Enhancing Equity in Kidney Allocations in the United States

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Abstract
End stage renal disease affects nearly 700,000 people in the United States. Of these individuals, approximately 90,000 are waiting for a kidney transplant. Waiting times vary significantly by region of the country from a low of 1 year (on average) to a high of approximately 4.25 years. Also, access to kidney transplant centers varies significantly across the country. In New York state, patients are an average of 9 miles from a center, while the average is over 75 miles in western states. The goals of this project are (1) to quantify these geographic disparities in more detail, (2) to identify locations for additional transplant centers or satellite programs to reduce the disparities in access to transplant facilities and (3) to outline alternative allocation schemes to promote greater equity in waiting times for transplanted kidneys. Several optimization-based models will be discussed that have been used for these three purposes. Preliminary results will also be outlined.