END OF HIV EPIDEMIC AMONG PEOPLE WHO INJECT DRUG (PWID) IN A LOW-MIDDLE INCOME COUNTRY: THE HAI PONG CASE, VIETNAM

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Background

The HIV epidemic has been ended among people who inject drugs (PWID) in most high-resource setting thanks to combined interventions including harm reduction activities and access to HIV care, but not in low-middle income countries where the HIV prevalence remains high

Objective

To assess whether the HIV epidemic could be ended using combined interventions

Methods

We conducted **3 annual (from 2016 to 2018) community -based Respondent-Driven Sampling (RDS) surveys** [1] among PWID which fueled an **open prospective cohort of HIV negative PWID**.

For each RDS and each bi-annual follow up visits, we realised: multi drug test, HIV and HCV testing, HIV viral load testing when infected, and collected care history, drug use patterns, addiction treatment history and sexual behaviors

Inclusion criteria were: having more than 18 years, **currently injecting drug**, having **positive urine for heroin (HER) or methamphetamine (MET)** and having recent skin marks of injection

OUTCOMES

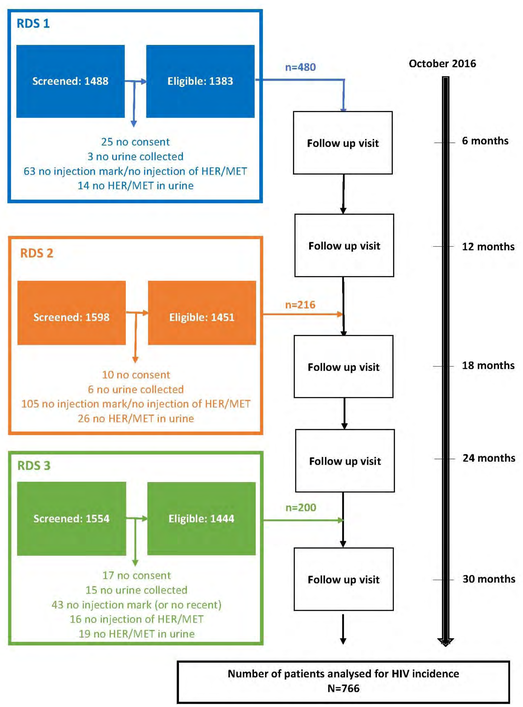
- We calculated **HIV incidence** using follow-up time accumulated in number of person-years in the cohort and in HIV-negative PWID recaptured in a subsequent RDS survey.
- At each survey, we estimated the viremia prevalence (proportion of all participants with plasma viral load > 1000 copies/mL) and the **HIV cascade of care**

Results

The vast majority of participants were eligible.

Over the 3 RDS, **we enrolled 3150 distinct PWID**. The participant characteristics were similar across RDS surveys.

Figure1. RDS and HIV-negative cohort flowchart



Among the 896 PWID recruited for the HIV-negative cohort, 130 (14,5%) did not attend any follow-up visit and were not included in the incidence estimation.

The cohort participants accumulated 1120 years of follow up and only one seroconversion was observed. The HIV incidence rate was 0.9/1000 PY (95%Poisson CI: 0.02;5.0).

Overall 281 HIV-negatives participants have been recaptured and cumulated 377 years of follow up with no seroconversion. The incidence rate was 0/1000 PY (97,5%Poisson CI: 0:9.8)

Cumulating 1497 years of follow-up from the **1177 distinct HIV-negative PWID**, the **HIV incidence was 0.7/1000 PY (Poisson 95%CI: 0.02;3.7)**

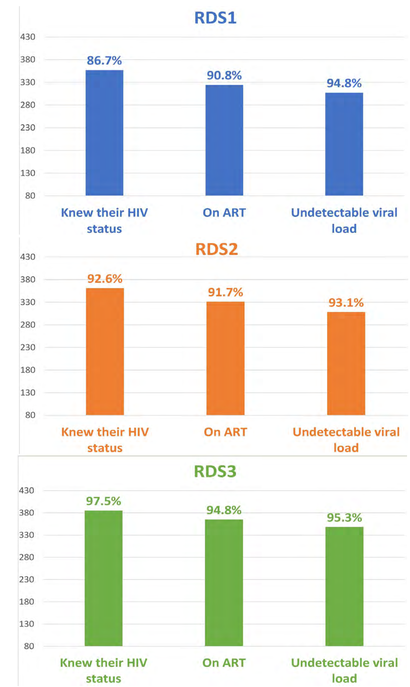
The **HIV viremia decreased from 7.2% at RDS1 to 5.4% at RDS2 and 3.1% at RDS3**

Table 1. RDS participants characteristics

	RDS1 2016 (n=1383)	RDS2 2017 (n=1451)	RDS3 2018 (n=1444)	Total RDS (n=3150)	HIVneg cohort (n=896)
Median age [IQR]:	38.5 [33.0;45.0]-	39.0 [34.0;46.0]	41.0 [35.0;47.0]-	39.0 [33.0;45.0]*	39.0 [33.0;47.0]
Gender %:					
Female	6.0$	4.5*	5.3*	4.90+	7.3
Male	93.8	95.2	94.3	94.9	92.4
Transgender	0.2	0.3	0.4	0.2	0.3
Marital status %:					
Single	35.0$	32.8	27.4-	32.2+	29.8
Legally married	33.4	35.6	39.4	36.5	35.0
Living in couple	3.3	4.7	4.8	4.1	4.2
Divorced/separated	27.1	25.3	26.3	25.8	29.5
Widowed	1.2	1.6	2.1	1.4	1.5
Salaried/employed %:	78.5+	83.7	81.6-	81.5~	81.8
Use of Ice %:					
Ever injected ice	1.7$	0.7	0.7*	1.1~	1.1
Ever smoke ice	70.0$	69.6	69.9-	69.5+	72.4
Smoked ice in the last 30 days	46.7$	41.9	43.8*	44.8~	49.3
Duration of heroin injection %:					
<5 years	28.8$	17.9	10.3-	23.1+	30.1
5 - <10 years	25.7	29.4	27.7	28.2	27.2
10 - <15 years	21.4	23.8	27.2	22.4	21.6
>=15 years	24.1	28.9	34.8	26.3	21.1
Reported receiving methadone %:	11.8$	32.4	41.5@	22.2£	9.3
Methadone detection in urine %:	42.1-	56.7	63.9	50.7-	23.2
Other drug use in the past 6 months %:					
Cannabis	15.1$	10.1	9.5*	13.1~	13.6
Ketamine	4.6$	4.1	3.3*	4.6~	5.8
Biology %:					
HCV positive serology	70.5$	69.3	72.0-	67.6+	60.9
HIV positive serology	29.9$	26.9	27.4-	26.5+	NA
For HIV +:					
Reported being on ART	80.8#	85.5$	93.1$	83.4&	NA
Viral load <1000 copies/mL	24.4@	20.2+	11.5*	21.4^	NA
Needles/syringes shared last 6 months among PWID with detectable viral load	4.0	7.7	8.9	7.3	NA

-1 missing value ; * 2 missing values; $ 3 missing values; +4 missing values; ~5 missing values; @6 missing values; ^ 7 missing values; £ 8 missing values; # 11 missing values; & 16 missing values

Figure 2. Population based HIV cascades of care



Conclusion

Despite a high prevalence, the HIV epidemic has now been ended in the large PWID population of Haiphong. This remarkable success has been achieved through a combination of successful intervention from the national program (methadone program, harm reduction activities and HIV program)

References

[1] Des Jarlais, D., Duong, H.T., Pham Minh, K., Khuat, O.H.T., Nham, T.T.T., Arasteh, K., Feelemyer, J., Heckathorn, D.D., Peries, M., Moles, J.P., Laureillard, D., Nagot, N., (The Drive Study Team), 2016. Integrated respondent-driven sampling and peer support for persons who inject drugs in Haiphong, Vietnam: a case study with implications for interventions. AIDS Care 28, 1312–1315. https://doi.org/10.1080/09540121.2016.1178698

Haiphong success story is very encouraging for many LMIC settings sharing similar obstacles to HIV prevention and care among PWID. It demonstrates that ending the HIV epidemic is feasible among PWID, even when the HIV prevalence remains high.