"Current Challenges in Kidney Exchange"

ינואר 2013, בשעה 13:30
חדר C228, בניין ארזי-עופר

Abstract

A kidney exchange network establishes a pool of patient-donor pairs, non-directed donors, and patients on the deceased donor waiting lists, and seeks to arrange transplants among this pool. It has been previously shown that for sufficiently large pools of patient-donor pairs, (almost) efficient kidney exchange can be achieved by using at most 3-way cycles, i.e. by using cycles among no more than 3 patient-donor pairs. However, as kidney exchange has grown in practice, cycles among \( n > 3 \) pairs have proved useful, and long chains initiated by non-directed, altruistic donors have proven to be very effective. We explore why this is the case, both empirically and theoretically. We provide an analytical model of exchange when there are many highly sensitized patients, and show that large cycles of exchange or long chains can significantly increase efficiency when the opportunities for exchange are sparse. As very large cycles of exchange cannot be used in practice, long non-simultaneous chains initiated by non-directed donors significantly increase efficiency in patient pools of the size and composition that presently exist. Most importantly, long chains benefit highly sensitized patients without harming low-sensitized patients.

הנכם מוזמנים!

ניתן לראות את העבודה בעמוד הבית של הסמינר: