

# COMBINING THE EXPANSION OF MEDICATED ASSISTED THERAPIES AND HCV TREATMENT AMONG PWID IN UKRAINE: INSIGHTS FROM NETWORK MODELING

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**Background:** Opioid substitution therapy (OST) in Ukraine was first introduced using buprenorphine maintenance (BMT) in 2004 and followed by methadone maintenance treatment (MMT) in 2008. However effort to scale up OST have been hindered by numerous obstacles. Combining OST and HCV treatment have been shown to prevent new infections in a variety of national contexts. In this paper, we model the impact of combining dual interventions of OST and HCV treatment on the reduction of HCV over 10 year period in Kiev, Ukraine.

**Methods:** In 2016, we conducted a pilot study in which we collected bio-behavioral data on 564 PWID in Kiev, Ukraine and their 3000+ injection network contacts. Using empirical data on injection network structures, we develop and calibrate a dynamic stochastic network-based model. The model is used to analyze the HCV treatment transmission dynamics over 10 year horizon.

**Results:** In our sample, 89% of PWID in Kiev tested positive for HCV. Despite the fact that more than 30% of the sample reported accessing OST, the combination of high HCV prevalence, short duration of OST as well as continued substance use among PWID during OST, are shown to be a significant barriers to HCV prevalence reduction. In order for HCV prevalence to decline >20% over 10 year period, the scale up of treatment has to be greater than 15% per year.

**Conclusions:** Combining antiviral HCV treatment with continued OST expansion are crucial for the reduction of HCV prevalence in the longer run. Substantial scale up of HCV treatment is a necessary condition for effective treatment in the context of high HCV prevalence and complex networks structures among PWID.