

INVESTIGATING THE IMPACT OF SCALING-UP SCREENING, TREATMENT, AND PREVENTION INTERVENTIONS TARGETING PRIORITY GROUPS FOR HEPATITIS C VIRUS ELIMINATION IN PAKISTAN

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Background:

Pakistan has the second-largest hepatitis C virus (HCV) burden worldwide. Despite increasing access to highly effective direct-acting antiviral (DAA) HCV treatment, low diagnosis and referral rates present challenges to treatment scale-up to reach the World Health Organization (WHO) elimination targets of reducing HCV incidence by 90% and HCV-related mortality by 65% by 2030.

Methods:

We developed a dynamic HCV transmission model for Pakistan incorporating screening and treatment, and calibrated to HCV sero-prevalence data from a national survey in 2007 (4.8%), surveys among people who inject drugs (PWID, 56-69%), and HCV prevalence trends between 1994-2014 from blood-donor data. At baseline we assumed current global average referral rates (7% of HCV-diagnosed patients initiate treatment). We projected HCV-burden, including incidence, prevalence, and mortality through 2030, and estimated the impact of screening, DAA-treatment, and prevention interventions to achieve WHO HCV-elimination targets.

Results:

At current referral rates, general population screening at 15% annually (~31 million individuals tested each year) will result in 320,000 annual treatments, with 4 infections averted-per-1000 antibody screenings (IA/1000Ab), and 430-per-1000 treatments (IA/1000T), leading to a modest 21% reduction in incidence, and mortality rising by 13% from 2016-2030.

Maintaining screening numbers, but scaling-up referral rates to 50% will double treatment numbers (660,000 treatments/year), triple infections averted-per-screening (13 IA/1000Ab), increase infections averted-per-treatment by 35% (580 IA/1000T), and reduce incidence by 74% and mortality by 49% from 2016-2030.

Lastly, if screening also covers 80% of PWID and prevention interventions halve PWID-related transmission risk, then HCV-incidence will decrease by 89% and mortality by 52% – close to achieving the elimination targets. This intervention requires fewer treatments (620,000/year), with more infections averted-per-screening (15 IA/1000Ab) and per-treatment (770 IA/1000T).

Conclusion:

Substantial scale-up of screening, referral, treatment, and prevention interventions, especially targeting priority groups such as PWID, are required to maximise impact and achieve WHO-HCV elimination in Pakistan.

Disclosure of Interest Statement:

Nothing to disclose.