

IMPACT OF HCV TESTING AND TREATMENT SERVICES ON HCV TRANSMISSION AMONG MEN WHO HAVE SEX WITH MEN AND INJECT DRUGS IN SAN FRANCISCO: A MODELLING ANALYSIS

Authors:

Artenie A¹, Stone J¹, Facente SN^{2,3}, Fraser H¹, Hecht J^{4,5}, Rhodes III P^{3,6}, McFarland W⁷, Wilson E⁷, Morris MD⁴, Vickerman P¹

¹Population Health Sciences, Bristol Medical School, University of Bristol, Bristol, UK, ²School of Public Health, Division of Epidemiology and Biostatistics, University of California Berkeley, Berkeley, USA, ³Facente Consulting, Richmond, USA, ⁴San Francisco AIDS Foundation, San Francisco, USA, ⁵Springboard HealthLab, Berkeley, USA, ⁶University of California San Francisco Alliance Health Project, San Francisco, USA, ⁷San Francisco Department of Public Health, San Francisco, USA, ⁸Department of Epidemiology and Biostatistics, University of California San Francisco, San Francisco, USA

Background: Men who have sex with men carry a high burden of hepatitis C virus (HCV) and some inject drugs (MSM-IDU). We estimated the impact of HCV testing and treatment among MSM-IDU in San Francisco.

Methods: We developed a dynamic HCV/HIV transmission model among MSM calibrated using data from biobehavioural surveys and community-based health services in San Francisco, including proportion of MSM-IDU [defined as past-year injecting; 6.0% (2017)], HCV antibody prevalence [15.5% and 2.3% in MSM who ever and never injected, respectively (2011)], HIV prevalence, self-reported HCV/HIV diagnosis, treatment and PrEP history. DAAs were introduced in 2015. We assumed high levels of HCV testing [79.1%-86.2% MSM ever tested (2011-2019)] and HCV treatment [65.4% diagnosed MSM ever treated (2018)]. During 2020, HCV testing decreased by 59.1% due to the COVID-19 pandemic and was assumed to gradually rebound by 2025. We modelled the decrease in chronic HCV prevalence and HCV incidence due to current levels of treatment by 2022 and 2030.

Results: In 2015, chronic HCV prevalence and HCV incidence were estimated at 15.5% (95%CI: 9.4-21.9) and 1.9/100 person-years (95%CI: 0.8–3.5) among MSM-IDU, respectively, and much lower among MSM with no past-year injecting (MSM non-IDU: 3.6% (95%CI: 2.8-4.2) and 0.2/100 person-years (95%CI: 0.1–0.3)) [Figure]. With current treatment, our model estimates that chronic HCV prevalence and HCV incidence have decreased by 68.4% (95%CI: 60.7-78.7) and 70.5% (95%CI: 62.3-80.0) over 2015-2022 in MSM-IDU, respectively, and will decrease by 90%-92% over 2015-2030 in both, MSM-IDU and MSM non-IDU.

Conclusion: Despite a high burden of HCV in MSM-IDU in San Francisco in 2015 and a reduction in HCV testing due to the COVID-19 pandemic, we estimate that HCV incidence will decrease by >80% over 2015-2030, achieving WHO elimination targets. Results likely reflect San Francisco's multilayered efforts to increase HCV service access for marginalized populations.

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