Expedited Kidney Allocation: Growth, Earlier Diversion, and Clinical Outcomes

A Summary of a Cohort Study Using Paired Kidney Data, USA 2020–2024

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KEY TAKEAWAY

Expedited (out-of-sequence) kidney allocation increased 17-fold between 2020 and 2024, and organs are being diverted from the standard queue far earlier in the match process — yet patient and graft survival remain comparable to standard allocation, supporting the clinical safety of this strategy for improving organ utilisation.

Original Research

Yu ME, Husain SA, Tucker EG, et al. Expedited Transplant Allocation Using a Paired Kidney Cohort. JAMA Netw Open. 2026;9(3):e260257. doi:10.1001/jamanetworkopen.2026.0257

Context and Purpose

Kidney transplantation is the preferred treatment for patients with end-stage kidney disease, offering superior survival and quality of life compared with long-term dialysis. However, demand for donor kidneys continues to far exceed supply, resulting in prolonged waiting times in many healthcare systems.

To improve utilisation of available organs and reduce the likelihood of viable kidneys being discarded, transplant programmes have increasingly adopted expedited or out-of-sequence allocation. In this approach, kidneys may be offered outside the traditional waiting-list sequence when concerns arise that the organ may otherwise go unused. While this strategy may accelerate organ placement, it has prompted questions regarding transparency, equity of access, and whether allocation outside the standard match-run process influences transplant outcomes.

Study Objective: To identify and compare kidney pairs from the same deceased donor in whom one kidney was transplanted through the standard allocation sequence and the other was transplanted out of sequence — using this paired design to control for donor-related factors and more clearly assess whether the allocation pathway itself influences transplant outcomes.

Study Methodology

This retrospective cohort study analysed data from the Scientific Registry of Transplant Recipients (SRTR) in the United States, covering deceased donor kidney transplants performed between 2020 and 2024. The analysis included 15,602 kidneys recovered from 8,544 deceased donors, with approximately 62% of donors being male and a mean donor age of 44 years.

Kidneys were categorised according to allocation pathway: both kidneys transplanted out of sequence; one kidney transplanted in sequence and the other out of sequence (unilateral OOS — the primary comparison group); or a single kidney transplanted out of sequence.

Primary outcome: Patient survival and graft survival following transplantation

Secondary outcomes: Trends in OOS allocation volume, sequence position at diversion, recipient characteristics, and refusal code patterns over time

Study Findings

In a national registry analysis of 15,602 kidneys from 8,544 deceased donors, expedited kidney allocation increased dramatically over the study period, yet patient and graft survival remained comparable between kidneys transplanted within and outside the standard allocation sequence.

Of the 8,544 donors included, just over half (50.5%) had one kidney transplanted out of sequence. Unilateral out-of-sequence allocation accounted for 38.2% of all OOS transplants and increased rapidly: from 97 cases across 15 organ procurement organisations in 2020 to 1,698 cases across all 56 organisations in the United States by 2024.

The point in the match run at which kidneys were diverted also changed markedly. In 2020, kidneys placed out of sequence were first refused at a median position of approximately 393 candidates on the

waiting list. By 2024, this had fallen dramatically to around the 28th position, indicating that organs were increasingly being allocated outside the standard sequence much earlier in the process.

Over the same period, donor-related reasons for refusal declined by approximately 10–15%, suggesting that decisions to allocate kidneys through expedited pathways may increasingly be driven by logistical considerations rather than donor quality alone.

Recipients of out-of-sequence kidneys differed from those receiving kidneys through the standard match run. They tended to be slightly older (median age 60 vs 57 years), were more frequently male, and more likely to be White or Asian. They were also more likely to have private health insurance (29.1% vs 23.0%) and to undergo pre-emptive transplantation prior to dialysis (17.1% vs 10.2%).

Despite these differences, clinical outcomes remained comparable. In adjusted analyses, unilateral out-of-sequence transplantation was not associated with a statistically significant difference in patient survival (hazard ratio 0.84; 95% CI 0.70–1.02) or graft survival (hazard ratio 0.87; 95% CI 0.70–1.08) compared with kidneys transplanted within the standard allocation sequence.

Patient survival: HR 0.84 (95% CI 0.70–1.02)- not statistically significant

Graft survival: HR 0.87 (95% CI 0.70–1.08)- not statistically significant

Clinical Takeout

Taken together, these findings suggest that expedited kidney allocation can be used without compromising transplant outcomes. In this paired-kidney analysis, both patient and graft survival were similar regardless of whether kidneys were transplanted through the standard match run or through expedited pathways. This supports the clinical safety of transplanting organs allocated outside the traditional sequence, particularly when doing so may help prevent organ discard.

However, the study also raises important questions regarding how and when expedited allocation is used. The rapid expansion of unilateral out-of-sequence allocation suggests that logistical or institutional factors may increasingly influence allocation decisions.

The findings also highlight potential concerns regarding equity. Recipients of out-of-sequence kidneys were more likely to have indicators

associated with greater healthcare access, including private insurance and pre-emptive transplantation. While expedited allocation may improve overall organ utilisation, these observations underscore the importance of transparent governance and clearly defined allocation criteria to ensure transplant systems remain equitable.

Key insight: *Expedited kidney allocation is clinically safe. Outcomes are comparable to standard pathways, but the growing use of earlier diversion and the recipient demographic disparities observed warrant transparent allocation governance to protect equitable access.*

What This Means for South African Practitioners

These considerations are particularly relevant in the South African context, where transplantation takes place within a resource-constrained healthcare environment characterised by limited organ availability and restricted access to long-term dialysis. Waiting times for deceased donor kidneys may extend for many years, and access to chronic dialysis in the public sector is often constrained by capacity limitations.

In this setting, each successful kidney transplant has broader implications for the healthcare system. Beyond improving survival and quality of life for the recipient, transplantation may also free a dialysis slot for another patient who might otherwise be unable to access life-sustaining treatment.

Innovations in donor matching and allocation therefore have considerable potential to expand transplant opportunities in South Africa. One promising approach is kidney paired donation, in which incompatible donor–recipient pairs are matched with other pairs to enable compatible exchanges. Early paired-donation initiatives in South Africa have demonstrated that such exchanges are feasible and can facilitate transplantation for patients who previously had limited treatment options.

Ultimately, the findings of this study reinforce a broader principle: improving access to transplantation will depend not only on increasing donor numbers but also on optimising allocation systems. For healthcare systems with constrained resources, such as South Africa's, transparent allocation policies and innovative approaches such as kidney exchange programmes may play an important role in ensuring that the limited supply of donor organs benefits as many patients as possible.

Original Study

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