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Preferential ART Distribution in Rural and Urban Uganda

HIV/AIDS is one of the largest growing problems the world is facing. Even with anti-retroviral therapies (ART), many resource constrained countries are unable to meet the treatment needs of their infected populations. To this extent ART distribution methods need to be developed that prevent most deaths and future infections due to HIV. We have developed a compartment model that tracks the spread of HIV in multiple two sex populations over time in the presence of limited treatment. The model has been fit to represent the HIV epidemic in rural and urban areas in Uganda. The model looks at the spread of HIV among urban and rural regions and observes the effects of preferential treatment to rural areas on the spread of HIV in the country as a whole. We also examine the effects of preferentially treating women to the spread of HIV. We hope to make conclusions on how various preferential treatment strategies will affect the spread of HIV in rural and urban Uganda in the future.

This is a senior thesis project under the supervision of Professor Lisette de Pillis, Professor of Mathematics at Harvey Mudd College in Claremont, California.