Healthcare Systems Engineering & Operations Research
Research Colloquia

Center for Health Organization Transformation
Northeastern University, Boston MA

“Allocating Resources for HIV Prevention and Treatment Scale Up”

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Abstract
With 33 million people living with HIV worldwide and 2.6 million new infections occurring annually, additional HIV prevention and treatment efforts are urgently needed. However, available resources for HIV control are limited and must be used efficiently to gain the greatest health benefit. We develop a model to determine the optimal resource allocation between expanded HIV prevention and treatment services, and we apply the model in two different settings, Uganda and Russia. As part of these applications we develop a novel approach for estimating empirical HIV program production functions, which relate investment in prevention and treatment to changes in transmission rates. Our study provides insights into the important question of resource allocation for a country’s optimal HIV epidemic control and provides a practical approach for decision makers.

Bio
Elisa Long is Assistant Professor of Operations Management at the Yale School of Management. Her research interests include creating decision analytic models to assess the effectiveness and cost-effectiveness of medical interventions. Through developing applied mathematical models of disease transmission and progression, she has evaluated the health and economic implications of public health policies, including HIV-tuberculosis control in India, antiretroviral treatment of drug users in Russia, HIV prevention and male circumcision in South Africa, and HIV vaccination in the United States. She earned a Ph.D. in Management Science and Engineering from Stanford University, and a B.S. in Operations Research and Industrial Engineering from Cornell University.