

Finalv3 - SUBMITTED

Category: Clinical Science - Kidney Deceased Donor Selection

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Title: A Randomized Clinical Trial of Real-time Decision Support During the Evaluation of Abdominal Organ Offers

Background: Organ transplantation is a cost and clinically effective treatment for patients suffering from end-stage organ failure. According to the Organ Preservation Alliance, one in three deaths in the US might be prevented by an organ transplant. One limitation on organ transplantation is the onerous and disorganized assessment of an organ offer to determine donor/recipient match quality. Real-time clinical decision support (CDS) with artificial intelligence may significantly increase access, increase quality, and reduce the time and cost of organ transplantation.

Methods: Procurement and transplant team members utilized a dedicated mobile application for communicating during the organ offer process. The study was conducted with a year-long, three-arm, open-label, randomized clinical trial at 12 leading transplant centers in the USA. The mobile application was enhanced with two different implementations of CDS, static and dynamic. Static CDS consisted of a prediction environment that was unchanged throughout the trial; it predicted survival benefit for each patient in the match sequence and the national and center-specific organ offer acceptance rates. Dynamic CDS was initially a replication of the static CDS environment but the dynamic CDS was modified continuously throughout the trial based on user feedback. The clinical trial was randomized by each incoming organ with a KDPI > 25% into one of three arms: control (no CDS), static CDS, or dynamic CDS.

Outcomes: The investigating team has received early indications of satisfaction and perceived enhancement of medical decisions from directors and surgical leaders at participating centers. This study is ongoing.