COST-EFFECTIVENESS OF SCALING UP HCV PREVENTION, TESTING AND TREATMENT INTERVENTIONS AMONG PEOPLE WHO INJECT DRUGS IN THE US

Authors: Fraser H¹, Barbosa C², Vellozzi C³, Hoerger TJ⁴, Evans J⁴, Hariri S³, Havens J⁵, Martin NK⁶, Hickman M¹, Kral AH², Leib A², Nerlander L³, Handanagic S³, Raymond HF⁷, Page K⁸, Young A⁹, Zibbell J², Ward J³, Vickerman P¹

¹University of Bristol, Bristol, UK, ²RTI International, Research Triangle Park, USA, ³U.S. Centers for Disease Control and Prevention, Atlanta, USA, ⁴University of California, San Francisco, USA, ⁵University of Kentucky College of Medicine, USA, ⁶University of California San Diego, USA, ⁷San Francisco Department of Public Health, USA, ⁸University of New Mexico Health Sciences Center, USA, ⁹University of Kentucky, USA

Background:
HCV prevention and treatment interventions need scaling-up among people who inject drugs (PWID) to tackle the increasing HCV epidemic in the US; we undertake the first cost-effectiveness of this strategy.

Methods:
We calibrated two HCV-transmission and disease progression models among PWID and ex-PWID to data from rural Perry County, Kentucky (PC) and urban San Francisco (SF). Compared to PC, SF has a greater proportion with recent (last 3-6 months) access to MAT (6% vs 12%) or SSP (0% vs 85%); both are assumed to reduce HCV-transmission risk by about 50%, and 70% combined. HCV-treatment of PWID is currently negligible in both settings. Intervention scenarios considered: (HR) Scale-up of SSP and MAT to 50% coverage (SSP coverage at baseline is high in SF) with no HCV-treatment scale-up; and HR (50% coverage for both) plus 90% of PWID HCV-screened annually and 90% of HCV-infected PWID treated annually. Using a health-care perspective and measuring benefits in terms of quality adjusted life years (QALYs), we determined the incremental cost-effectiveness ratio (ICER) of each intervention compared to existing baseline.

Results:
In PC, intervention HR cost $14 million, gained 752 QALYs, for an ICER of $18,277 per QALY gained, whereas HR+PWID HCV-treatment cost $32 million, gained 3,143 QALYs, for an ICER of $10,157 per QALY gained. Conversely, the interventions were less cost-effective in SF; HR cost $367 million, gained 7,695 QALYs, for an ICER of $47,638 per QALY gained, whereas HR+PWID HCV-treatment cost $1,449 million, gained 71,441 QALYs, for an ICER of $20,288 per QALY gained. Assuming a $50,000 willingness to pay threshold, both interventions are cost-effective in 100% of simulations for PC, but in SF, only for 72% of simulations for HR and 100% for HR+PWID HCV-treatment.

Conclusion:
The scale-up of HCV prevention, screening and treatment interventions for PWID could be cost-effective in rural and urban US settings.
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