

Review of: "Evaluating the impact and cost-effectiveness of scaling-up HCV treatment among people who inject drugs in Ukraine"

Ume Abbas

Potential competing interests: The author(s) declared that no potential competing interests exist.

Ending the HCV and HIV Epidemics: All Aboard

The intersecting pandemics of human immunodeficiency virus (HIV) and hepatitis C virus (HCV) continue to ravage populations and economies across the globe. Prevention and control efforts would require bolstering commitment and momentum, as well as overcoming challenges such as inertia, conflict and the coronavirus disease 2019 (COVID-19) pandemic, to meet the aspired elimination targets.

The Global AIDS Strategy 2021-2026 (Strategy) developed by the Joint United Nations Programme on HIV/AIDS (UNAIDS), provides a revised approach, to keep the world on track for eliminating the HIV pandemic by 2030 [1]. The Strategy proposes the linkage and integration of HIV services with those for mental health, drug and substance use, and the prevention and treatment of HCV. Thus, there is renewed enthusiasm and potential to achieve, the World Health Organization (WHO)'s ambitious target of global elimination of HCV by 2030; through treatment of 80% of eligible people with HCV, with a 90% reduction in incident infections, and a 65% reduction in HCV-related mortality [2].

Ukraine is among the countries most severely affected by HCV having an estimated prevalence of 3.5% compared to an average of 1.5% in Europe [3]. The country also has a high burden of persons who inject drugs (PWID), as well as persons with HIV in key populations, with a high frequency of overlap among these three groups [4]. The prevalence of HCV among PWID is almost 70% [5].

In medRxiv, Stone et al. report for the first time, the potential impact and cost-effectiveness of different scenarios of HCV treatment including the measures required to achieve HCV elimination in Ukraine [6]. They formulated and analyzed a deterministic model, incorporating the dynamics of transmission and disease progression of both HCV and HIV among PWID in Ukraine, alongside HCV treatment. The scale-up of HCV treatment in Ukraine has been modest and relatively non-focused thus far, with just 5,933 treatments during 2015 to 2021, of which 46.1% were among current PWID; resulting in negligible (< 1%) decline in HCV incidence by 2021. The model predicted a substantial reduction in the HCV incidence in Ukraine, if subsequent HCV treatments were i) focused among PWID, ii) at high coverage level, and iii) combined with antiretroviral treatment, opioid agonistic therapy and other harm reduction services.

Stone et al. found that continuing the existing treatment rate (2,394 PWID/year) would reduce HCV incidence by a median

10.2% or 16.4% in 2030, if respective 42.5% or 100% of treatments were administered to current PWID. If the treatment rate was increased to 5,000 or 10,000 PWID/year, the declines in HCV incidence would be more. However, for an 80% incidence reduction by 2030, a median of 19,275 annual treatments would be required among current PWID, which would decrease to 17,955 if preventative interventions were also scaled-up. The authors estimated the incremental cost-effectiveness ratio (ICER) of the HCV treatments, by projecting the incremental costs and disability adjusted life years (DALYs) averted over 2020-2070 (using a 3% discount rate), compared to a counterfactual scenario without treatment. The mean ICER was US\$ 828.8 per DALY averted, that was cost-effective, based on a willingness-to-pay threshold of US \$3,096 per DALY averted (1xGDP).

The authors performed rigorous parameter uncertainty and sensitivity and various scenario analyses, and assessed the effects on outcomes. However, changes in the model's structural assumptions could further affect their results. For example: assuming the current Ukrainian levels of HCV treatment and costs (as an alternative to none assumed) in the counterfactual scenario; and/or assuming the antiviral regimen to be sofosbuvir and daclatasvir (as an alternative to sofosbuvir and ledipasvir assumed). Of note, the Ukrainian health authorities have decided to adopt across the country, the (Mykolaive) project of Médecins Sans Frontières (MSF), using generic sofosbuvir and daclatasvir to treat HCV [7]. Nevertheless, while more precise assumptions will likely change the results quantitatively, the qualitative insights are unlikely to change. Namely, using strategic HCV treatment scale-up, the elimination of HCV is both logistically and economically feasible in Ukraine. Thus, Stone et al. provide compelling argument and data in support of scaling up the HCV treatment and prevention programs combined with an optimized HIV response, for elimination of both HCV and HIV in Ukraine, by 2030.

References

1. UNAIDS. Global AIDS strategy 2021-2026 - End inequalities. End AIDS. 2021.
<https://www.unaids.org/en/resources/documents/2021/2021-2026-global-AIDS-strategy> (accessed Mar 4, 2022).
2. WHO. Global health sector strategy on viral hepatitis 2016–2021. Towards ending viral hepatitis.
<https://apps.who.int/iris/handle/10665/246177> (accessed Mar 4, 2022).
3. Petruzzello A, Marigliano S, Loquercio G, Cozzolino A, Cacciapuoti C. Global epidemiology of hepatitis C virus infection: An up-date of the distribution and circulation of hepatitis C virus genotypes. *World J Gastroenterol* 2016;22:7824-40.
4. UNAIDS. <https://www.unaids.org/en/regionscountries/countries/ukraine> (accessed Mar 4, 2022).
5. Iakunchykova O, Meteliuk A, Zelenev A, Mazhnaya A, Tracy M, Altice FL. Hepatitis C virus status awareness and test results confirmation among people who inject drugs in Ukraine. *The Int J Drug Policy* 2018;57:11-7.
6. Stone J, Walker JG, Bivegete S, et al. Evaluating the impact and cost-effectiveness of scaling-up HCV treatment among people who inject drugs in Ukraine. *medRxiv* 2021:2021.12.13.21267712.
7. Devi S. Ukrainian health authorities adopt hepatitis C project. *Lancet* 2020;396:228.

