

Making Better Decisions: Policy Modeling for AIDS and Drug Abuse

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Abstract

Despite many recent advances in prevention and treatment interventions for HIV and substance use, policymakers and providers have been forced to confront a persistent insufficiency of funds and to make difficult choices from among competing claims on scarce resources. In this renewal, we will continue our work to address emerging questions about global HIV prevention, treatment, and priority setting in substance-using populations. We will extend our prior epidemiologic modeling work by assessing **portfolios** of prevention and treatment interventions, by addressing these interventions in the context of **co-epidemics** (HIV, hepatitis C virus infection, and tuberculosis), and by developing **resource allocation tools**. The goal of our work is to use epidemiologic modeling to help decision makers optimize population health by providing information on the comparative effectiveness, cost-effectiveness, and affordability of alternative portfolio investments. Our aims are:

1. To **estimate production functions** that characterize the relationship between program expenditures and health-related outcomes, such as reductions in transmission risk for prevention programs and the delivery of services for treatment programs.
2. To develop model-based methods to **translate the behavioral and biological impact of HIV-related interventions into epidemic outcomes**, such as infections averted and years of life saved.
3. To **determine how best to estimate health outcomes, costs, and cost-effectiveness** of HIV and substance use interventions (for example, in the presence of co-epidemics).
4. To **assess the individual- and population-level effectiveness, cost, cost-effectiveness, and budget impact of specific interventions** aimed at preventing and treating HIV and substance use and related co-epidemics (e.g., HIV, HCV, and tuberculosis).
5. To **inform the allocation of societal resources by examining the effectiveness and cost-effectiveness of portfolios of prevention and treatment interventions** in the context of the regional epidemiology of disease.
6. To **develop practical resource allocation tools** for policymakers to assist them in making informed investments of resources in HIV and substance use treatment and prevention programs. Our proposed research will develop innovative epidemiologic modeling methods for assessing portfolios of interventions; critically evaluate promising prevention and treatment interventions; advance the state of the art in HIV planning and policy modeling; and provide planners with innovative tools to assist them in informed allocation of scarce resources for HIV and substance use prevention and treatment. The proposed work will enable us to have broad impact on HIV and substance use policy in the U.S. and internationally.