

MODELLING THE IMPACT OF THE CARE CASCADE AMONGST YOUNG PEOPLE WHO INJECT DRUGS IN SAN FRANCISCO

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Background:

Young adult (18-30 years) people who inject drugs (YPWID) experience the highest hepatitis C virus (HCV) prevalence, but treatment remains disproportionately low. We evaluated progress toward achieving WHO HCV elimination goals by modelling the current HCV care cascade (CC) and how changes in accessing testing and treatment affect HCV incidence among YPWID in San Francisco.

Methods:

We developed a dynamic HCV transmission model among PWID, parameterized and calibrated to various biobehavioural survey datasets from San Francisco, including 2018 estimates for the coverage of opioid substitution therapy (51%), prevalence of unstable housing (74%) and antibody-prevalence among PWID (77%). The model included CC estimates for YPWID: 63% of infections RNA-confirmed, 72% aware of their status and 33% ever initiating treatment. Continuing this existing CC, we modelled likely progress towards achieving elimination goals ($\geq 80\%$ reduction in incidence over 2015-2030) and interim progress by 2025. We also estimated the impact of removing current testing and treatment from 2021.

Results:

Continuing the current CC, the model projects the elimination goals will be met among YPWID and PWID over 2015-2030, with incidence among YPWID decreasing by 92.4% (95% credibility interval [95%CrI]:83.4–95.8%). Over 2015-2025, the model projects an 81.4% (71.6–86.8%) reduction in HCV incidence, from 15.6 per 100 person-years (/100pyrs) (10.9–21.3) in 2015 to 3.0/100pyrs (1.7-5.2) in 2025. Over this period, the model projects 1,848 (1,270–2,795) YPWID will have been diagnosed with chronic infection and 1,059 (404–1,787) will have been treated. Removing current testing and treatment from 2021 decreases the impact on incidence, reducing only by 58.0% (48.0–64.0%) over 2015-2025, to 6.6/100pyrs (4.2–10.9) in 2025, with incidence increasing to 7.1/100pyrs (95%CrI:4.4–12.0) by 2030.

Conclusion:

Results indicate that the elimination goals are achievable with the current care cascade, however continued engagement with services is key to targets being met.

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