AIDS 2008, Mexico City
Abstract THPE0295

Identifying context appropriate strategies for introducing microbicides into different settings in order to maximise impact

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Background: This study uses epidemiological and economic modelling to estimate the impact of alternative potential strategies for microbicide introduction into two communities in contrasting settings with different behavioural and epidemiological profiles: (1) a southern Indian community (where the HIV epidemic is mostly concentrated among high-risk groups), and (2) an urban community in South Africa (with a generalised HIV epidemic).

Methods: Existing evidence regarding the rate, and influencing factors, in the introduction of new health technologies was reviewed. Country-level workshops were held in both settings to elicit potential strategies for future introduction of microbicides from key informant discussions. An age-structured mathematical model of HIV/STI transmission was developed, parameterised and fitted using data from (1) Mysore in Karnataka, India, and (2) Gauteng province in South Africa.

Results: For both communities, the potential impact of a microbicide on the spread of HIV is compared in the main analysis over a 3-5 year period and over 10 years, for four linked HIV-efficacy and consistency scenarios. Coverage is assumed to increase over time in 'low' and 'high' uptake scenarios for six different community-level introduction strategies (three in each setting). These include targeted provision (e.g. through sex worker programmes or integration into HIV testing services or distribution to youth), and more widespread distribution strategies (e.g. marketing as a vaginal health product for all women or integrating into contraceptive provision). Findings from the sensitivity analysis illustrate how the conclusions from the main analysis are influenced by HIV-efficacy and consistency, bi-directional effects and STI activity, and the stage of the HIV epidemic.

Conclusions: The analysis illustrates how the impact of a microbicide is related to the epidemiological profile of a setting, product profile, introduction strategy, coverage and individual use patterns. Introduction strategies need to be tailored to the specific setting in order to maximise microbicide impact.

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