

A COST-EFFECTIVE STRATEGY TO REACH THE WHO HEPATITIS C VIRUS (HCV) ELIMINATION TARGET IN MEN WHO HAVE SEX WITH MEN IN THE UK : A 90% DECREASE IN HEPATITIS C INCIDENCE BY 2030

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Background:

Routine pre-exposure prophylaxis (PrEP) and post-HIV diagnosis appointments provide low-cost HCV-screening opportunities amongst men who have sex with men (MSM), catalysing WHO 2030 elimination targets of reducing hepatitis C (HCV) incidence by 90%.

Methods:

We developed a UK-based deterministic model of HCV/HIV transmission, incorporating biological and behavioural heterogeneities (including serosorting and injection drug use). We calibrate to 5.9% HIV prevalence, 10.0% active HCV among HIV-positive MSM and 1.6% among HIV-negative MSM. We assessed the effect of scaling-up PrEP to 12.5% coverage amongst HIV-negative MSM (versus no PrEP) on HCV incidence over 2018-2030, assuming 86% HIV-efficacy. We evaluated the impact over 2018-2030 of enhanced HCV screening with rapid HCV treatment within 6-months of diagnosis versus baseline of 28-months. Enhanced screening strategies included 3, 6 or 12-monthly (versus symptomatic after 10-years) in PrEP users, 6-monthly (versus 12-monthly) in HIV-diagnosed MSM and symptomatically in remaining MSM. Each strategy's mean incremental cost-effectiveness ratio (ICER) was estimated until 2030 compared to status quo screening. We incorporated HCV screening costs for antibody (£10.22) and RNA tests (£45.57) and HCV treatment drug costs (£15,000) plus other diagnostics (£807.80), staff (£57.09) and additional HCV-care costs.

Results:

PrEP scale-up decreases HCV incidence by 13.3% due to 23.3% reduced HIV prevalence and thus decreasing HIV/HCV co-infection. Rapidly treating and screening PrEP-users for HCV 12, 6 and 3-monthly, overall decreases HCV incidence 42.6%, 46.0% and 47.8%. Combined with rapid treatment and 6-monthly screening in HIV-diagnosed MSM, HCV incidence decreases 77.9%, 81.1% and 82.7%. Additional universal rapid treatment, reduces incidence 90.3%, 91.4% and 92.0%, with mean ICERs of £7,200, £8,200 and £10,300 per quality adjusted life year (QALY), thus cost-effective under the UK willingness to pay threshold (£20,000/QALY).

Conclusion:

Increased screening in PrEP-users, HIV-diagnosed MSM and universal rapid HCV treatment is highly cost-effective and allows achievement of WHO targets within MSM.

Declaration of interests:

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