# High prevalence and incidence of HIV and HCV among new injecting drug users with a large proportion of migrants—Is prevention failing?

# Cinta Folch on behalf of REDAN Study Group

Viral Hepatitis Prevention Board meeting Ljubljana March 10-11, 2016





entre d'Estudis Epidemiològics bre les Infeccions de Transmissi xual i Sida de Catalunya

# Background

- People who inject drugs (PWID) are at high risk of acquiring HIV and hepatitis C virus.
- Most HCV infections occur **within the first 6 years** of injection.
- Young drug injectors and others newly initiated into injecting are at considerable risk of contracting the virus
- HCV prevalence can exceed 50% after 1 year of injecting



Hepatitis C virus (HCV) prevalence in relation to time at risk (number of years since onset of drug injection), with fitted regression lines (72 studies and 293 categories of time at risk), HCV Synthesis Project, 1989–2006.



Holly Hagan et al. Am. J. Epidemiol. 2008;168:1099-1109

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# Background

- Lack of early warning signs means hepatitis C infections are often not identified until it is too late
- Many current and former drug injectors are therefore unaware that they are infected with HCV.
- Better screening and monitoring systems are needed to ensure people infected with HCV are identified early and can receive treatment, where it is appropriate





#### Hepatitis C Virus Infection Epidemiology among People Who Inject Drugs in Europe: A Systematic Review of Data for Scaling Up Treatment and Prevention

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Figure 6. Proportion (%) of HCV positive PWID (antibody or RNA) undiagnosed.



## Background

 The increasing availability of harm reduction programs in Catalonia has contributed to reductions in the prevalence of HIV: 51% (1993) to 33,2%
(2010)

 However, the prevalence of HCV remains high and exceeds 75%-80%





## Changes in the prevalence of syringe sharing and number of sterile syringes distributed in Catalonia. IDU 1993-2012

Agència de Salut Pública de Catalunya

EIS Centre d'Estudis Epidemiològics sobre les Infeccions de Transmissió Sexual i Sida de Catalunya

# **Objectives**

 To assess potential differences in the prevalence of HIV and HCV infection as well as their associated risk factors between new and long-term injectors in Catalonia.

• To estimate incidence of HIV and HCV infection among the group of new injectors.



## Methodology

Integrated Bio-Behavioral Surveys among Key Populations (Catalonia, 1993-2015)



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# Methodology

- Cross-sectional survey
- Period: October 2010 to May 2011
- Recruitment in Harm Reduction Centres
- Inclusion criteria:
  - Injection in the last 6 months
  - Older than 18
  - Informed consent





# Methodology

- Anonymous questionnaires
- Oral fluid samples (HIV/HCV prevalence)



• "New" injectors were defined as those who had been injecting for 5 years or less.





## **Statistical analysis**

- Poisson regression models were applied to assess factors associated with HIV/HCV infection.
- Incidence estimations:
  - Assumptions: (1) participants were HIV/HCV negative when they began injecting; (2) they became infected at the midpoint between beginning to inject and the time of oral fluid sample collection.
  - The estimated HIV/HCV incidence rate was the number of HIV and HCV seropositive new injectors divided by the sum of the time at risk for the HIV and HCV seropositive and the time at risk for the HIV seronegative\* new injectors.





# Results: Sample distribution by years of injection (n=761)







## **Results:**

## **Sociodemographic characteristics**

	New n=161 (%)	Long-term n=593 (%)	р
Median age (SD)	31.6 (7.5)	37.8 (7.1)	< 0.0001
Immigrants	59.0	33.4	<0.0001
Female	21.1	16.2	NS
Education level: primary or less	16.8	25.2	0.026
Homeless <sup>1</sup>	22.4	16.9	NS
Living alone <sup>1</sup>	31.1	29.8	NS
Receiving a pension*	15.5	34.9	<0.0001
Main source of income: illegal	55.7	45.9	0.029
Ever in prison	49.7	71.5	<0.0001
Currently in treatment	40.4	57.8	<0.0001

\*retirement pension/incapacity benefit/social fund; (1) Last 6 months



# Results: Injecting risk behaviors





## **Results:**

## HIV and HCV prevalence by duration of injection



#### Years of injection

CI: Confidence Interval; \*p<0.0001

On the overall: HIV prevalence: 33.2% (95%Cl, 29.8–36.5) HCV prevalence: 72.0% (95%Cl, 68.8–75.2)



Generalitat de Catalunya Agència de Salut Pública de Catalunya

# **Results: Estimated HIV and HCV Incidence**

Estimate of HIV incidence among "new injectors"

## 8.71/100 person years (PY) at risk

# Estimate of HCV Incidence among "new injectors"

## 25.06/100 person years (PY) at risk





# **Results:** Unknown HIV/HCV infections by origin

Figure 2. Unknown HIV and HCV infections among new and long-term injectors by country of origin



CI: Confidence Interval



# **Results:**

## **Risk factors for HIV/HCV infections**

	PR	95% CI	р
NEW INJECTORS			
HIV infection			
Homeless <sup>1</sup>	3.10	1.80-5.33	< 0.001
Unprotected sex (steady partner) <sup>1</sup>	0.42	0.21-0.82	0.012
Sexually transmitted infections (ever)	1.79	1.10-2.90	0.018
HCV infection			
Front-backloading <sup>1</sup>	1.33	1.01-1.76	0.043
Daily injection <sup>1</sup>	1.35	1.20-1.79	0.036
LONG-TERM INJECTORS			
HIV infection			
Injection of cocaine <sup>1</sup>	1.38	1.09-1.76	0.009
Having shared syringes (ever)	1.85	1.43-2.40	< 0.001
Frontbackloading <sup>1</sup>	1.30	1.06-1.60	0.012
In prison (ever)	2.03	1.45-2.85	< 0.001
Unprotected sex (steady partner) <sup>1</sup>	0.63	0.49-0.82	< 0.001
Unprotected sex (casual partner) <sup>1</sup>	0.62	0.40-0.94	0.025
HCV infection			
Homeless <sup>1</sup>	0.84	0.72-0.97	< 0.001

(1) Last 6 months; \*After adjusting for age, country of origin, gender and years of injection *PR*, prevalence ratio; *CI*: Confidence Interval



# Limitations

- Findings may not be generalizable to PWID in other settings.
- Information bias: underestimation of self-reported behaviours
- Estimated HIV/HCV incidence: the actual date of infection was unknown.
- The study collected HCV antibodies, so current infection cannot be determined
- Cross-sectional study: limits to infer causality.





## Conclusions

- A large proportion of PWID in Catalonia are new injectors.
- A subgroup with a high level of both sexual and parenteral exposure to HIV/HCV infections.
- The estimated HCV incidence among this group confirms that most new infections occurred very soon after initiation of injection.



## Conclusions

- Immigrants represent a high proportion of the new IDU population in Catalonia.
- Approximately half of the sample of new injectors who were HIV- and/or HCV-positive did not know they were infected.
- Undiagnosed infections were extremely high among the group of migrant new injectors.





## Recommendations

Early intervention initiatives to reduce the number of at risk individuals and to provide education early in injecting careers would be needed Such interventions should be specifically focused on migrant, adapting prevention messages to their social and cultural background

Identifying and addressing risk factors for homelessness among new injectors should be a priority Improving access to HIV/HCV testing among new injectors, including outreach services to reach those who may be not in touch with traditional healthcare services.



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#### THANK YOU!

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ORIGINAL ARTICLE

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