

MODELLING THE HIGH LEVELS OF HIV AND HCV TRANSMISSION AMONG PEOPLE WHO INJECT DRUGS IN SOUTH AFRICA – THE NEED FOR URGENT INTERVENTION SCALE UP

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Background

Recent surveillance suggests that people who inject drugs (PWID) in South Africa have high, and increasing, incidence of HIV and HCV. Intervention coverage (2023) is estimated at 57% for HIV antiretroviral therapy (ART) with 36% achieving viral suppression (VS); 3% for opioid agonist maintenance treatment (OAMT), and 34% for needle and syringe programmes (NSPs). There is little understanding of the scale of interventions needed to control these epidemics; we used modelling to predict the impact of existing and scaled up interventions.

Methods

We developed a model of HIV and HCV transmission among PWID in urban centres in South Africa and calibrated it to data from four bio-behavioural surveys (2013-2023) and programmatic data (2018-2025) from OAMT and NSP services. We projected trends in HIV and HCV incidence with existing coverage levels of interventions, and if coverage levels were increased for ART (90% coverage with 95% achieving VS), OAMT (50% coverage) and NSP (90% coverage) by 2030.

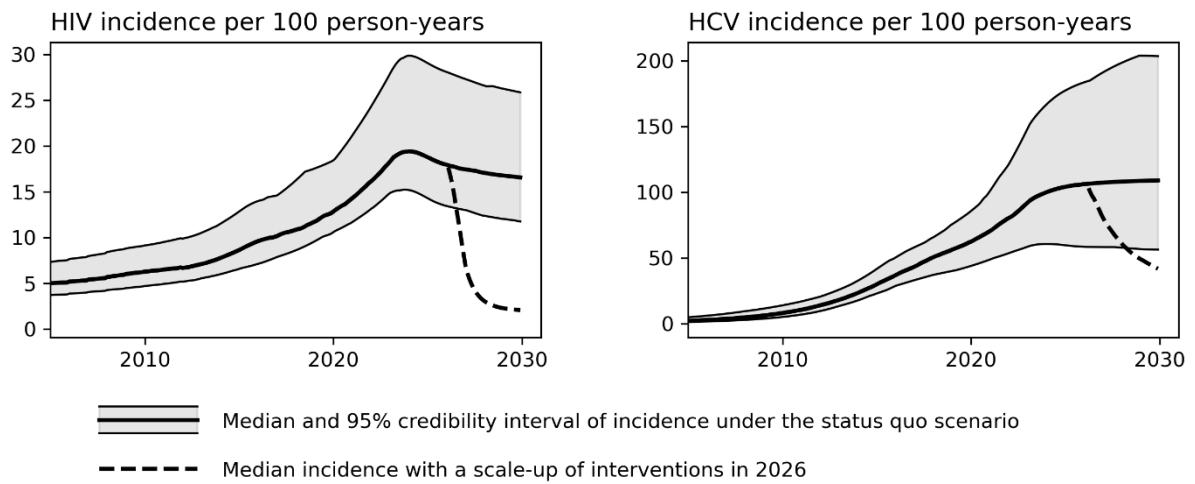
Results

The model estimates that in 2026, a median of 40.8% (95% credibility interval: 36.5-52.1) and 80.5% (71.0-89.7) of PWID are living with HIV and chronic HCV, respectively. We project that if existing interventions continue at current coverage levels, HIV incidence will decrease from 18.00 (13.4-28.1) infections per 100 person-years (/100pyrs) in 2026 to 16.56/100pyrs (11.6-26.3) by 2030, and HCV will increase from 106.0/100pyrs (58.6-189.5) to 109.0/100pyrs (56.2-205.9). Scaling-up OAT, NSP and ART would reduce HIV and HCV incidence to 2.1/100pyrs (1.4–6.5) and 41.9/100pyrs (16.5–99.8), respectively, by 2030 (figure).

Conclusion

Current efforts to control HIV and HCV transmission among PWID in South Africa are insufficient. There is a need to scale-up existing interventions to reduce HIV and HCV incidence. Additional interventions, such as HIV pre-exposure prophylaxis and HCV treatment also need to be modelled to assess their additional impact on epidemic control.

Figure: Model projections with and without scale-up of interventions starting in 2026



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