

PRIORITIZATION, COVERAGE, AND RAPID SCALE-UP ARE KEY TO MAXIMIZING THE IMPACT AND COST-EFFECTIVENESS OF PRE-EXPOSURE PROPHYLAXIS (PREP) FOR HIV PREVENTION PROGRAMS IN AUSTRALIAN GAY MEN

Gray RT¹, Zablotska I¹, Wilson DP², Holt M³, Guy R¹, Prestage G¹, Wright EJ^{2,4,5}, Whittaker B⁶, Paynter H⁷, O'Donnell D⁷, Grulich A¹

¹ The Kirby Institute, UNSW Sydney, Sydney, Australia

² The Burnet Institute, Melbourne, Australia

³ Centre for Social Research in Health, UNSW Sydney, Sydney, Australia

⁴ Department of Infectious Diseases, The Alfred Hospital and Monash University, Melbourne, Australia

⁵ Peter Doherty Institute of Infection and Immunity, University of Melbourne

⁶ National Association of People with HIV Australia (NAPWHA), Sydney, Australia

⁷ Australian Federation of AIDS Organizations, Sydney, Australia

Background: Pre-exposure prophylaxis (PrEP) in combination with other prevention programs could substantially reduce new HIV infections in Australia. Currently PrEP access is only available via personal importation or state government funded PrEP access/research programs. In the context of efforts to list PrEP on the pharmaceutical benefits scheme, we assessed the cost-effectiveness of PrEP programs.

Methods: We developed a HIV transmission model which categorised gay and bisexual men (GBM) as high-, medium- and low-risk according to Australian PrEP guidelines and was calibrated to 2000-2015 data. We estimated the cost-effectiveness of several PrEP use and roll-out scenarios over 2016-2030. Cost-effectiveness was calculated using quality adjusted life years (QALYs), non-subsidized costs of providing PrEP (estimated at \$10,250/year) and HIV treatment and care costs for various discounting rates and \$30,000, \$60,000 and \$90,000 willingness-to-pay thresholds.

Results: If 90% of high-risk GBM took PrEP with high adherence and no reductions in condom use then we estimate 9,540 (5,160-13,080) additional HIV infections would be averted by 2030 with a unit cost of \$3,750-\$6,170 per year needed for cost-effectiveness. If 90% of all HIV-negative GBM took PrEP then an additional 1,790 (1,480-2,580) infections would be averted with a unit cost of \$1,190-\$1,940 required for cost-effectiveness. Higher coverage and rapid scale up among high-risk GBM both increased impact. Reductions in condom use would not decrease the impacts of PrEP provided high coverage is maintained and adherence remained > 90%.

Conclusion: Scaling-up PrEP access to GBM in Australia would lead to substantial reductions in new infections but would only be cost-effective if the annual unit cost was 26-60% of the current non-subsidized price, depending on the usage scenario and willingness to pay threshold selected. Maximum impact would be achieved with high coverage and rapid scale-up, highlighting the importance of ensuring access is equitable, sustainable and affordable across Australia.

Disclosure of interest statement:

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