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Editorial

Macro-efforts for the micro-elimination of hepatitis C targeting people who inject drugs

The World Health Organization (WHO) has set a target of a 90% reduction of hepatitis C virus (HCV) incidence by 2030, by which time 80% of eligible persons with chronic HCV infection should have been treated (World Health Organization, 2016). With the increased availability of curative pan-genotypic direct-acting antivirals (DAAs), the target appears to be achievable, more so than that for the elimination of hepatitis B virus (HBV) infection, which is reliant on life-long suppressive therapy and universal vaccination. Policy-wise, there is consensus in the application of micro-elimination for achieving HCV eradication worldwide (Lazarus et al.,2018). By breaking down the HCV population into multiple sub-population segments each for different means of targeting, micro-elimination is considered a pragmatic approach for achieving total elimination (Lazarus et al.,2017). As we enter the 10th year since World Hepatitis Day was first observed in 2010, rethinking about micro-elimination strategies is needed as we are still very far from the goal. Specifically, have we given adequate attention to people who inject drugs (PWID)?

Globally, PWID constitute a disproportionally large population group hardest hit by the HCV epidemic. There are an estimated 15.6 million PWID around the world, about half of whom are HCV antibody positive (Degenhardt et al., 2017). A systematic review further estimated that globally 8.5% of all HCV infections occur among PWID who recently began injecting drugs (Grebley et al., 2019). Despite WHO's advocacy for HCV elimination, treatment coverage of HCV-infected PWID continues to be low. Recent studies in some western countries found that only one-fifth or less of PWID in the United States (US) (Falade-Nwulia et al., 2019; Radwan et al., 2019), Canada (Socías et al., 2019), and European countries (Murtagh et al., 2018; Bourgeois et al., 2019) had been on HCV treatment, the regimens of which included but were not limited to DAAs. The proportion of DAA-treated PWID would be expected to be even lower. Treatment coverage data from developing countries are scarce. In Malaysia, less than 2% of all HCV-infected patients had been treated (Hiebert et al., 2019), while HCV transmission continues. In Europe PWID have accounted for 80% of all new HCV infections (Dillon et al., 2016). In the presence of active virus transmission, HCV micro-elimination initiatives are racing against time. The dynamicity of HCV transmission among PWID contrasts with that in other HCV-affected sub-populations, for example those linked with ineffective infection control. Slow implementation of elimination efforts targeting PWID would be overwhelmed by continuous transmission, canceling out progress made by isolated micro-elimination projects.

Why has progress with HCV elimination been slow? Internationally the WHO targets for viral hepatitis elimination are extremely broad, perhaps too broad, covering not just HCV but HBV infections, and not just PWID but other at-risk populations. While the strategy of viral hepatitis elimination has been adopted by national governments, effective prioritisation of PWID is not universal. Belonging to the category of PWID was not uncommonly associated with lower likelihood of access to DAAs (Rivero-Juarez et al., 2019). Physicians delivering opioid agonist treatment experienced barriers in providing HCV testing and management in Australia, Canada, Europe and US (Litwin et al., 2019). Strategies focusing on PWID were largely absent in developing countries, as reported in a study covering Eastern Europe and Asia (Luhmann et al., 2015). In Hong Kong, for example, while an extensive methadone treatment programme has been in place for decades (Lee et al., 2008), access to HCV treatment has been restricted to ex-PWID (Wong et al., 2019). The International Network for Hepatitis in Substance Users highlighted poor access to health services and various forms of restrictions and punitive drug policies as the main obstacles for HCV elimination in PWID (Day et al., 2019).

It is important to note that a targeted approach can make a difference. In Australia, DAAs became approved for use through the Pharmaceutical Benefits Scheme, which increased significantly the treatment uptake in marginalised communities such as PWID (Butler et al., 2019). In Iceland, a territory-wide universal HCV treatment programme, coupled with enhanced additional screening of PWID, could prepare the country for achieving HCV elimination targets (Scott et al., 2018). In countries with established harm reduction services, these are the same platforms which could be adapted for introducing HCV elimination efforts (Pericàs et al., 2019). The conventional means of implementing HCV treatment through hospital specialists on referral basis is unlikely to make profound public health impact. Micro-elimination of HCV in PWID importantly involves expanding harm reduction services to incorporate HCV screening and treatment. This would mean not a *micro*- but a *macro*-effort in terms of the breadth and dimensions of the intervention targeting PWID. The principle of "treatment as prevention" can only be effective if the critical proportion of PWID screened for HCV and accessing DAAs is large. Small, uncoordinated and non-targeting micro-elimination projects will not lead us anywhere near the target of a 90% reduction of HCV incidence by 2030, which is just 10 years away.

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Indeed, global elimination of HCV is unachievable without proactively targeting PWID in expanded macro-efforts founded on a harm reduction principle.

Conflicts of interest

The authors declare no conflict of interest.

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