Does the present allocation of kidney transplants in the US maximize the gain in total life expectancy in the potential recipient population?

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The population of potential recipients of kidney transplants are all ESRD (End Stage Renal Disease) patients on the waiting list. A distribution of transplants is optimal, if it maximizes the sum of all individual gains in life expectancy. If optimal, any single kidney transplanted in any other non recipient on the waiting list rather than in the one who actually received it, will lead to a smaller total gain in life expectancy in the population of potential recipients.
Our data base is a longitudinal subsample of ESRD-patients in the USRDS (United States Renal Data System – the largest such data base) N=11.142 observed between 31.December 1993 until 31.December 2001. Taking into account a variety of socio-economic, behavioural as well as biomedical parameters, we estimated the survival functions of all recipients, as if they had not received a transplant, and of all non recipients, if they had received one. There were inequalities by sex, incidence age, ethnicity, education, but none by employment and family status before onset of ESRD. We found, however, surprisingly strong hints for a suboptimal distribution of kidney transplants under present selection criteria. On average, a recipient would have lost 214 days of life expectancy, had he not received one, while a non recipient would have gained 322 days, had he received one. Actually, the optimal redistribution would have affected only a small subsample of the population at risk, but would have lead there to large gains per head.