**MODELLING THE IMPACT OF INTERVENTIONS TARGETING HIGH-RISK POPULATIONS ON THE HCV EPIDEMIC IN PAKISTAN**

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**Background:** Chronic prevalence of hepatitis C (HCV) infection in Pakistan is estimated to be ~4%, with transmission primarily associated with healthcare, injecting drug use, and community exposures. We use modelling to project future HCV burden and the impact of targeted interventions.

**Methods:** A HCV transmission model capturing current population demographics in Pakistan was developed and calibrated using chronic HCV prevalence estimates from a national survey conducted in 2007 (3.6%) and amongst people who inject drugs (PWID, 56-69%). The model estimates HCV burden until 2030, and evaluates the impact of risk reduction and treatment interventions targeting the general population and high-risk groups including PWID.

**Results**: From 2015 to 2030, the model projected an increase in chronic HCV prevalence (4.0% to 5.2%) and incidence (3.6 to 4.7 per 1000 person-years (py)) in Pakistan without interventions, representing an increase from 8 to 13 million prevalent infections and from 0.7 to 1.1 million incident infections annually. About 15% of new infections over the next 15 years will be attributable to injecting drug use. Reducing PWID-related HCV transmission risk by 50% can avert over 820,000 new infections from 2015 to 2030. Treating overall at 5.0% per year (~370,000/year) could decrease prevalence to 2.9% by 2030 and incidence to 2.8/1000py, with 520 new infections averted per 1000 treatments (IA/1000T). Utilising the same number of treatments, targeting PWIDs at 10 times the rate as the general population can reduce incidence to 2.5/1000py and achieve 610 IA/1000T. Combining targeted treatment with reduction in PWID-related transmission risk by 50% could achieve an even greater impact of 840 IA/1000T.

**Conclusion:** Model projections suggest treatment interventions targeting high-risk HCV transmission groups, such as PWID, can have substantial impact by averting a greater number of infections per treatment, an especially important consideration in resource-limited settings with high HCV burden such as Pakistan.

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