

# Systematic review and meta-analysis of sex and gender differences in the HCV cascade of care among people who inject drugs

## Authors:

Larney S,<sup>1,2</sup> Kronfli N,<sup>3</sup> Maheu-Giroux M,<sup>4</sup> Valerio H,<sup>5</sup> Zolopa C,<sup>2</sup> Vakili F,<sup>1</sup> Udhesister S,<sup>1</sup> Levinsson, A.<sup>2</sup>

<sup>1</sup>Department of Family Medicine and Emergency Medicine, Université de Montréal, <sup>2</sup>Centre de recherche du Centre Hospitalier de l'Université de Montréal, <sup>3</sup>Department of Medicine, Division of Infectious Diseases, McGill University Health Centre, <sup>4</sup>Department of Epidemiology and Biostatistics, School of Population and Global Health, McGill University, <sup>5</sup>The Kirby Institute, UNSW Sydney

**Background:** Sex (a biological attribute) and gender (a socially constructed identity) differences in HCV testing and treatment among people who inject drugs may influence the effectiveness of HCV elimination programs. We aimed to quantify sex- and gender-specific differences in HCV testing, direct acting antiviral (DAA) treatment uptake and completion, sustained viral response (SVR), and re-infection.

**Methods:** We conducted a systematic review and random effects meta-analyses of sex- and gender-specific data on HCV among people who inject drugs. Given variable measurement and reporting of sex and gender in primary studies, it was necessary to assume that the two were congruent in meta-analyses.

**Results:** Women who inject drugs (WWID) were more likely than men who inject drugs (MWID) to have ever been tested for HCV (9 studies, risk ratio [RR] 1.10, 95% confidence interval [CI] 1.00-1.21), but WWID diagnosed with HCV were less likely than MWID with HCV to start DAA treatment (6 studies, RR 0.90, 95% 0.84-0.96). There was no evidence of a sex/gender difference for DAA treatment completion (4 studies, RR 0.93, 95% CI 0.79-1.10), SVR (9 studies, RR 0.93, 95% CI 0.82-1.05), or re-infection rates among those treated (8 studies, RR 1.14, 95% CI 0.72-1.79)

**Conclusion:** There are specific steps along the HCV care cascade where differences exist between men and women. Differences in testing (lower in men) and DAA treatment (lower in women) are likely to be linked to gender rather than sex. Work is needed to understand the mechanisms underlying gender differences, and to understand how differences at each step of the cascade of care may compound to influence population prevalence and incidence, and progress towards elimination. HCV elimination programs need to address gender differences and inequality to ensure an effective and sustainable response that leaves no one behind.

**Disclosure of Interest Statement:** Sarah Larney has received advisory board fees from Gilead Sciences. Nadine Kronfli has received research funding from Gilead Sciences, advisory fees from Gilead Sciences, Viiv Healthcare, Merck and Abbvie, and speaker fees from Gilead Sciences, Abbvie and Merck.