The potential impact of increased testing for HIV and syphilis among men who have sex with men in Jakarta, Indonesia

Authors:
Hui BB[1], Bavinton B[1], Petoumenos K[1], Regan D[1], Gray RT[1]

[1]The Kirby Institute, UNSW Sydney

Background:
Men who have sex with men (MSM) in Jakarta, Indonesia, experience high rates of HIV and syphilis, with the incidence of both infections exceeding 8 per 100 person-years in 2020. Co-infection increases transmission risks, highlighting the need for improved control measures. Although overall STI testing rates remain low, significant progress has been made in expanding HIV testing in Jakarta through targeted outreach interventions. Using mathematical modelling, we explore the potential impact on the incidence and prevalence of both STIs if HIV/syphilis testing coverage among MSM is increased.

Methods:
An individual-based model was developed to simulate the overlapping epidemics of HIV and syphilis among MSM in Jakarta, accounting for the heightened risk of co-infection. The effect of an increase in the proportion of MSM undergoing annual HIV/syphilis testing (from the baseline level of 34%) on the incidence and prevalence of HIV and syphilis was determined through model simulations over a five-year period.

Results:
Increasing annual testing coverage from 34% to 60% is predicted to result in a cumulative 13% reduction in HIV and a 6% reduction in syphilis infections over a five-year period compared to a status-quo scenario. Additionally, this improvement led to a 27% reduction in AIDS cases and a 35% decrease in tertiary syphilis prevalence. Further increasing testing coverage to 90% resulted in a 29% reduction in HIV and a 15% reduction in syphilis infections over the same period and corresponding decreases in tertiary syphilis prevalence and AIDS cases.

Conclusion:
Increasing annual HIV/syphilis testing coverage could lead to a significant reduction in the incidence and prevalence of HIV and syphilis among MSM in Jakarta. Sustaining this increased testing coverage, alongside other improvements such as enhanced access to diagnostic kits and treatment drugs, will be crucial to reduce the burdens of HIV and syphilis within this population.

Disclosure of Interest Statement:
The Kirby Institute is funded by the Australian Government Department of Health and is affiliated with the Faculty of Medicine, University of New South Wales. The views expressed in this publication do not necessarily represent the position of the Australian Government.