

## Highlight underserved for screening, prevention and treatment of viral hepatitis B and C in Europe

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### Addiction

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RESEARCH REPORT

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## Innovative community-based educational face-to-face intervention to reduce HIV, hepatitis C virus and other blood-borne infectious risks in difficult-to-reach people who inject drugs: results from the ANRS–AERLI intervention study

Perrine Roux<sup>1,2,3</sup>, Jean-Marie Le Gall<sup>4</sup>, Marie Debrus<sup>5</sup>, Camélia Protopopescu<sup>1,2,3</sup>,  
Khadim Ndiaye<sup>1,2,3</sup>, Baptiste Demoulin<sup>1,2,3</sup>, Caroline Lions<sup>1,2,3</sup>, Aurelie Haas<sup>4</sup>, Marion Mora<sup>1,2,3</sup>,  
Bruno Spire<sup>1,2,3,4</sup>, Marie Suzan-Monti<sup>1,2,3,4</sup> & Maria Patrizia Carrieri<sup>1,2,3</sup>

# Background (1)

- French harm reduction (HR) policies effective on HIV in people who inject drugs (PWID)
  - ~1% of new HIV diagnoses in 2012
  
- However, complications related to injecting practices remain prevalent
  - High prevalence of Hepatitis C Virus (HCV) infections in PWUD (44% -56% )
    - Needles/syringes sharing but also paraphernalia sharing
    - Frequent injection with products with short half-life (cocaine)
  - Other injection-related complications
    - local lesions : venous damages, abscesses, cellulitis and other skin infections
    - cardiovascular and pulmonary complications (injection of pills)



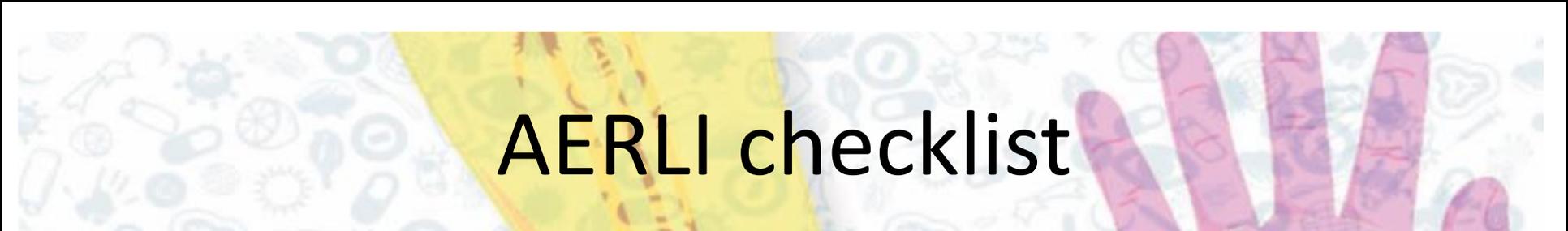
## Background (2)

- Need to experiment, evaluate, and implement alternative and innovative HR strategies
- Existence of a community-based standardized intervention providing tailored training and education about injection

### **AERLI**

- **Standardized checklist when supervising injection + Tailored intervention to reduce harms**





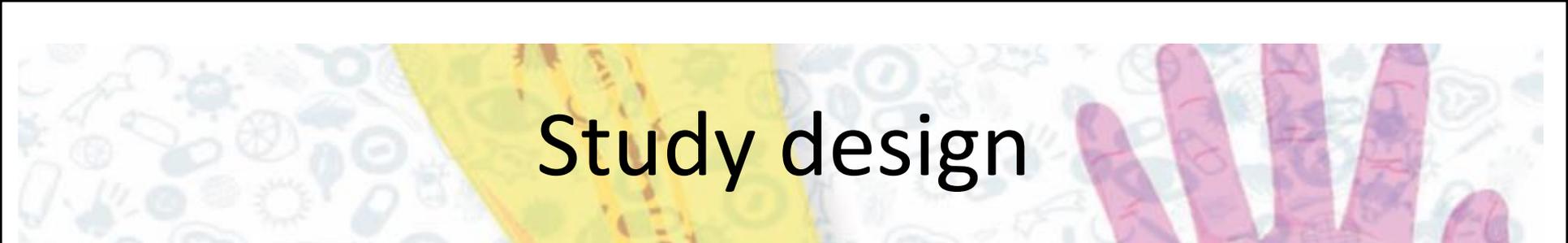
# AERLI checklist

- **Hygiene (Whether/how cleaning site of injection/hands)**
- **Preparation (syringe, spoon, fingers, type of product, acidification, water, heating, mixing, filtering, use of spared equipment)**
- **Preinjection (how cleaning site/searching where to inject, leaking needle...)**
- **Injection (arm, legs etc., alternate site, number of attempts, right orientation, speed etc.)**
- **Injection done or not (why not done-observations)**
- **Post-injection (management of bleeding and of used equipment, clean hands)**

A decorative banner at the top of the slide features a light blue background with various medical icons such as a microscope, pills, and a hand. Overlaid on this are two hands: a yellow one on the left and a pink one on the right, both with fingers spread.

# Objectives of ANRS AERLI study

- To assess the effectiveness of this community based intervention named « AERLI » on:
  - HIV-HCV risk behaviors
  - other damages and infections associated with injection
  - Health behaviors (ex: access to HCV testing)



# Study design

- National multi-site community-based research clustered intervention
- Low-threshold sites offering or not the intervention
  - providing AERLI intervention
    - 8 participant services (N=113)
  - not providing AERLI intervention (unexposed group)
    - 9 participant services (N=127)

# Study design



**AERLI sessions for PWID: supervised injection by trained NGO staff or volunteer followed by tailored education and training to reduce harms from injection**



**Phone interviews with an independent pollster not involved in the educational sessions**

**Intervention group**

At least 1 session over 5 months



**Control group**



↑  
**Inclusion**

↑  
**M6**

↑  
**M12**



# Methods (1)

- Eligibility criteria
  - ≥18 years old; injecting at least once during the previous week; willing to be contacted for a phone interview; able to give informed consent
- Data collection
  - Phone interviews at M0, M6 and M12 collecting :
    - socio-demographic information
    - behavioral data related to HCV risk transmission (BBV-TRAQ)
    - drug use or prison
    - access to care, diagnosis and HIV, HCV and HBV testing
    - motivational factors related to the intervention
  - Data from the intervention sessions were collected by the community-based staff

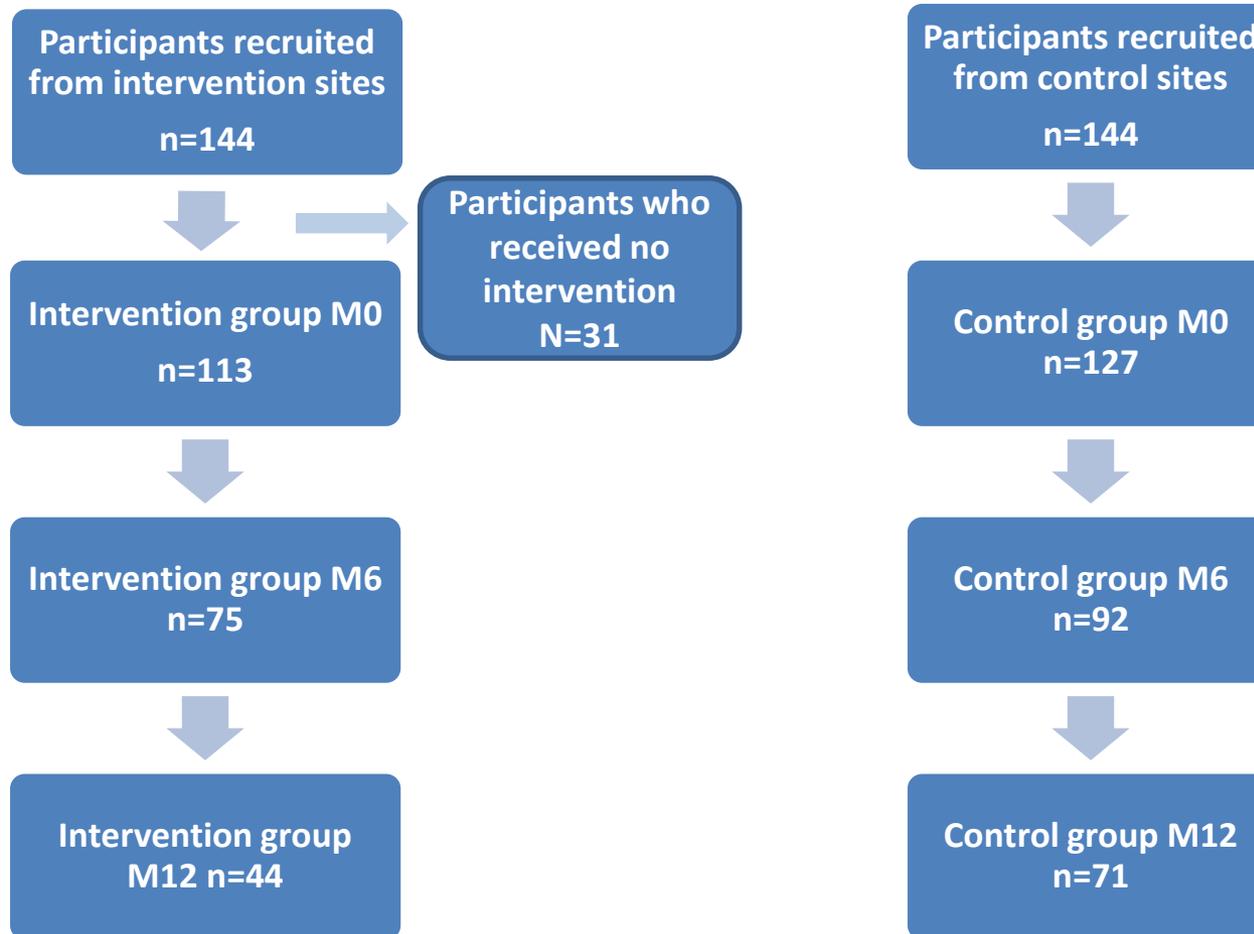


# Methods (2)

- Analyses
  - Outcomes
    - HCV risk practices
    - Local complications at the injection site
  - Use of a 2-step Heckman model to control for the possible bias due to non-randomization of the intervention
  - Intervention group (n=113) and control group (n=127)
    - 1<sup>st</sup> step: probit model to identify baseline factors associated with being exposed to the educational intervention to compute the inverse Mills ratio (IMR)
    - 2<sup>nd</sup> step: logistic mixed model introducing the IMR to identify factors associated with 2 outcomes: at least 1 HCV risk practices, at least 1 problem at the injection site

# Study sample diagram

Figure 1. Flow chart (ANRS-AERLI, n=271)





# Results (1) – Participants' characteristics

**Table 1.** Baseline characteristics (n (%) or median [IQR]) (n=240): ANRS-AERLI study

	Control group n=127	Intervention group n=113	p-value†
<b>Gender</b>			
male	99 (78)	88 (78)	0.99
<b>Age<sup>§</sup></b>	31 [26-37]	30 [25-37]	0.38
<b>High School Certificate</b>	23 (18)	36 (32)	0.01
<b>Living in a couple</b>	29 (23)	32 (29)	0.33
<b>Employment (paid activity)</b>	46 (36)	31 (27)	0.15
<b>Precarious housing</b>	17 (13)	32 (28)	0.01
<b>Age at first drug injection<sup>§</sup></b>	19 [17-23]	19 [17-23]	0.73
<b>Harmful alcohol consumption ‡</b>	69 (54)	63 (56)	0.77
<b>Heroin use*</b>	32 (25)	46 (41)	0.01
<b>Cocaine/crack use*</b>	50 (39)	55 (49)	0.19
<b>Sulfate morphine use*</b>	36 (72)	60 (53)	<0.001
<b>Buprenorphine use**</b>	67 (53)	30 (27)	<0.001
<b>Frequent daily injection</b>	58 (46)	61 (54)	0.20
<b>HCV screening</b>	108 (85)	84 (74)	0.04
<b>HCV risk practices<sup>1</sup></b>	34 (27)	49 (44)	0.01
<b>Problems at the injection site<sup>2</sup></b>	71 (56)	75 (66)	0.10

† Chi-squared test or Wilcoxon test

§ in years

‡ AUDIT score ≥13

\*during the previous 4 weeks

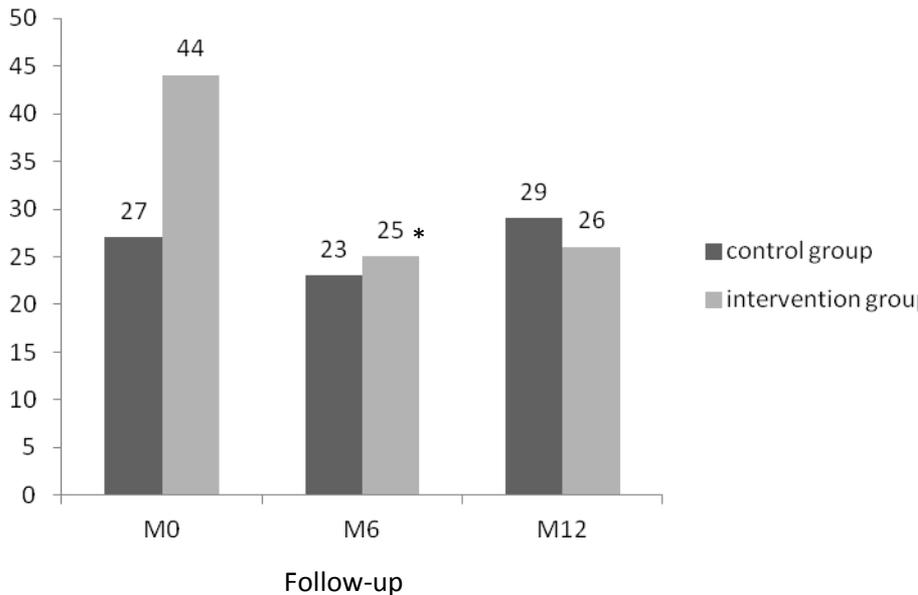
\*\* Beck ≥ 9

<sup>1</sup>more than 1 HCV risk practice during the previous month

<sup>2</sup>more than 1 problem at the injection site; score of self-assessment of venous status < 7 (from 0 to 10)

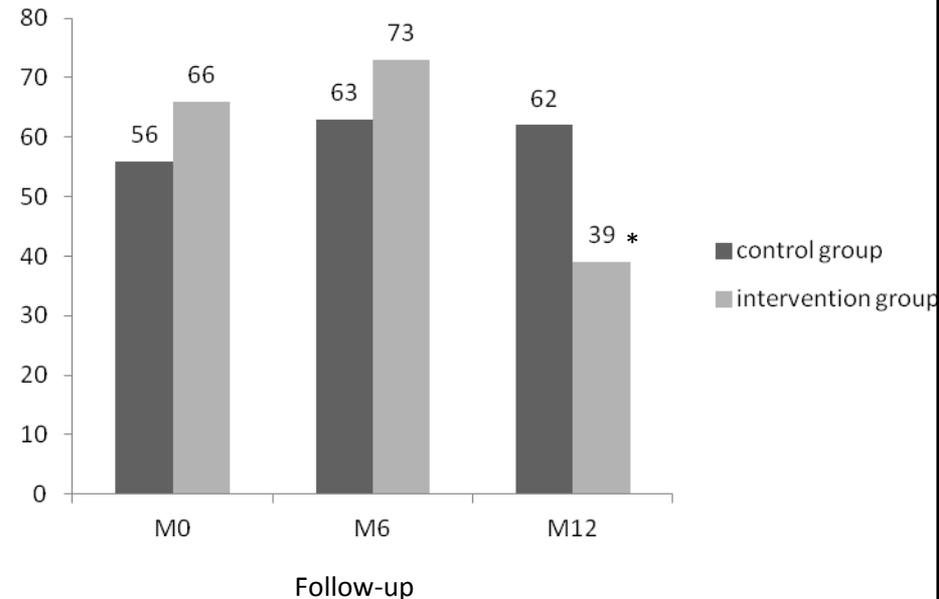
# Results (2) - Participants' characteristics

**Figure 2a.** Percentage of participants who reported at least one HCV risk practices



\*p<0.05 : significant difference between M0 and M6 within the intervention group

**Figure 2b.** Percentage of participants who reported at least one complication at the injection site



\*p<0.05 : significant difference between M0 and M12 within the intervention group

# Results (3) - Impact of education intervention on HIV-HCV risk practices

**Table 2.** Factors associated with HIV-HCV risk practices, multivariate model (n=240, visits=522)

	Nb of visits (%) or median [IQR]	multivariate analysis coefficient [95%CI]	p-value
<b>Gender</b>			
Female	117 (22)	0	
Male	405 (78)	-0.56 [-1.11; -0.02]	0.04
<b>Age<sup>§</sup></b>	31 [26-38]	-0.05 [-0.08; -0.02]	0.001
<b>Harmful alcohol consumption †</b>			
No	243 (47)	0	
Yes	276 (53)	0.54 [0.12; 0.95]	0.01
<b>Cocaine/crack use</b>			
No	325 (62)	0	
Yes	197 (38)	0.43 [-0.03; 0.89]	0.06
<b>Polydrug use*</b>	413 (79)		
No	109 (21)	0	
Yes		0.74 [0.25; 1.23]	0.003
<b>Intervention</b>	290 (56)		
No	232 (44)	0	
Yes		1.96 [0.86; 3.07]	<10 <sup>-3</sup>
<b>Follow-up time</b>	240 (46)		
M0	167 (32)	0	
M6	115 (22)	-0.18 [-0.64; 0.28]	0.44
M12	413 (79)	0.23 [-0.38; 0.84]	0.46
<b>Interaction</b>			
Intervention at M0		0	
Intervention at M6		-0.73 [-1.47; 0.01]	0.05
Intervention at M12		-0.86 [-1.79; 0.06]	0.07
<b>IMR</b>		-0.99 [-1.68; -0.31]	0.005

† AUDIT ≥ 3 for women and ≥ 4 for men; \* ≥ 3 drugs

# Results (4) - Impact of education intervention on local complications at the injection site

**Table 3.** Factors associated with local complications, multivariate model (n=238, visits=497)

	Nb of visits (%) or median [IQR]	multivariate analysis coef [95%CI]	p-value
<b>Age<sup>5</sup></b>	31 [26-38]	-0.04 [-0.06; -0.01]	<b>0.010</b>
<b>Sulfate morphine use</b>			
No	325 (62)	1	
Yes	197 (38)	0.41 [-0.02; 0.83]	0.061
<b>Intervention</b>			
No	290 (56)	1	
Yes	232 (44)	-0.81 [-1.80; 0.19]	0.113
<b>Follow-up</b>			
baseline	240 (46)		
6-month	167 (32)	0.23 [-0.19; 0.64]	0.292
12-month	115 (22)	0.14 [-0.31; 0.59]	0.529
<b>Interaction</b>			
IntervXbaseline		1	
IntervX6-month		0.13 [-0.53; 0.78]	0.708
IntervX12-month		-1.01 [-1.77; -0.24]	<b>0.010</b>
<b>IMR</b>		<b>0.78 [0.13; 1.43]</b>	<b>0.018</b>



# Discussion

- In PWID, positive impact of this innovative education intervention on injecting practices in terms of :
  - Decrease of HCV risk practices since 6 months
  - Reduction of local complications at the injection site visible at 12 months
- **Limitations**
  - Difficult to have a comparable control group because of clustering : high diversity of populations of PWID => Heckman approach usefulness
  - Lost to follow-up
  - Self-reports
- **Strengths :**
  - High acceptability and feasibility (reduced stigma)
  - easy training of community-staff,
  - low costs
  - Suitable for stimulant injectors

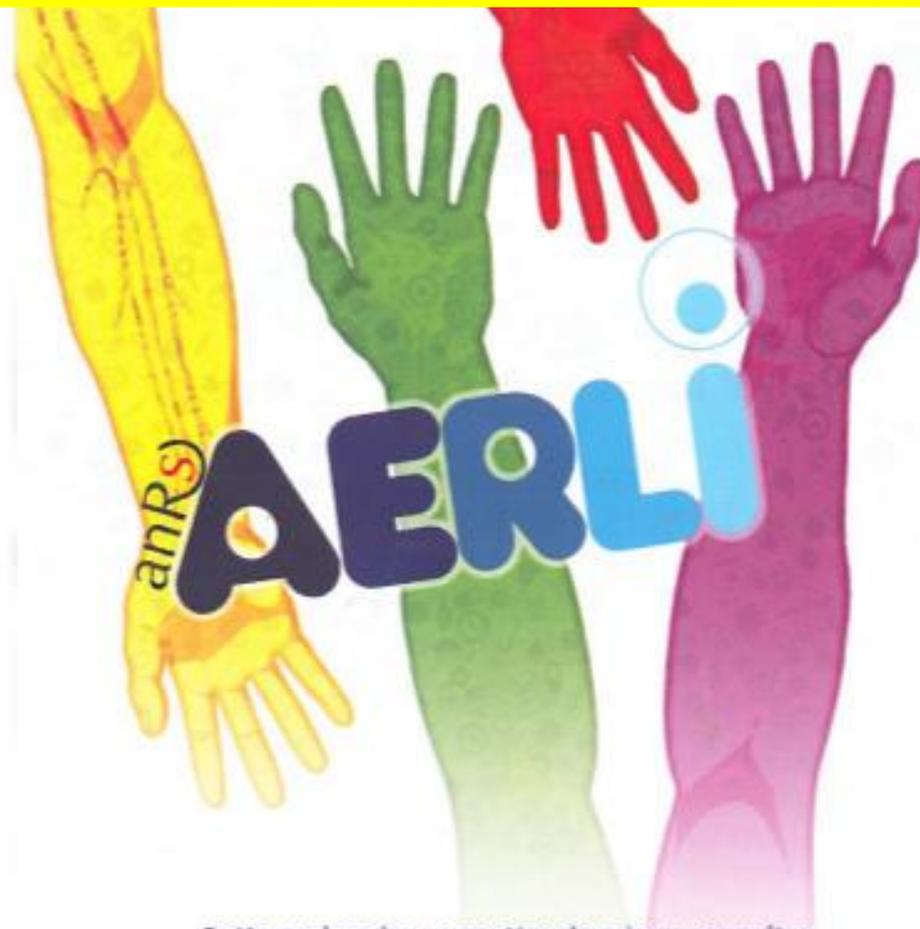
# Conclusions and perspectives

- Included in the new French health law
- Intervention that may be replicated in several contexts
  - Needle exchange programs, safer injecting facilities, outreach intervention in settings where prevalence of PWID is high
- Improves HCV testing (not yet published results)
- Outreach AERLI will also be tested (ANRS Outsider)

# Acknowledgements

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- The AERLI study group
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# Thank you for your attention



Cette recherche permettra de mieux connaître  
les pratiques d'injection afin de pouvoir en limiter les complications  
(abcès, surinfections, VIH/sida, hépatites, mauvais état veineux, poussières, etc.)  
Elle s'adresse aux plus de 18 ans

anRS

