

MODELING THE IMPACT OF PREVENTION AND TREATMENT INTERVENTIONS FOR PEOPLE WHO INJECT DRUGS IN DAR ES SALAAM, TANZANIA

Fraser H¹, Stone J¹, Makyao N², Soriano MA³, Sambu V², Mfisi P⁴, Makere N⁵, Luhman N³, Nouvellet M³, Ragi A⁶, Mundia B⁶, Vickerman P¹

1. Population Health Sciences, Bristol Medical School, University of Bristol, UK
2. National AIDS Control Programmes, Dar es Salaam, Tanzania
3. Médecins du Monde, France
4. The Drug Control and Enforcement Authority, Prime Ministers Office, Tanzania
5. Tanzania Council for Social Development (TACOSODE), Dar es Salaam, Tanzania
6. Kenya AIDS NGO Consortium, Kenya

Background: People who inject drugs (PWID) in Dar es Salaam, Tanzania, have high HIV and hepatitis C virus (HCV) prevalence. Harm reduction interventions (HR: needle and syringe programmes (NSP) and opioid substitution therapy (OST)) have existed in Dar es Salaam since 2011, with antiretroviral treatment (ART) initiating in 2004. We model the impact of existing and scaled-up interventions among PWID in Dar es Salaam.

Methods: We developed a dynamic HIV and HCV transmission model amongst PWID, calibrated to data from Dar es Salaam on trends of HIV (~30% and ~67% in males and females respectively in 2011) and HCV prevalence (~16% in 2017), HR intervention coverage, and ART coverage among PWID (63.1% in 2015). We estimate the impact of existing interventions and impact by 2030 of scaling-up OST (27.7% to 50% of PWID) and NSP (11.9% to 75% -'full HR'), HCV-treating 10% of HCV-infected PWID annually and increasing ART coverage to 90/90/90.

Results: The model projects HCV and HIV incidence are 9.9/100pyr and 0.6/100pyr in 2019, respectively. Due to low coverage, OST and NSP has had low impact to date, averting 6.0% (95%CrI:5.2–7.1%) and 6.7% (95%CrI:4.6–9.5%) of HIV and HCV infections, respectively, since 2011. In contrast, ART (65.5% coverage in 2019) has averted 17.6% (95%CrI:14.5–20.3%) of HIV infections since 2004. Full HR is projected to reduce HCV and HIV incidence by 24.8% (95%CrI:18.9–31.6%) and 36.8% (95%CrI: 25.4–47.0%) over 2019-2030, respectively. If ART and HCV treatment is scaled up alongside 'full HR', HCV incidence could decrease by 64.9% (95%CrI:62.0–68.5%) and HIV incidence by 50.9% (95%CrI:42.8–58.5%) by 2030.

Conclusion: Existing harm reduction interventions and ART have impacted on HIV and HCV transmission among PWID in Tanzania. However, further scale-up with HCV treatment is needed to move Tanzania towards eliminating HCV and HIV among PWID.

Disclosure of interest: PV has received unrestricted research grants from Gilead unrelated to this work. HF has received an honorarium from MSD unrelated to this work. JS has received a conference attendance sponsorship from Gilead unrelated to this work.