**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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**Introduction:** In 2010, there were 10,100 PWIDs in Belgium, of whom, 43% (34%-57%) were HCV infected. Approximately 17,350 individuals were enrolled in opioid substitution therapy (OST), with 23% continuing to inject while on treatment. In 2012, 982,375 syringes were distributed through needle exchange programs (NEP). Understanding HCV transmission dynamics among high-risk populations requires robust epidemiological data and mathematical modeling to assess the potential impact of improved HCV treatment strategies.

**Methods:** HCV transmission was modeled using cohorts to track HCV incidence and prevalence among active PWIDs in the general population, OST and NEP. Model assumptions were derived from published literature and expert consensus. The relative impact of increasing the number of PWIDs treated with new oral DAAs was considered.

**Results:** If the current transmission paradigm continues, there will be 3,620 HCV infected PWIDs in 2030. Annually treating 40 (1% of 2014 population) or 200 (5% of 2014 population) HCV-infected PWIDs with new oral DAAs resulted in 5% and >25% reductions, respectively, in HCV-infected PWIDs by 2030. Treating 387 PWIDs annually (17% of 2014 population) resulted in a >90% reduction by 2030. 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, as compared with 6.8 treated in the general population).

**Conclusion:** The results show that treating a small amount of PWIDs resulted in substantial decreases in the HCV-infected PWID population by 2030. Furthermore, the relative impact of treatment was greatest when focused on the population engaged in OST and NEP. Treatment is expected to increase the rate of reinfection; however, reinfection will decline as HCV prevalence decreases. This analysis supports the implementation of a screening and treatment strategy among PWIDs when combined with an expansion of harm reduction programs.

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