Abstract:

OBJECTIVES: We developed a pragmatic modelling approach to estimate the impact of treatment as prevention (TasP); outreach testing strategies; and pre-exposure prophylaxis (PrEP) on the epidemiology of HIV and its associated pharmaceutical expenses.

METHODS: Our model estimates the incremental health (in terms of new HIV diagnoses) and budget impact of two prevention scenarios (outreach+TasP and outreach+TasP+PrEP) against a 'no additional prevention' scenario. Model parameters were estimated from reported Belgian epidemiology and literature data. The analysis was performed from a healthcare payer perspective with a 15-year-time horizon. It considers subpopulation differences, HIV infections diagnosed in Belgium having occurred prior to migration, and the effects of an ageing HIV population.

RESULTS: Without additional prevention measures, the annual number of new HIV diagnoses rises to over 1350 new diagnoses in 2030 as compared to baseline, resulting in a budget expenditure of €260.5 million. Implementation of outreach+TasP and outreach+TasP+PrEP results in a decrease in the number of new HIV diagnoses to 865 and 663 per year, respectively. Respective budget impacts decrease by €20.6 million and €33.7 million.

CONCLUSION: Foregoing additional investments in prevention is not an option. An approach combining TasP, outreach and PrEP is
most effective in reducing the number of new HIV diagnoses and the HIV treatment budget. Our model is the first pragmatic HIV model in Belgium estimating the consequences of a combined preventive approach on the HIV epidemiology and its economic burden assuming other prevention efforts such as condom use and harm reduction strategies remain the same.