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Reviving Living Donor Kidney Transplantation in Australia

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ABSTRACT

Australia's rate of living donor kidney transplantation has stagnated. In 2024, there were 253 living donor kidney transplants, down from 354 in 2008, with the living donor rate falling to 9.5 donors per million population—well below peer nations. Despite growth in deceased donation, waiting list times continue to lengthen and can now reach 6–7 years for some groups, reflecting the rising numbers of Australians living with kidney failure. Access is unequal: First Nations people receive few living donor transplants; women are more likely to donate than men but are less likely to receive a living donor transplant; and people from lower socio-economic groups are disadvantaged. Barriers include information gaps, limited multilingual resources, time-intensive workups and financial disincentives. A coordinated reset, supported by national leadership, contemporary guidance, better data and streamlined, culturally safe pathways can restore growth.

JEL Classification: Urologic diseases

1 | Introduction

Living donor kidney transplantation (LDKT) is the optimal treatment for kidney failure, enabling longer graft and patient survival and better quality of life than either dialysis or deceased donor transplantation [1]. Since 2009, when the Australian Government established the national Organ and Tissue Authority (OTA) to lead Australia's organ donation program, there has been a strong emphasis on optimising deceased donation, with research, policy, funding and service development prioritising deceased donation and successfully driving substantial growth [1, 2]. Over the same period, however, LDKT has declined—even as ever more Australians live with kidney failure. Despite the growth in deceased donation, wait times for deceased donor transplantation are long and growing. The median wait time in Australia was 3.2 years (interquartile range [IQR], 1.7–4.5 years) in 2023–2024, having increased 33% from 2.4 years (IQR, 1.3–4.0 years) in 2019–2020. However, there is significant variation by state and blood group; for example, in New South Wales, it is common for individuals with blood group B or O to wait 6+ years [3]. Future growth in overall transplant activity will require restoration and expansion of LDKT, together with continued increases in deceased donation. In this perspective article, we explore the current state of LDKT in Australia, identify why it is underperforming and issue a call to action.

2 | Decline in Living Kidney Donation in Australia

National LDKT has been declining since 2009. In 2024, 253 LDKTs were performed, accounting for 24% of total kidney transplants (Figure 1A,B). This is down from 354 LDKTs in 2008 (44% of total transplants, an average change of −2.1% per year) [1]. Over the same period, deceased donor transplants rose 77% (+3.6% per year), accounting for the full 31% growth in total kidney transplants (+1.7% per year) [1]. Living donors per million population (dpmp)—the international benchmarking standard that normalises for population size and growth—fell from 16.8 dpmp in 2008 to 9.5 dpmp in 2024 [4]. Had the 2008 dpmp rate been maintained, approximately 194 additional LDKTs would have been performed in 2024 and about 2510 additional LDKTs would have been done cumulatively since 2009.

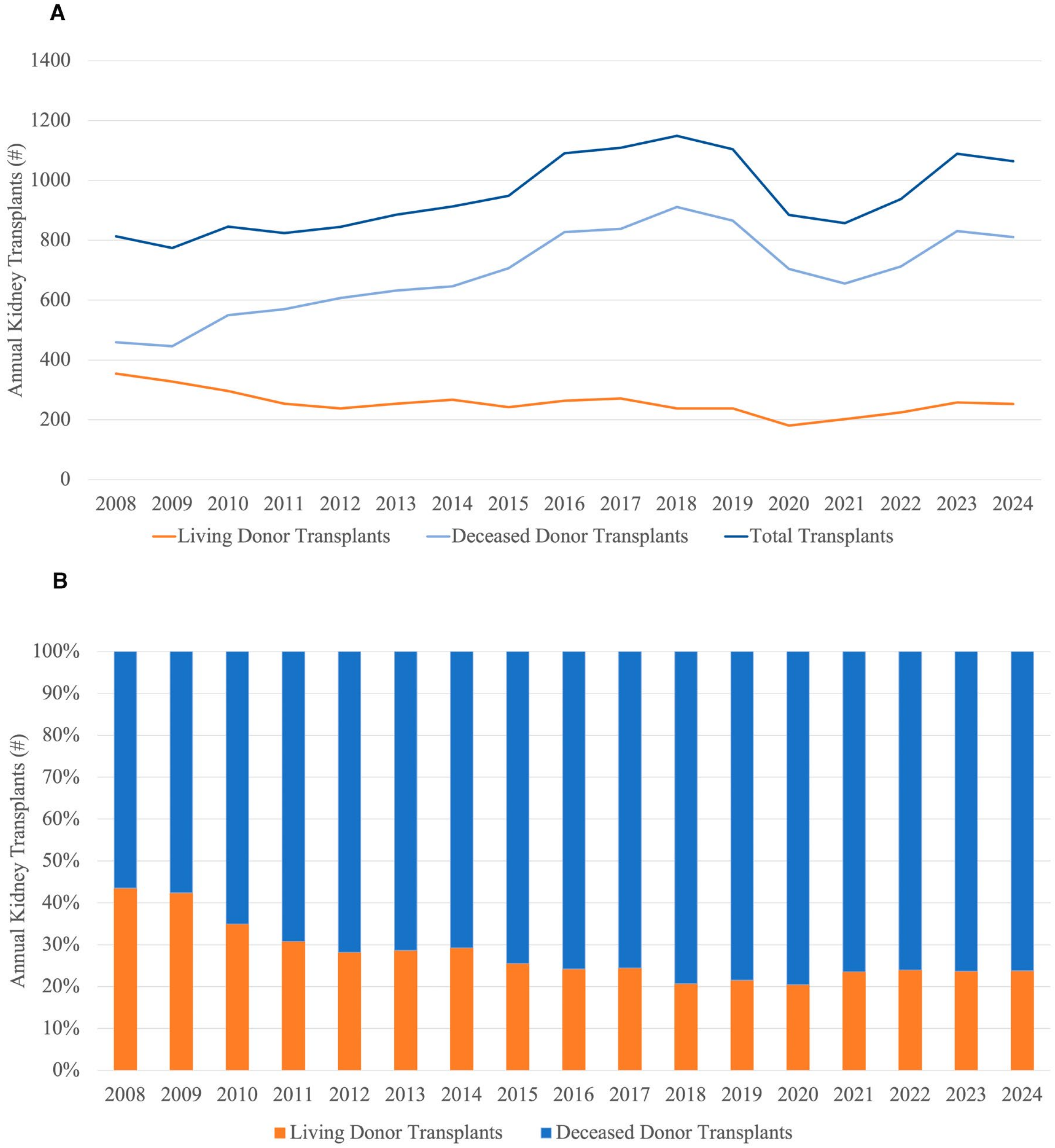

FIGURE 1 | Annual kidney transplants in Australia by donor type: (A) annual number of kidney transplants and (B) proportion of total transplants. *Source*: Data for graphs obtained from the Australia and New Zealand Dialysis and Transplant ANZDATA Registry [1].

The major innovation in LDKT over this period was the development of paired kidney exchange programs. These programs help immunologically incompatible donor–recipient pairs exchange kidneys with other pairs so that more patients can receive a compatible living donor transplant. Pilot programs began in 2007, followed by the Australian paired Kidney eXchange in 2010, which developed into the Australian and New Zealand Paired Kidney Exchange in 2019 [2]. These programs contributed an additional 1–2 dpmp annually [1]; without them, the decline in LDKT would have been even steeper.

As a nearby system with similar demographics and clinical practice, trends in living donation in New Zealand offer a useful comparator. The two countries tracked closely until about 2013, when trajectories diverged: New Zealand increased from 12.9 to 15.7 dpmp between 2013 and 2024, whereas Australia declined from 10.8 to 9.5 dpmp over the same period [4]. The timing aligns with New Zealand's Live Kidney Donation Aotearoa initiative (https://www.kidneydonor.org.nz/) in Counties Manukau, an initiative developed to inform, promote and facilitate living kidney donation. This contrast illustrates the potential impact of targeted and coordinated strategies and investment.

With an LDKT rate of 9.5 dpmp in 2024, Australia lags behind the Netherlands (27.5 dpmp), South Korea (20.5 dpmp), the United States (18.8 dpmp), the United Kingdom (13.9 dpmp) and Canada (12.6 dpmp) [4]. Without understanding and addressing the barriers to LDKT, declines will likely persist, consigning more Australians to prolonged dialysis or to no transplant at all, with substantial loss of length and quality of life and higher health-system costs.

Internationally, LDKT access varies systematically across socio-demographic groups. Women, ethnic minority groups and socio-economically disadvantaged people receive fewer LDKTs than socio-economically advantaged men [5, 6]. Australia mirrors this pattern. In 2023, only two First Nations Australians with kidney failure received an LDKT, representing < 3% of all First Nations transplants, compared with 246 (24%) non-Indigenous LDKT recipients [1]. In New Zealand, Māori have far greater access to LDKT than First Nations Australians: in 2023, 14 Māori received an LDKT, representing 42% of all Māori transplants, compared with 52 non-Māori, non-Pacific transplant recipients (47%) [1]. Australian women comprise about 60% of living donors, yet receive < 40% of LDKTs, patterns that are similar to those reported in New Zealand and globally [7, 8]. Australian women constitute the majority of living kidney donors across every donor–recipient relationship type, including spousal, parental, sibling and child relationships [1]. As recipients, it has been previously shown that Australian women with kidney failure are 16%–19% less likely to receive an LDKT than their male peers [9]. Socio-economic position also affects LDKT rates, with the highest quartile nearly twice as likely to receive an LDKT as the lowest quartile [10]. Comparable associations have not been well described in New Zealand, although geographic inequities have been described, with lower access among people living in rural and remote areas than among those in urban centres [11]. These disparities likely reflect, at least in part, differential access to information, referral and workup pathways, logistics and financial burden, cultural safety and the underlying health status of these communities.

3 | Donor Safety: Strengthening Acceptance Standards and Long-Term Follow-Up

Ensuring the short- and long-term safety of living kidney donors is paramount and core to the viability and sustainability of an ethical national living donor program. Australia lacks contemporary national clinical guidelines for living donor acceptance criteria. The Caring for Australians and New Zealanders with Kidney Impairment (CARI) guidelines for living kidney donors were written in 2010 and have long been withdrawn and archived, leaving both Australia and New Zealand without national guidelines. In contrast, many regions, including the United Kingdom [12] and Europe [13], maintain their own guidelines that are suitable for their local context and that work alongside broad global guidelines [14]. Acceptance criteria for donors wishing to enter the Australian and New Zealand Paired Kidney Exchange were published in 2023, but these are designed to ensure sufficient donor quality for transplantation into a recipient, rather than to define minimum standards for donor safety [15]. In the absence of national clinical guidance, practice varies across centres, creating confusion, inconsistency and potential for bias [16]. Up-to-date guidelines could standardise core assessment elements, improve transparency, reduce inequities in access and strengthen public trust.

The collection of post-donation health outcomes is essential to understand the short- and long-term risks living kidney donors undertake and provide local evidence to support clinical guidelines. The Australia and New Zealand Living Kidney Donor Registry (https://anzorrg.org.au/registries/anzlkd) is tasked with national data collection from living kidney donors in Australia and collects pre-donation demographics and medical data, operative details and annual long-term outcomes. Although pre-donation and operative datasets are relatively complete (~5% missing for most variables), < 3% of living kidney donors in Australia have adequate follow-up data recorded [17, 18]. In the absence of long-term Australian data, clinicians have had to rely on international—primarily from the United States—evidence arising from different donation and health-system contexts. To address this gap, we recently undertook a national linkage of the ANZLKD with the Australia and New Zealand Dialysis and Transplant Registry (ANZDATA), providing the first Australian estimates of kidney failure treated with kidney replacement therapy (KRT) after living donation: among 5291 donors followed for a median of 10.96 years, three commenced KRT (incidence 0.53 per 10,000 person-years), with no events occurring within 10 years of donation [19]. While reassuring, these data confirm that late events can occur more than a decade after donation and demonstrate the value of registry data linkage as a scalable approach to overcome the current gaps in active follow-up. Strengthened registry follow-up and/or data linkage remain essential to inform clinician risk assessment as well as the counselling and consent of potential donors.

4 | Barriers to LDKT Span Recipients, Donors, Clinicians and Systems

LDKT is constrained by interweaving barriers that operate at the level of potential recipients and donors, the clinical workforce and the wider national health and policy environment. At the potential recipient level, awareness of LDKT and its advantages is often low, especially outside transplant centres. Education is frequently delivered alongside advanced CKD and dialysis counselling, diluting the emphasis on LDKT.

There is a lack of easily accessible, evidence-based and up-to-date online information regarding LDKT in Australia. In an era when people often seek initial health information from online resources, this is striking. Many misperceptions exist (e.g., around the need for blood group compatibility and/or age restrictions) and these could be redressed with relevant online education available to individuals of all health-literacy levels. In contrast, New Zealand has a visible, dedicated public-facing living donation resource through Live Kidney Donation Aotearoa (www.kidneydonor.org.nz); similar resources are available in other countries, such as the United States' Living Donor Toolkit (www.livingdonortoolkit.com). These limitations may be especially important for culturally and linguistically diverse communities. About 30% of people with treated kidney failure in Australia were born overseas in non-English speaking countries [20], and these people can be at a particular disadvantage as there are few resources available in languages other than English, even within transplant centres.

Potential donors face their own hurdles. Community awareness of living donation is limited, and reliable, culturally competent information is difficult to find [21]. Donors often describe the workup as opaque, variable between centres and 'time toxic', with multiple appointments spread across sites and days—the burdens are amplified for rural and remote donors, self-employed workers and carers. Financial concerns remain substantial. The Australian Government has developed and recently updated the Supporting Living Organ Donors Program, which aims to reduce the financial burden of donation [22]. This is a step in the right direction, but it does not make donation financially neutral. Reimbursements are capped, income support is tied to minimum wage rather than actual earnings, and administrative burdens are high [22]. In contrast, New Zealand's Compensation for Live Organ Donors compensates 100% of actual wage for 12 weeks [23].

It is essential that healthcare providers across the renal workforce have the knowledge and are empowered to discuss LDKT with potential donors and recipients. There are insufficient multi-disciplinary services and educational resources focused on LDKT. Evidence-based resources need to be developed, kept up-to-date and be readily available so that the entire renal workforce is capable of discussing LDKT. When clinicians are unable or unwilling to discuss LDKT with people with kidney failure, they become a barrier. Tailored education with evidence-based information and local outcome data are needed.

Australia's policy environment may now be more receptive to change than ever before. The 2024 National Strategy for Organ Donation, Retrieval and Transplantation includes a specific, albeit broad, goal to increase opportunities for living donation [24]. This creates an opening to give LDKT greater priority, but only if this strategic intent is backed by the resources, coordination and service support needed to strengthen living donation activity across state and territory health services, where organ retrieval and transplantation are actually delivered.

5 | Conclusion

LDKT delivers superior survival and quality of life compared with dialysis or deceased donor transplantation, yet Australia's current trajectory is stagnant and inequitable. Reversing this trend will require contemporary donor assessment guidelines, sustained investment in long-term donor follow-up through strengthened registry data and linkage, accessible and culturally safe public information, more efficient assessment pathways, workforce capability across the renal sector and donor reimbursement that moves closer to financial neutrality. The gains achieved in deceased donation show what system-wide focus and investment can deliver; applying the same approach to LDKT is now essential to increase transplant access, reduce inequities and improve outcomes for more Australians.

Author Contributions

Melanie Wyld: conceptualisation, writing (original draft). **Nicole M. Isbel:** conceptualisation, writing (review and editing). **Kate Wyburn:** conceptualisation, writing (review and editing).

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

This article includes no original data.

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