

The modeled impact of improved Hepatitis C Virus (HCV) treatment strategies on HCV prevalence among people who inject drugs (PWIDs) in Belgium

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BACKGROUND AND OBJECTIVES

Understanding HCV transmission dynamics among high-risk populations requires robust epidemiological data and country-specific mathematical modeling to assess the potential impact of improved HCV treatment strategies.

Recent therapeutic advances promise greater convenience (oral therapies) with higher efficacy (>90% sustained viral response), and shorter duration of treatment; however, the population-wide impact of providing these treatments to persons at-risk of transmitting HCV is yet to be seen.

Objectives:

1. Understand the current dynamics of the injecting population in Belgium
2. Evaluate the impact of treating persons at-risk of transmitting HCV on prevalence among PWIDs

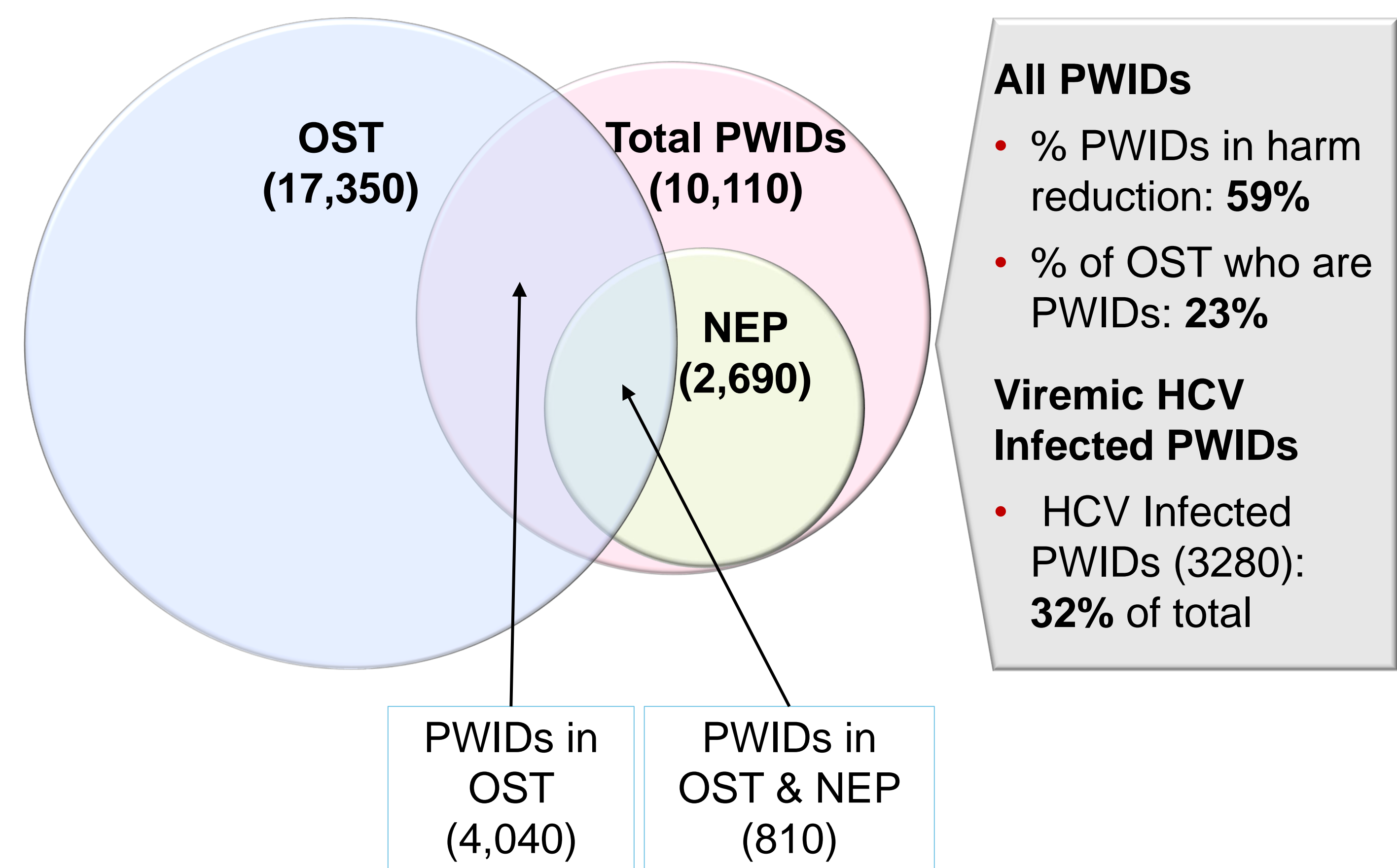
MATERIALS & METHODS

- HCV transmission was modeled using cohorts to track incidence and prevalence among current PWIDs in the general population, as well as actively injecting participants of opiate substitution therapy (OST) and/or needle exchange programs (NEP)
- The relative impact of increasing the number of PWIDs treated with new oral DAAs was considered, including the annual number treated in order to reduce the HCV-infected PWID population by 2030

KEY INPUTS

- ❖ 'Ever-injectors' who currently inject = 41% (10,100 PWIDs) [1]
- ❖ HCV prevalence among PWIDs = 43% (34%-57%) [2]
- ❖ Individuals enrolled in OST = 17 350 in 2012 [2]
- ❖ Percent in OST who inject = 23% in 2012 [2]
- ❖ Syringes distributed through NEP in 2012 = 982 375 [2]

Figure 1. Distribution of PWIDs in Belgium



RESULTS

Base case outcomes in 2030

Under the current transmission paradigm, there are projected to be 2717 HCV-infected PWIDs, a 10% decrease from 2014

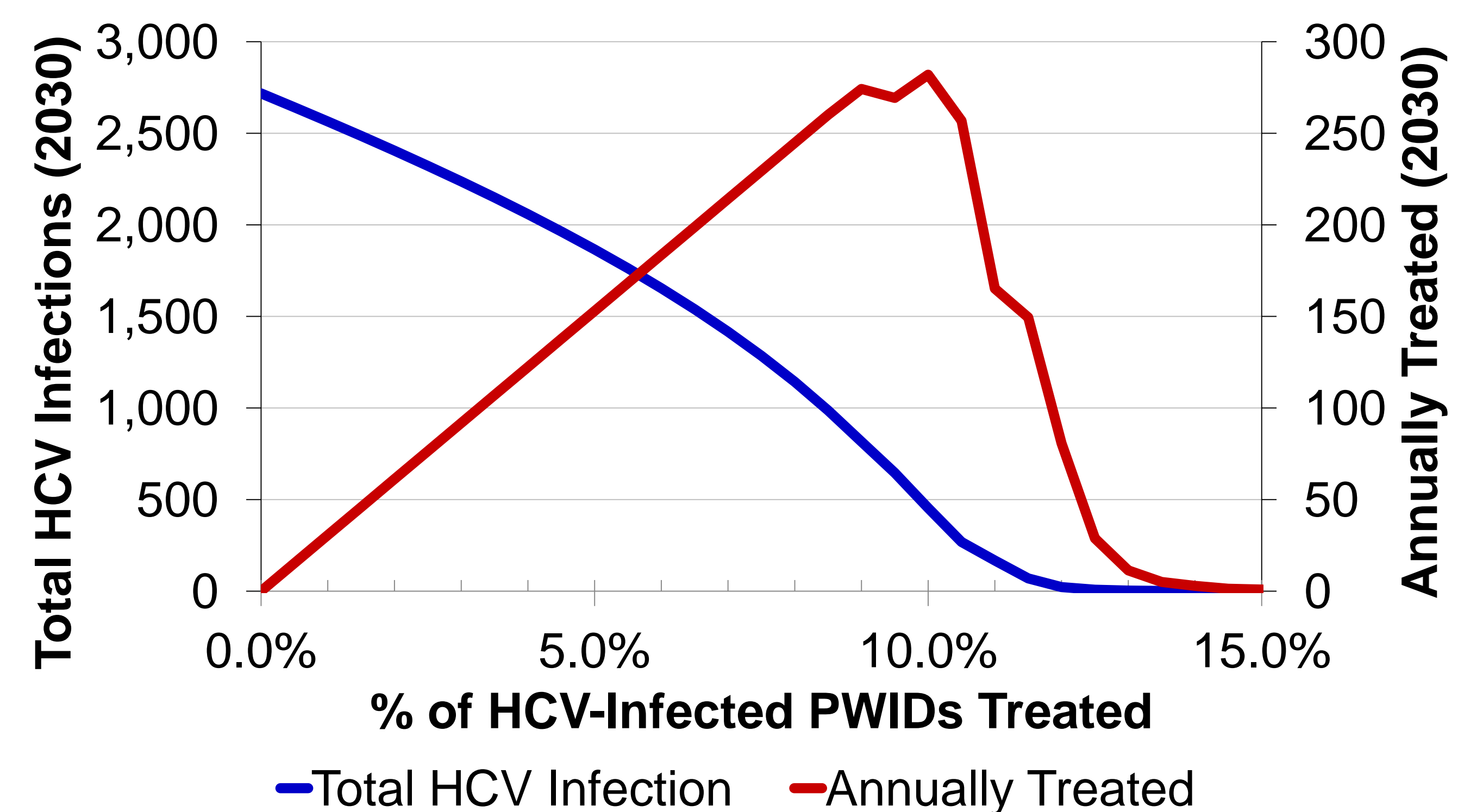
Reduction in prevalence by 2030 from treatment with new oral DAAs

- Treat 30 annually (1% of HCV-infected PWID population in 2014): 5% reduction
- Treat 150 annually (5% of 2014 population): >30% reduction
- Treat 320 annually until 2027 (11% of 2014 population): >90% reduction

Targeting treatment to PWIDs engaged in OST and NEP would provide the greatest reduction in prevalence for the number of individuals treated

- 2.2 treated in OST/NEP to reduce prevalence by 1
- 6.8 treated in the general population to reduce prevalence by 1

Figure 2. HCV prevalence among PWIDs, by percent and number treated annually, 2030



CONCLUSIONS

Treating just over 300 PWIDs annually resulted in a >90% reduction in the HCV infected PWID population by 2030. Furthermore, the relative impact of treatment was greatest when focused on the population engaged in both OST and NEP.

Treatment is expected to increase the rate of secondary infections; however, secondary infections will decline as HCV prevalence decreases.

Combined with an expansion of harm reduction programs, this analysis supports the implementation of a screening and treatment strategy among PWIDs

REFERENCES

- [1] Bollaerts K, Aerts M, Sasse A. Improved benchmark-multiplier method to estimate the prevalence of ever-injecting drug use in Belgium, 2000-10. Arch Public Health 2013;71(1):10.
- [2] BMCDDA. Belgian national report on drugs 2013. Brussels, Belgium: Belgian Monitoring Center for Drugs and Drug Addiction; 2013 Oct. Report No.: WIV-ISP/EPI Reports No 028.