Poster number: P3-K9

What will it take for Eswatini to achieve the goal of Ending the HIV Epidemic by 2030? An allocative efficiency analysis

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Background

Eswatini has the highest worldwide HIV/AIDS prevalence at 24% with nearly 200,000 individuals on Anti-Retroviral Therapy (ART). HIV/AIDS domestic spending is >60% externally funded. With declining HIV/AIDS funding globally, countries need to identify the optimal mix of HIV interventions to avert new infections within available resources. We used an allocative efficiency model to evaluate whether alternative HIV/AIDS portfolios could enable Eswatini to meet the Ending the HIV Epidemic (EHE) goal of >90% reduction in HIV incidence from 2010 through 2030.

Methods

Using Eswatini national demographic data and expenditure data on clinical, behavioural, and public health HIV interventions, we employed a validated HIV transmission model to simulate the effects of HIV interventions on diagnosis, treatment, viral load suppression, infections averted, life years gained, quality-adjusted life years (QALYs) gained, and costs for the Eswatini adult population from 2022 through 2030.

Starting from 2022, eleven alternative combinations of expanding coverage to goal levels were simulated. These included: voluntary male medical circumcision (VMMC), community testing (CTC), oral pre-exposure prophylaxis (PrEP), long-acting PrEP (LA), defaulter tracing (DT), HIV self-testing (HST), index tracing and testing (IT), the Determined, Resilient, Empowered, AIDS-free, Mentored and Safe (DREAMS) partnership, risk communication and behavioural change (RCBC), commodity and community distribution (CCD), and condom distribution and promotion (Con). Effectiveness of interventions was obtained from published reports.

Results

Without changes in the status quo, Eswatini will be delayed in meeting the EHE goal. With additional funding USD $8M toward scaling up HST and LA-PrEP targeting the most at-risk groups, Eswatini will meet the EHE goal by 2030. With perfectly efficient reallocation, that is, diverting resources from RCBC, DREAMS, oral PrEP, and CCD towards LA-PrEP, HIV self-testing, and defaulter tracing, Eswatini may meet the EHE goal at no additional cost.

Conclusions

Eswatini can meet the EHE goal by 2030 if funding allocation is prioritized towards an optimally efficient mix of HIV interventions.

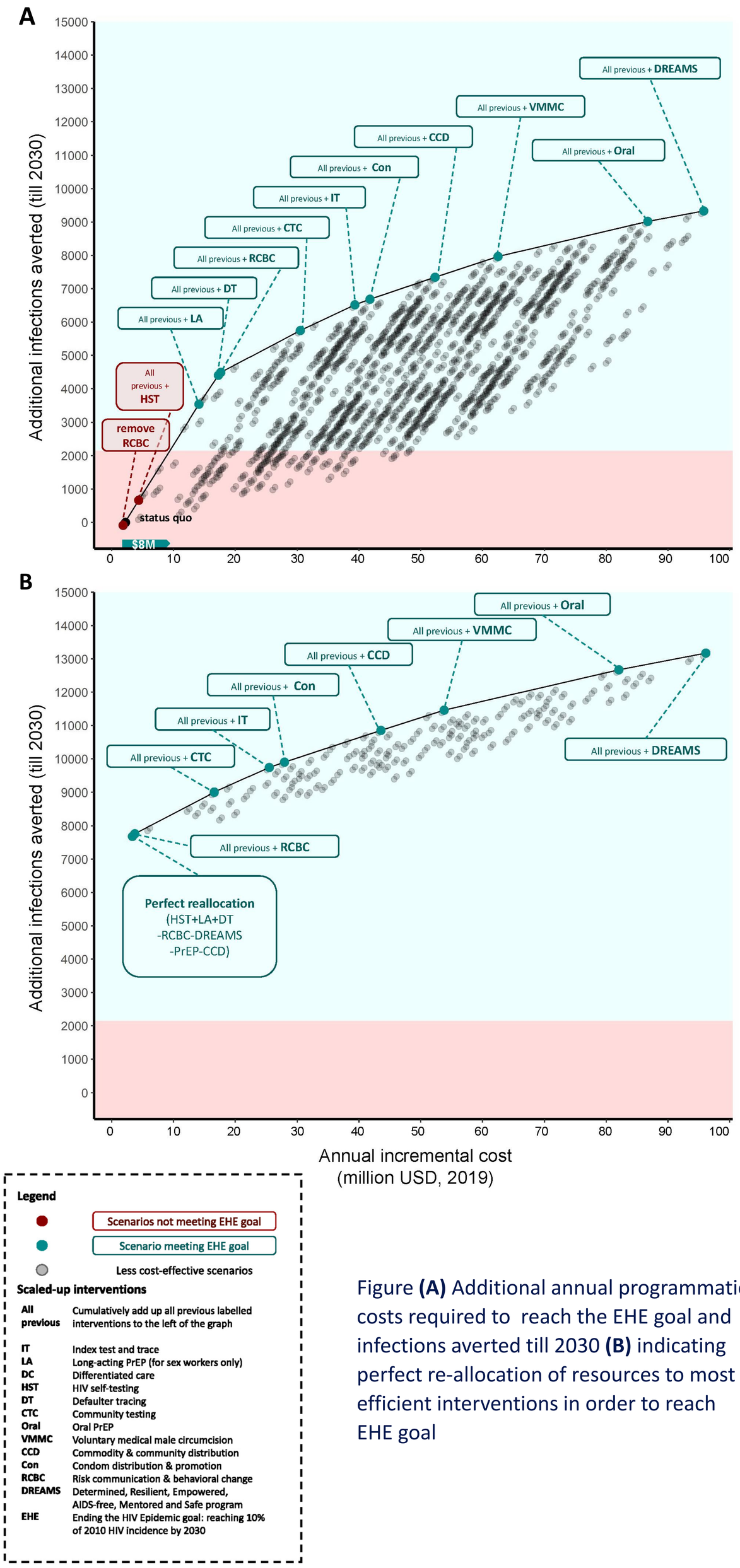

Figure **(A)** Additional annual programmatic costs required to reach the EHE goal and infections averted till 2030 **(B)** indicating perfect re-allocation of resources to most efficient interventions in order to reach EHE goal

Poster Prepared for the Word Congress of Epidemiology 2024 held in Cape Town, South Africa (24-27 September)

This poster was made possible with support from National Institutes of Health (NIH) National Institute of Alcohol Abuse and Alcoholism (NIAAA) funding to New Yok University (prime award 5R01AA027481-05) and ICAP at Columbia University (sub-award 9-A1-00-1001516). The contents are the responsibility of the project teams and do not necessarily represent the views of NIH/NIAAA.

*A major global health organization with projects in more than 40 countries, ICAP at Columbia University works to transform the health of populations through innovation, science, and global collaboration. Since its founding in 2003 at the Columbia Mailman School of Public Health, more than 2.6 million people have received HIV care through ICAP-supported programs. Learn more online at **icap.columbia.edu***