screening phase was carried out at the mobile unit, consisting of an adapted van and a car, serving the hot spots following a predefined schedule. A nurse and an educator performed HCV and HIV rapid tests for antibodies using capillary whole blood sampling. The Xpert-HCV-VL-FS assay was offered to all individuals with a positive anti-HCV Ab test at the PoC.
- In the linkage to care phase, all participants with a positive HCV-RNA test were offered a referral to hospital the same day.



Assay Information			Assay Version	Assay Type
Xpert HCV VL Fingerstick			1	In Vitro Diagnostic
Test Result: HCV DETECTED 4.46E06 IU/mL (log 6.65)				
Analyte Result				
Analyte Name	Ct	EndPt	Analyte Result	Probe Check Result
HCV	21.5	624	POS	PASS
IQS-H	23.5	279	PASS	PASS
IQS-L	34.4	506	PASS	PASS
User: <None>				
Status:	Done	Start Time:	26/05/19 11:23:29	
Expiration Date*:	07/07/19	End Time:	26/05/19 12:21:10	
S/W Version:	4.8	Instrument S/N:	830591	
Cartridge S/N*:	283853478	Module S/N:	746483	
Reagent Lot ID*:	12003	Module Name:	A1	
Notes:				
Error Status:	OK			

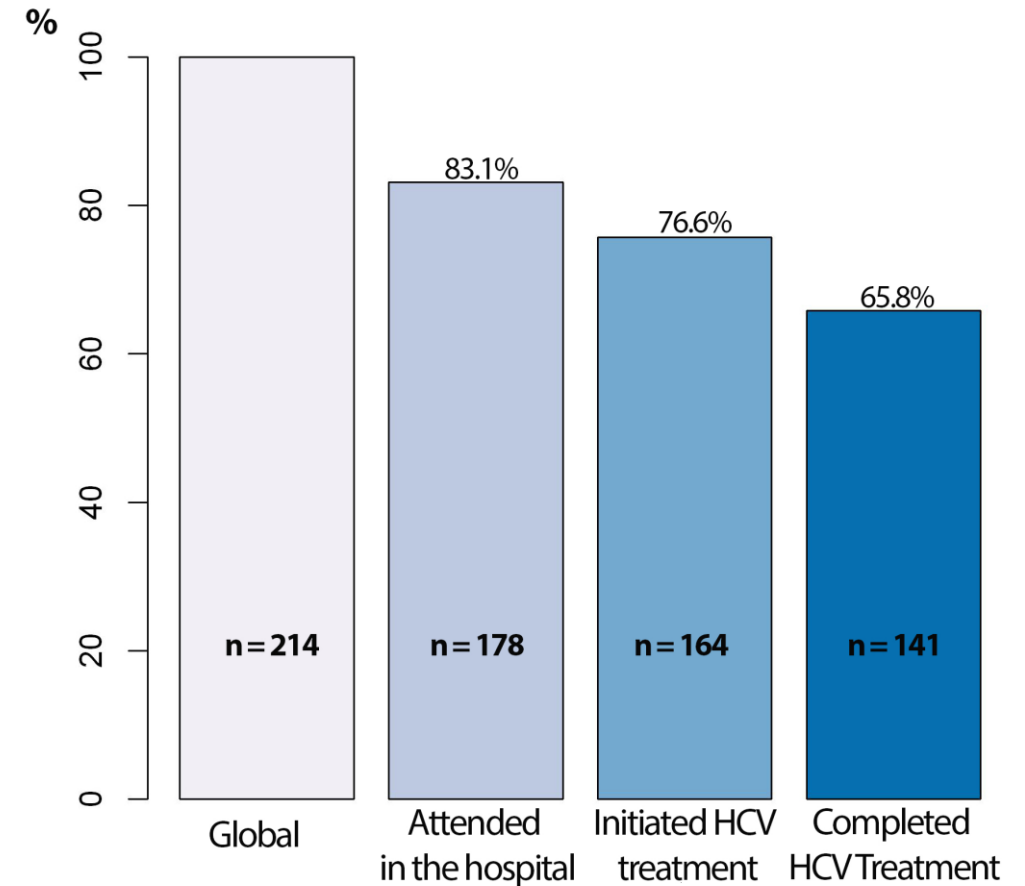
Methods II

- Four events were taken into account for the HCV CoC:
 - I) being seen in hospital.
 - II) starting HCV therapy.
 - III) completing HCV therapy.
 - IV) achieving SVR.
- Time to HCV treatment was also considered as a parameter to evaluate as good practice to incorporate into the CoC.
- Time to HCV treatment (time elapsed between HCV-RNA measurement by Xpert-HCV-VL-FS at the mobile unit and treatment initiation) was estimated based on available data, measured in days and stratified per subgroup.



Results:

- A cohort of 214 individuals active HCV diagnosed were stratified as 73 PWID, 141 homeless, 57 with MHD and 91 participants with AUD.
- The overall HCV cascade of care was:
 - * 178 (83.1%) were attended at hospital.
 - * 164 (76.6%) initiated DAA.
 - * 141 (65.8%) treatment completed.
 - * 99/104 (95.2%) were cured (SVR)



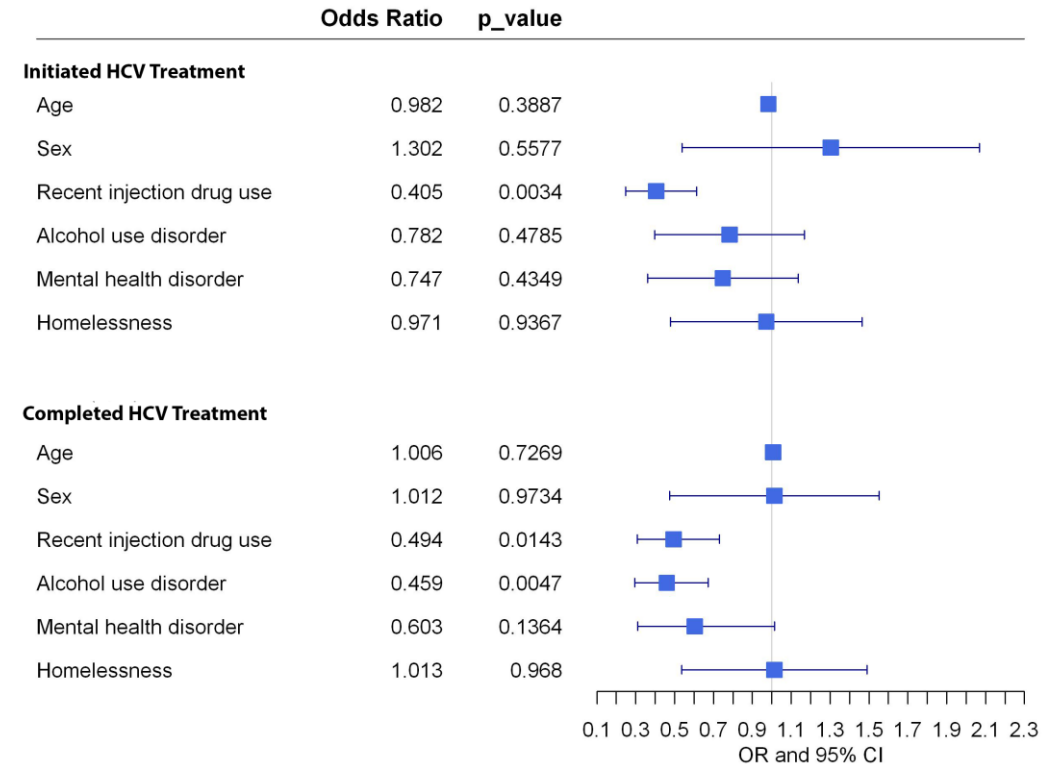
Results II

- PWID were significantly more likely to be undocumented immigrants and to have no economic income (p 0.01).
- HCV reinfections were found to be more frequent in PWID compared with those without a history of injecting drug use, but this result was not statistically significant (p=0.06).
- Participants with AUD were significantly more likely to have cirrhosis at the moment to treatment initiation (p=0.006).
- The SVR by subgroups was: **PWID (91.9%)**; people with **AUD (97.5%)**; people with **MHD: (96.5%)**; **homeless people: (94.4%)**. The study had no statistical power to evaluate differences among the subgroups due to only having five cases of no-SVR.

	People who inject drugs		People with alcohol use disorder		Patients with mental health disorder		Homeless patients	
	NO	YES	NO	YES	NO	YES	NO	YES
N	141	73	123	91	157	57	73	141
Age. Median (IQR)	50(12)	44(10)	47(11.5)	51(11)	48(13)	48(11)	50(10)	47(13)
Men	108/141	62/73	96/123	74/91	131/157	39/57	61/73	109/141
Non-spaniard	26/141	25/73	38/123	13/91	44/157	50/57	9/73	42/141
Undocumented Immigrants	2/141	9/73	8/123	3/91	11/157	0/57	1/73	10/141
Non-Income	71/141	14/73	40/123	45/91	56/157	29/57	46/73	39/141
OST	115/141	48/73	85/123	78/91	113/157	50/57	64/73	99/141
Chronic HBV infection	3/122	3/62	2/106	4/78	5/139	1/45	2/68	4/116
HCV reinfection	11/129	17/70	20/115	8/84	20/148	8/51	6/66	22/133
HIV infection	111/141	54/73	99/123	66/91	125/147	40/57	58/73	107/141
Cirrhosis	26/141	5/73	7/123	24/91	20/157	11/57	16/73	15/141
SVR (cure)	65/67	34/37	60/64	39/40	71/75	28/29	32/33	67/71

Results III

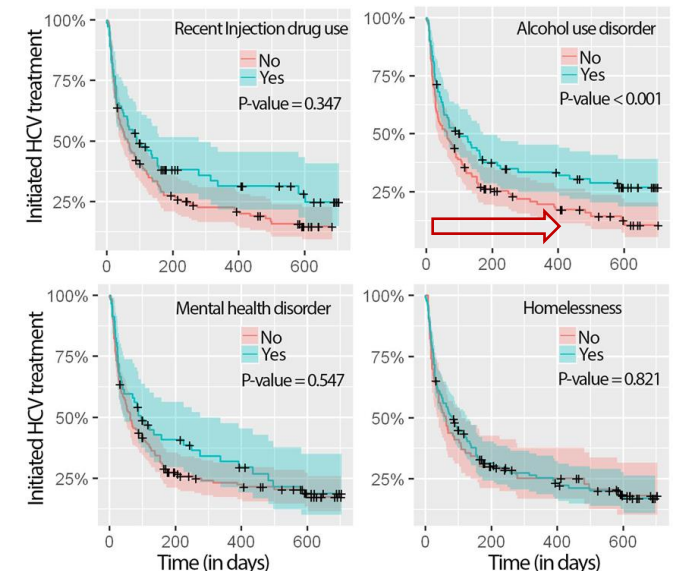
- People with recent injecting drug use were significantly less likely to initiate HCV treatment (aOR 0.40; 0,24- 0,61; p0.003) in the logistic regression analysis.
- Also, people with AUD (aOR 0.45; 0,29- 0,67; p0.004) and people with recent inject drug use (aOR 0.49; 0,30-0,73, p 0.001) were significantly less likely to completing HCV treatment in the logistic regression analysis.



Results IV

- The overall median time to HCV treatment initiation among the four subpopulations who received treatment was 35.5 days [IQR 17.7-108.2].
- The longest median time to HCV treatment of 40.5 days [IQR 17.0-99.2] was observed in patients with AUD and the shortest median time to HCV treatment was 30 days [IQR 15.0-90.0] in PWID.
- In the multivariable analysis of Cox proportional hazards and Aalen's additive model, people with AUD remained associated with longest time to HCV treatment initiation (HR 0.63; CI 97.5%, 0.45-0.88; $p = 0.001$)

	HR	2.5%	97.5%	P_value
COX Hazard Model				
Age	1.001	0.982	1.020	0.9412
Sex	1.161	0.788	1.709	0.4513
Recent Injection drug use	0.706	0.488	1.022	0.0649
Alcohol use disorder	0.637	0.457	0.888	0.0017
Mental health disorder	0.811	0.570	1.156	0.2468
Homelessness	0.943	0.672	1.322	0.7327
Aalen's Additive Model				
	Estimate			
Age	0.0001	-0.0001	0.0001	0.9220
Sex	0.0012	-0.0020	0.0043	0.4749
Recent Injection drug use	-0.0026	-0.0052	0.0005	0.0552
Alcohol use disorder	-0.0031	-0.0055	-0.0005	0.0158
Mental health disorder	-0.0013	-0.0037	0.0012	0.3258
Homelessness	0.0008	-0.0035	0.0018	0.5505



Conclusions:

- Disparities in the cascade of HCV care exist among vulnerable sub-populations.
- Overall, SVR was very high and more than 90% in all sub-groups. Models of care need to better engage PWID on treatment, while specific care and strategies to avoid delays in the treatment initiation for people with AUD are urgent.
- Also, we highlighted the importance of patient centered care so as to allow for treatment completion, especially in people who inject drugs and those with AUD.

