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His research interests include Health Economics, Outcome Research and Decision Tree Models applied to Nosocomial Infections, Tropical Diseases and HIV/AIDS.

## ISID Scientific Exchange Fellowship Program ~ Final Report

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### Economic Impact of Introducing HIV/AIDS Guidelines into the Colombian National Drug Formulary

**Background:** Colombia has >165000 people infected with human immunodeficiency virus (HIV). In 2008, the World Health Organization (WHO) estimated only 40% had antiretroviral therapy coverage. Colombia's AIDS treatments Guidelines became available in 2006 and are currently being used by physicians in their daily practice. However, these guidelines have not yet been evaluated with respect to their relative costs and effectiveness.

**Objective:** To project the life expectancy, cost, and cost-effectiveness associated with eleven antiretroviral strategies used in Colombia, to inform treatment programs.

**Methods:** A Markov model was developed using TreeAge® Pro-2008 and clinical experts. Success probabilities were derived from published randomized controlled trials. Drug costs were obtained from the 2008 Drug Price Guideline from Bogotá and the ISS 2008 Manual. Hospitalization costs were obtained from the West Kennedy Hospital, Bogotá 2006/2007 database, adjusted to 2008. One-way and two-way sensitivity analyses were performed to test the model's robustness by varying clinical success rates and costs of antiretrovirals. Probabilistic sensitivity analyses were also performed using Monte Carlo simulations.

**Results:** Based on our Markov model, AZT-3TC-efavirenz had the lowest cost of treatment (USD \$12.09 per day) and the highest rate of success (69%). It was the primary cost-effective HAART for HIV/AIDS in Colombia. AZT-3TC-efavirenz dominated all other HAART treatments. Results were generally robust within ranges tested.

**Conclusions:** In Colombia, antiretroviral therapy will lead to major survival benefits and is cost-effective by World Health Organization criteria. The availability of second-line regimens will further increase survival, but their cost-effectiveness depends on their relative cost compared with first-line regimens. ❖

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