

# National Kidney Transplant Service

Beaumont Hospital

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Annual Report  
2024



National Kidney  
Transplant Service  
Beaumont Hospital



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## Foreword

For people living with end stage kidney disease, successful kidney transplantation provides many benefits-it significantly increases life expectancy, and provides substantial improvements in overall health and quality of life. The National Kidney Transplant Service (NKTS) is committed to delivering a world-class kidney transplant service to the citizens of Ireland. Testament to this, a remarkable 2,783 people are currently living with and benefiting from a functioning kidney transplant. In early 2024 the NKTS passed the significant milestone of our 6000th kidney transplant.

The National Kidney Transplant Service annual report for 2024 outlines the trends for the kidney transplant waiting pool, as well as kidney transplant outcomes for recipients of deceased and living donors, and paediatric recipients. The progress in kidney transplantation could not occur without the incredible generosity shown by deceased donor families, who selflessly consent to organ donation during a time of grief. Similarly, we are grateful to our living donors who demonstrate immense courage and generosity and make a profound difference in people's lives. The transplant team at NKTS wishes to extend our deepest gratitude to all kidney donors who make the gift of transplantation a reality.

Editorial team:

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# Transplant Numbers

**2,783** **↑2%** 

People living with a functioning  
Kidney Transplant

**Transplants (Deceased Donor)**  
Kidney transplants from deceased donors in 2024



**145**

**Transplants (Living Donor)**  
Kidney transplants from living donors in 2024




**30**

**175**



**Total Transplants**  
Kidney transplants performed in 2024

**559** **↑4.5%** 

**Waiting**  
People waiting for a kidney transplant

**5 year Graft Survival (Deceased Donor)** 

**82%**

**5 year Graft Survival (Living Donor)**



**89%**



## Overview

2024 continued to be a busy year for the National Kidney Transplant Service at Beaumont Hospital. By the end of the year, **175** kidney transplants had been performed, 30 of these from living donors. Of the 145 transplants from deceased donors, 34 were from donors after cardiac death, which represents our second highest utilisation of these donors to date.

It is worth noting again, as we did in last year's report, that significant changes have occurred in both donor and recipient characteristics over the years since 2011, when we achieved our highest number of kidney transplants, 192. In that year, only 4 of these transplants were from deceased after cardiac death donors, whereas in 2024 these donors represent almost **23%** of our deceased donor activity. In 2024, 15% of all deceased donor activity was from donors aged 60 years and older. Many kidney donor offers are from older patients who may have co-morbid illness and are generally more complex, so called "extended criteria" donors. While our outcomes for patients receiving such kidneys remains excellent, and this evolution in organ utilisation is undoubtedly necessary, it is associated with a more complicated post-operative course and increased length of stay. We are seeing increased medical co-morbidity and frailty in patients on the transplant pool list, as well as complex social issues, ultimately leading to longer hospital stays after transplant. Our length of stay increased by **16%** compared to 2023. In 2024, **32 (18%)** of our recipients were aged 65 years or older, another ongoing trend. We are seeing greater use of the intensive care department, higher rates of delayed graft function and readmission. This in turn leads to greater demands on our vital support services, such as interventional radiology, intensivists, dialysis, the H&I department general and specialist laboratories, including specialist renal pathology. As a result, we have resourced a new clinic to actively and pre-emptively manage patients approved to the waiting list pool, to ensure their optimal fitness for transplant.

At the end of 2024, there were **2,783** people alive with a functioning kidney transplant, an increase of **2%** from 2023. 96% of these transplants were performed at Beaumont Hospital. The number of patients on the kidney transplant waiting pool continues to rise. By the end of 2024, it had increased by **4.5%**, from 2023, to a total of 559. In 2024, **226** new patients were added to the pool an increase of **14%** from previous year. As always the global shortage of organs, relative to the number waiting for a transplant, remains an ever present challenge. Continued investment in the transplant service infrastructure to facilitate the recognition and utilisation of marginal donors by dedicated staff in intensive care units around the country, under the auspices of Organ Donation and Transplant Ireland (ODTI) is required to increase our deceased donor numbers. The Irish Potential Donor Audit (NOCA) aims to identify opportunities for improvement in this area.

However, perhaps our greatest resource we have to increase our numbers of transplants is the awareness of living donor transplantation. We continue to see increasing numbers of potential kidney recipients actively seeking living donors, understanding that recipients with an identified donor spend approximately **60%** less waiting time on dialysis and the waiting list pool prior to transplant. Currently, with just over **2,580** people dialysis dependent, a waiting list which has increased by almost **10%** in over 5 years coupled with the changing donor and recipient characteristics mentioned previously, living donation where and when



possible is the optimum solution. We are committed to increasing our numbers of living donor transplants, and encourage all potential recipients, their families' friends and medical teams, to consider living donor transplantation as a first line option.

In 2024, we performed **30** living donor transplants, similar to the average for the past 6 years. 5 further donor/recipient pairs are scheduled for surgery in early 2025. Other initiatives introduced to enhance the living donor programme include the development of the donor blood group incompatible service which requires intensive specialist staff and resources. Robotic assisted technology as a surgical technique for suitable donors has also been introduced, enhancing the minimally invasive surgical approaches that we have used for living donors since 2011. It is important to note that increasing living donor transplantation will require an increase in intensive care capacity.

For potential recipients whose identified living donor is not a match for them, living donation is not out ruled as we continue a very successful collaboration with the United Kingdom Living Kidney Sharing Scheme (UKLKSS). There were **9** successful "paired kidney exchange" living donor transplants in 2024, our highest number to date, and 14 donor-recipient pairs are currently enrolled in the scheme.

Potential recipients with high level of pre-formed antibodies, so called "highly sensitised", require intensified immunosuppression to prevent transplant rejection, and will often struggle to find a matched kidney resulting in very long waiting times on the waiting list pool. Through enormous work by our Immunology service, H&I laboratory, specialist clinical personnel and the development of a specialist clinic specific for this group, the NKTS in 2024, transplanted **16** very highly sensitised recipients (PGen 10  $\geq$  95%). Continued progress in transplanting this complex group of patients has resulted in the ongoing reduction in the overall median waiting pool time.

We begin anew in 2025, conscious of our duty to maintain and build upon the remarkable work and achievements of all the surgeons, physicians, immunologists, intensivists, radiologists, transplant coordinator's, nurses, HCAs, laboratory staff and all the other ancillary support staff who have contributed to the ongoing growth and development of the kidney transplant unit at Beaumont Hospital since 1964, and who continue to make up the transplant team.

We do this having, in 2024, proudly crossed some significant milestones in Irish kidney transplantation: the **6,000th** transplant performed by the NKTS and first person to have celebrated over **50 years** with a successful kidney transplant. This extraordinary achievement could not have been realised without the on-going dedication and work of all members of the transplant team, staff of Intensive Care Units throughout the country under the auspices of the ODTI and all the staff in Beaumont Hospital who continue to support us.

We would especially like to acknowledge the forbearance of the patients that depend on this transplant program and the bravery of all living donors.

Finally, and most important of all, we wish to recognise the extraordinary generosity of all kidney donors and their families, to whom so many owe their lives and without whom, the NKTS would not exist.



# 1. Kidney Transplant Activity 2024

## Summary of transplant activity

- In 2024, **175** kidney transplants were performed by the NKTS at Beaumont a lower number than from 2023 of **14**. Of these, **30** were from living donors, **145** from deceased donors.
- Of the **145** deceased donor transplants, **34** (23%) were from donors after cardiac death (DCD), the second highest level recorded to date.
- The number of recipients living with a functioning allograft increased by 2% during 2024, reaching **2,783** (at year end 2024), **2,661** (96%) of whom were transplanted in Beaumont Hospital.
- There were **30** living donor kidneys transplanted in 2023, lower than the average for the past 6 years (32). Living donor transplants represented 17% of all kidney transplants performed in 2024, compared to the overall percent for the last 6 years of 19%.
- There were **4** simultaneous pancreas/kidney (SPK) transplants performed in collaboration with our colleagues in St. Vincents University Hospital.
- There were **7** paediatric (age <19 years) transplants performed, **5** of which were recipients of kidneys from deceased donors and **2** were from living donors.
- There were **9** paired kidney exchange transplants performed in collaboration with our colleagues in the United Kingdom Living Kidney Shared Scheme (UKLKSS).

Table 1.1: Summary of transplant activity 2019 - 2024

Category	2019	2020	2021	2022	2023	2024	Average (6yrs)
Total number of transplanted kidneys*	153	123	139	163	189	175	157
Number of deceased donor kidney only transplants	126	92	102	122	154	141	123
Number of Living donor kidney transplants	25	28	35	33	30	30	30
Number of Simultaneous Pancreas/Kidney (SPK)	2	3	2	8	5	4	4
Number of Paired Kidney Exchange (Living donor UK)	3	1	2	8	2	9	4

*Note:* \*includes SPK, and excludes paired kidney exchange (UKLKSS)

Table 1.2: Recipient allograft survival at the end of 2024

Category	0-10 yrs	>10-20 yrs	>20-30 yrs	>30-40 yrs	>40 yrs	Total
Deceased donor kidney only transplants	1051	665	310	66	13	2105
Living donor kidney transplants	309	132	8	11	18	478
Simultaneous pancreas/kidney (SPK)	34	35	8	1	0	78
All kidney transplants	1394	832	326	78	31	2661

*Note:* includes patients transplanted in Beaumont Hospital and excludes those transplanted abroad

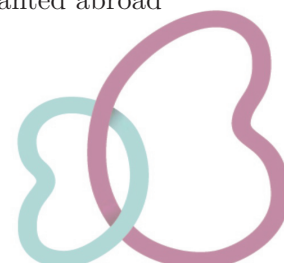


Figure 1.1: Number of deceased donor kidney transplants performed per annum 1964 - 2024

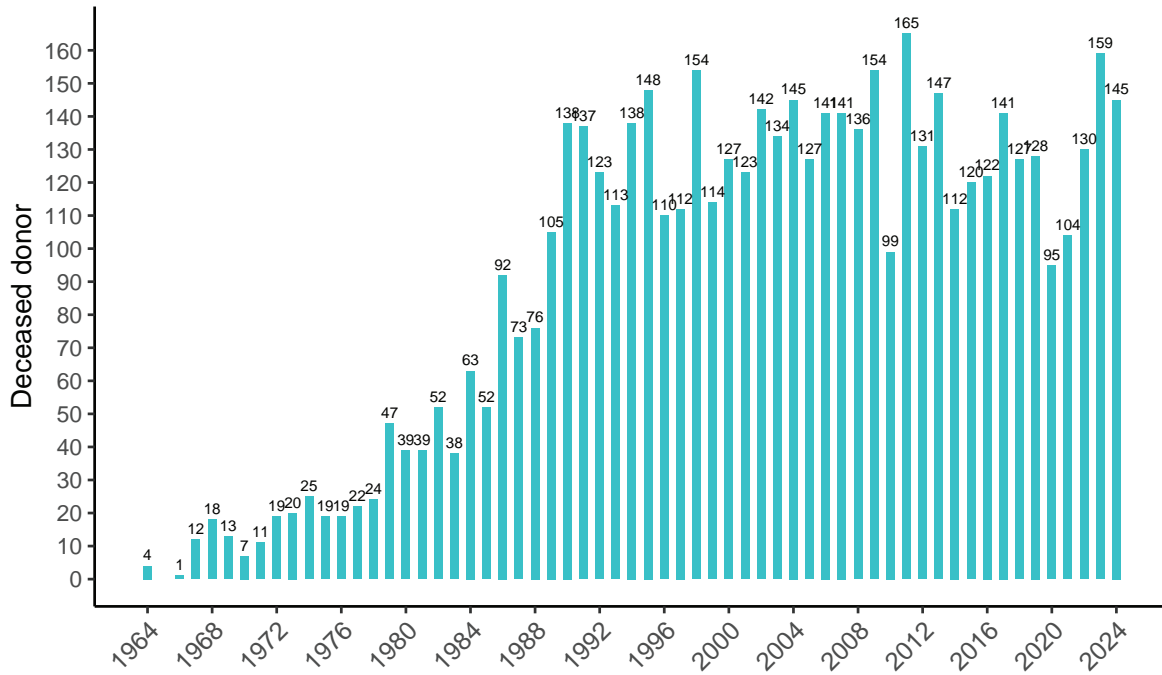


Figure 1.2: Number of DCD and DBD donor kidney transplants performed 2010 - 2024

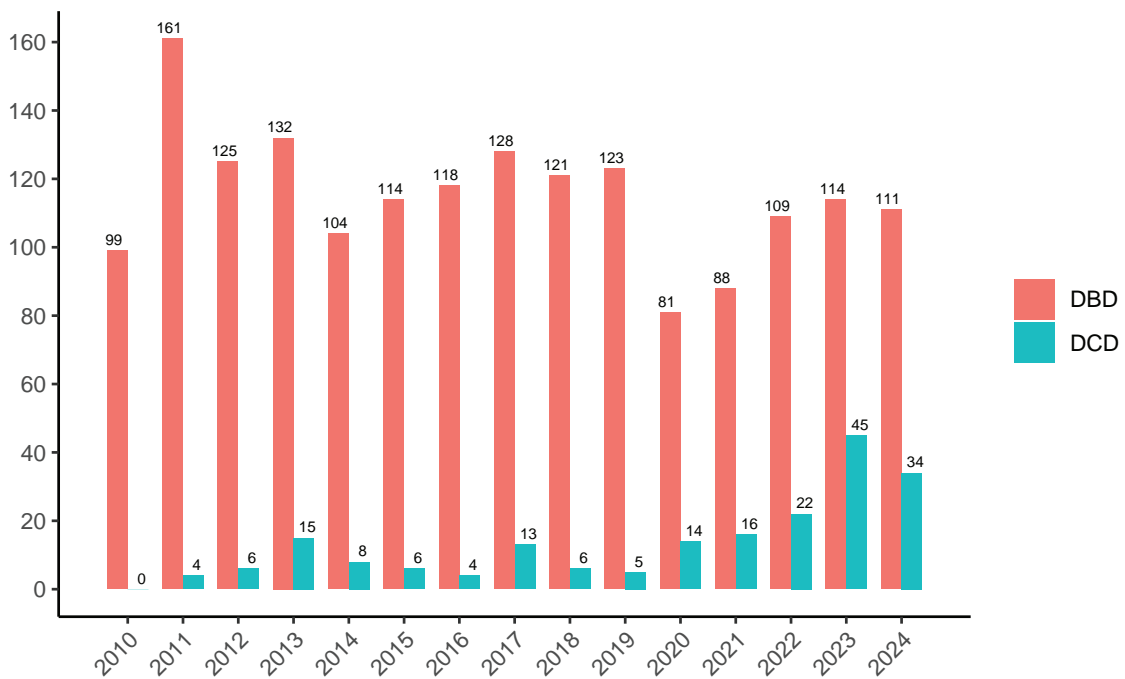


Figure 1.3: Number of living donor kidney transplants performed per annum 1972 - 2024

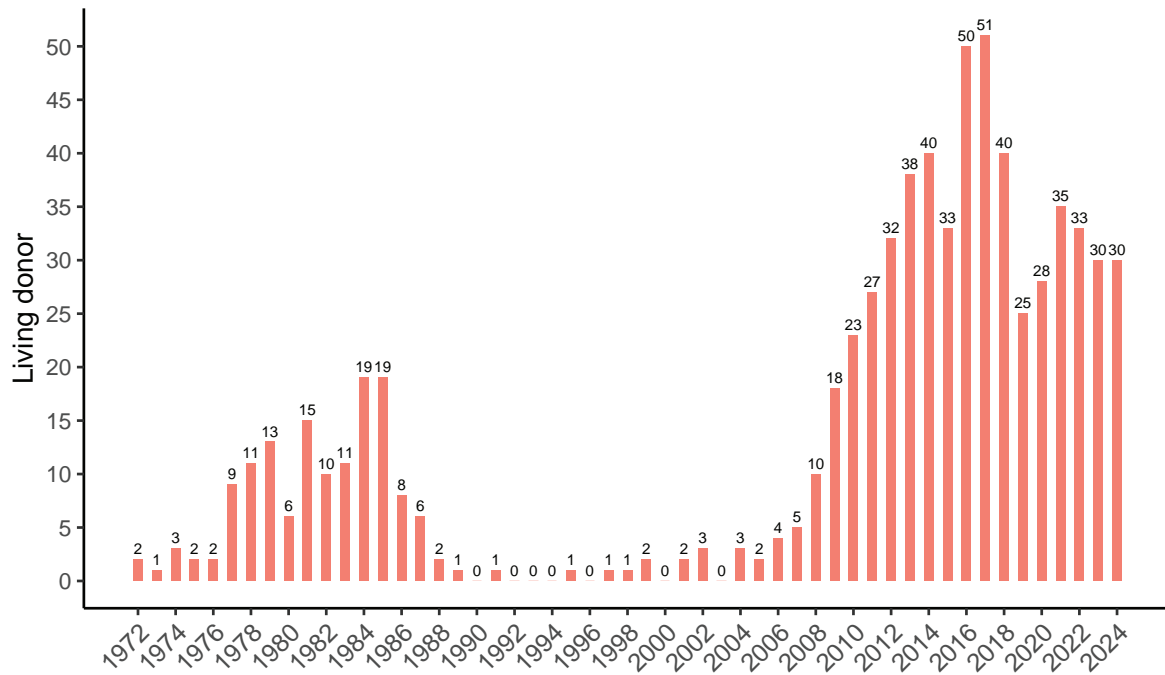
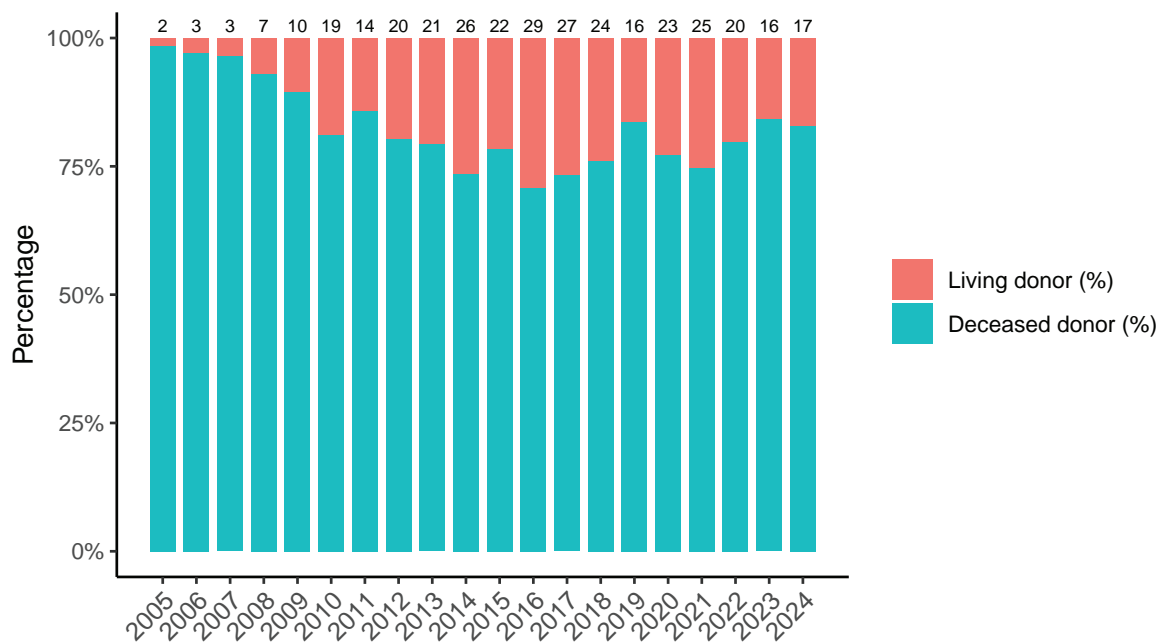


Figure 1.4: Proportion of total living and deceased donor kidney transplants performed 2005 - 2024



\*Note: % of living donor kidney recipients quoted on top of bars



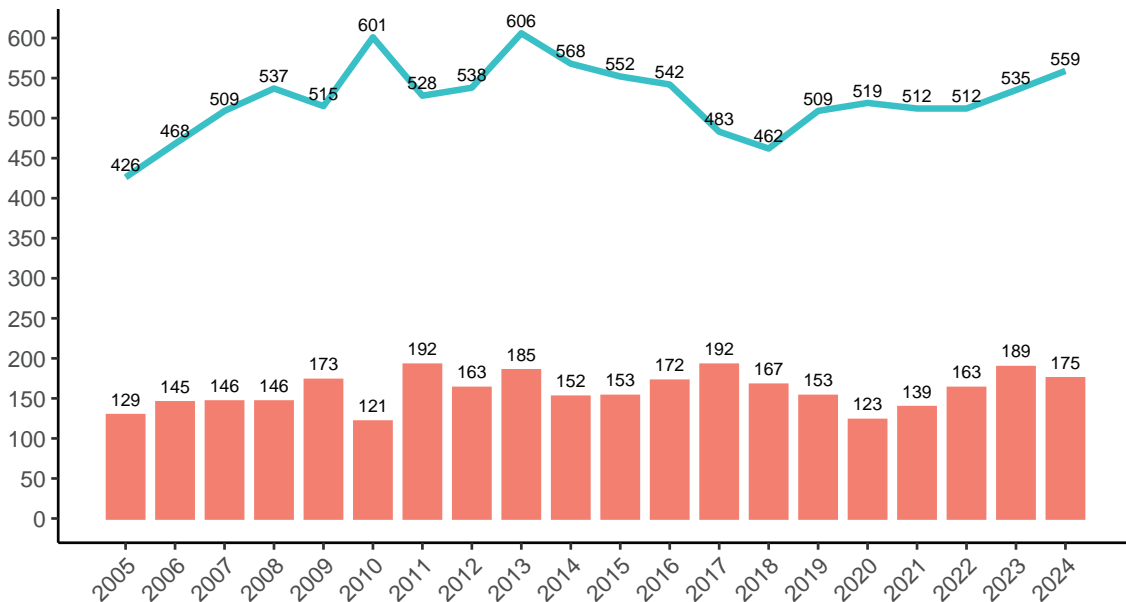


## 2. Kidney Transplant Waiting List

- At the end of 2024, the number of patients on the kidney transplant waiting list has increased by **4.5%** from 2023 to **559**. This represents the gradual reversal of the trend from recent years where a high of 606 was recorded at the end of 2013 and subsequently decreased to 462 by the end of 2018 (Figure 2.1) before increasing again slightly during the years affected by Covid-19.
- Median time on dialysis prior to first transplant was **34** months overall, **36** months for deceased donor and **17** months for living donor recipients (Figure 2.2)
- In 2024, **7**, (**4%**) of transplants were performed in patients not yet established on dialysis (i.e. preemptively), **4** of whom received a deceased donor kidney and **3** received a living donor kidney (Figure 2.3).
- The overall median waiting time to first kidney transplant in 2024 was **19** months, i.e. of the 175 transplants performed in 2024, 50% of recipients received a kidney within 19 months of being placed on the transplant waiting list (Figure 2.4). Of note highly sensitized patients (PGen  $\geq$  95%) had median waiting time of **41** months.
- Waiting times for living donor transplants was considerably shorter at **8** months compared to **23** months for deceased donors (Figure 2.4).

### Number of patients on the kidney transplant waiting list and total number of kidney transplants performed per year

Figure 2.1: Number of patients on the kidney transplant waiting list(active and suspended) and number of transplants per annum 2005 - 2024\*



\*Note: number of transplants per annum = bar graph, waiting list = line graph



## Median time on renal replacement therapy and kidney transplant waiting list prior to transplant

Figure 2.2: Median time on dialysis prior to first transplant 2005 - 2024

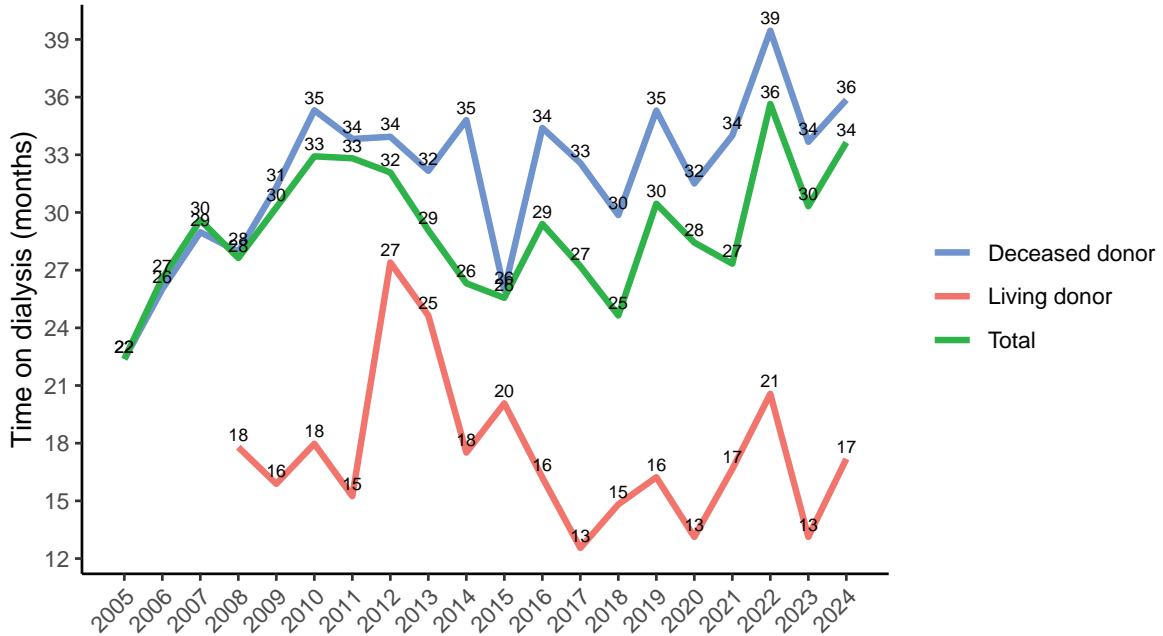


Figure 2.3: Percentage of transplants per year performed preemptively for deceased and living donor recipients 2010 - 2024

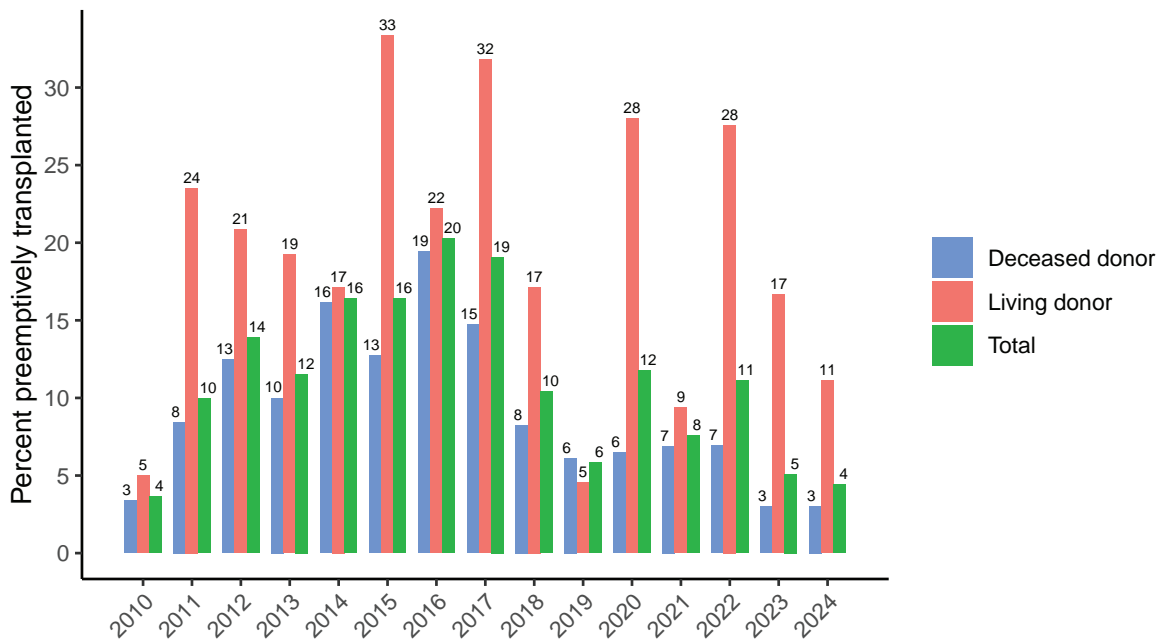
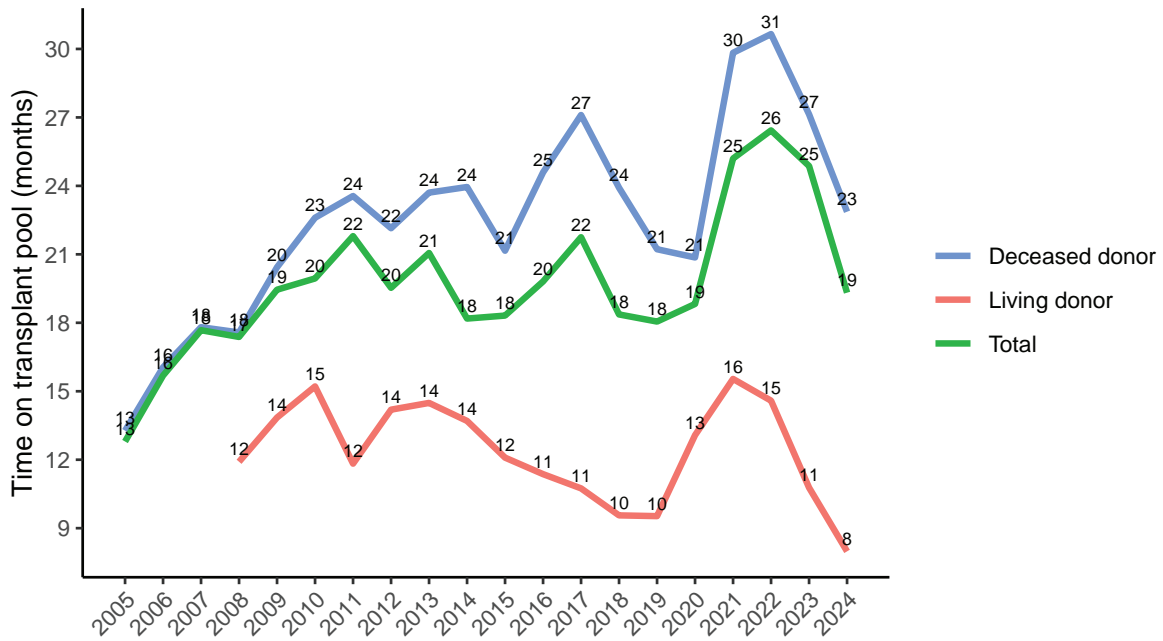


Figure 2.4: Median time on kidney transplant waiting list prior to first transplant 2005 - 2024



**60%**

“Recipients with an identified **living donor** spend approximately **60% less time on dialysis** and the **pool** prior to transplant.”



## Referring center for kidney transplant recipients

The number of patients transplanted per referring center broadly reflects the number on the waiting list per center. Figure 2.6 details the number on the waiting list per center for 2024 which correlates with the percentage of transplants for each center for the period 2019 - 2024 (Figure 2.5).

Figure 2.5: Percentage of total kidneys transplanted by referring center for 2024 and for 6 year period 2019-2024

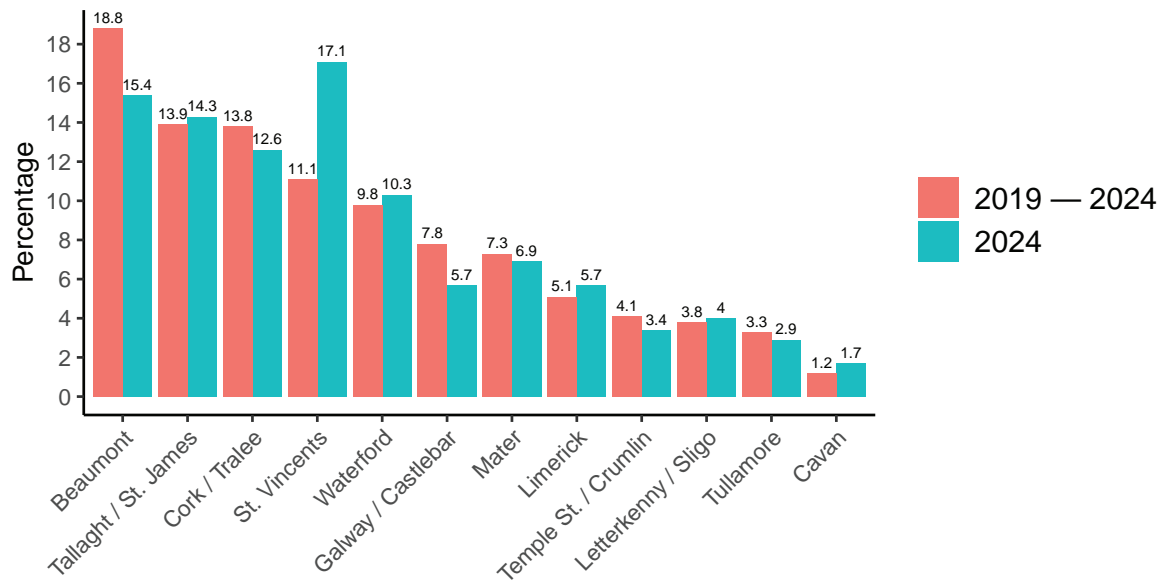
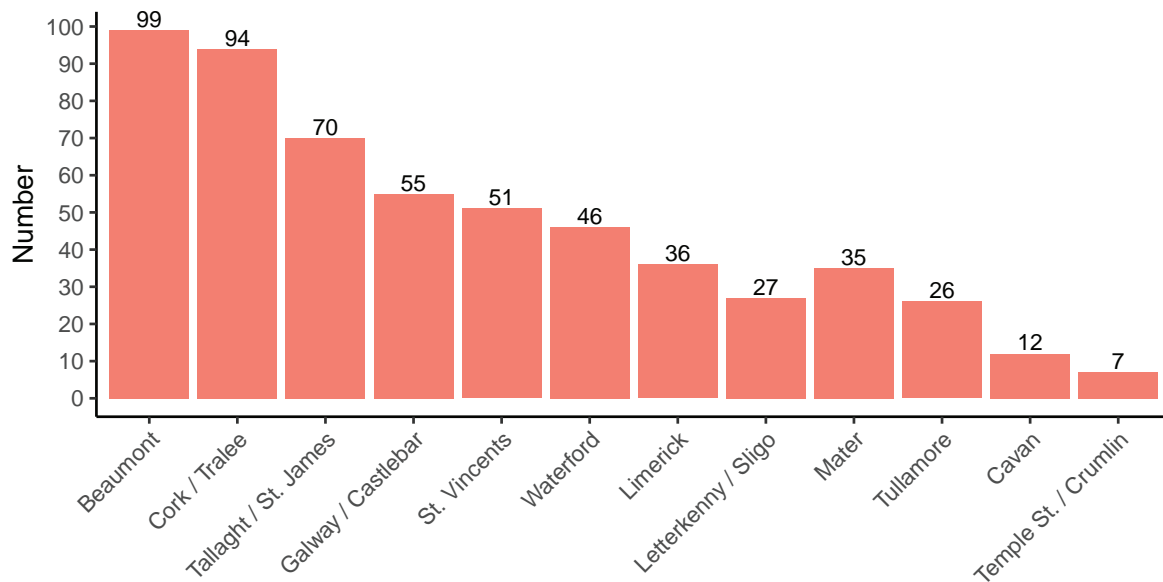


Figure 2.6: Number of patients per referring center on the kidney transplant waiting list at the end of 2024



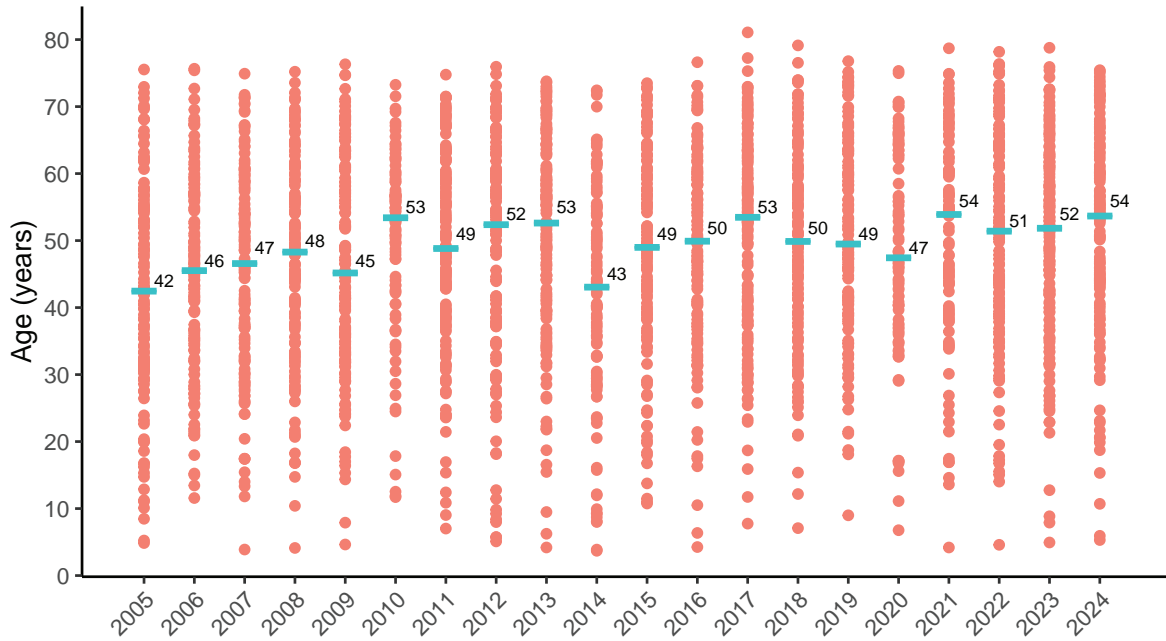
### 3. Donor and Recipient Characteristics at Transplant

- There has been a noticeable trend of increasing recipient age at time of transplant for deceased donors. The median age increased from a low of **42** years in 2005 to **54** years in 2021 and number was repeated in 2024 (Figure 3.1). The age range for the 2024 cohort was 5 to 75 years.
- During 2024, the median recipient age for living donor transplants was **43** years, range of 11 – 69 years (Figure 3.2).
- In 2024, **32 (18%)** of recipients were  $\geq 65$  years of age representing an emerging trend of transplanting older recipients.
- Recipient sex ratios of deceased and living donor kidneys has remained constant over time with approximately two thirds of transplants being male recipients, which reflects the sex distribution of patients on the transplant waiting list. In 2024 the percentage of male recipients was (**68%**), compared to an overall number of (**64%**) for 2005 - 2024 (Figure 3.3).
- Renal replacement modalities prior to transplant in 2024 varied somewhat from previous years with regular haemodialysis (RHD) increased compared to the overall for the period 2005-2024 and the percentage for peritoneal dialysis (PD) somewhat reduced. There are relatively fewer transplants being performed pre-emptively (of RRT) in recent years and this is reflected in the low number recorded for 2024 (Figure 3.4).
- The number of people on the transplant waiting list for whom there is difficulty in finding a compatible donor due to the presence of antibodies poses a major challenge. The majority of these highly sensitised (PGen  $\geq 95\%$ ) patients have had a previous kidney transplant or other sensitising events including previous blood transfusion, pregnancy or infection. There has been a steady increase in the number of such 'highly sensitised' patients transplanted in recent years with **9%** of all recipients in 2024 having a PGen  $\geq 95\%$  at time of transplant (Figure 3.6).
- Median donor age for deceased donor recipients was **49** years, (range 8 – 74 years) in 2024 (Figure 3.7), where the highest median donor age was 52 years in 2019. Median donor age for living donors has remained relatively constant in recent years and was **44** years (range 26 – 68 years) in 2024 (Figure 3.8).
- Donor sex ratios during 2024 for both deceased and living donors compare to overall rates over the time periods studied (Figures 3.9 and 3.10).



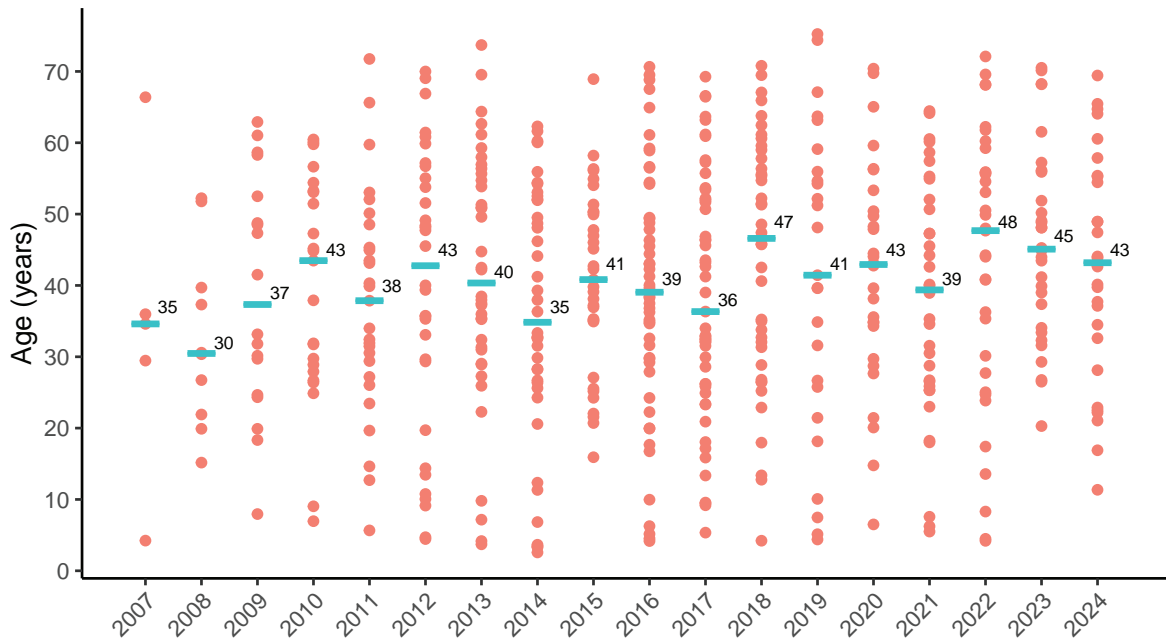
## Recipient age

Figure 3.1: Recipient age at transplant for deceased donor kidneys 2005 – 2024\*



\*Note: median age quoted in graph

Figure 3.2: Recipient age at transplant for living donor kidneys 2007 – 2024\*

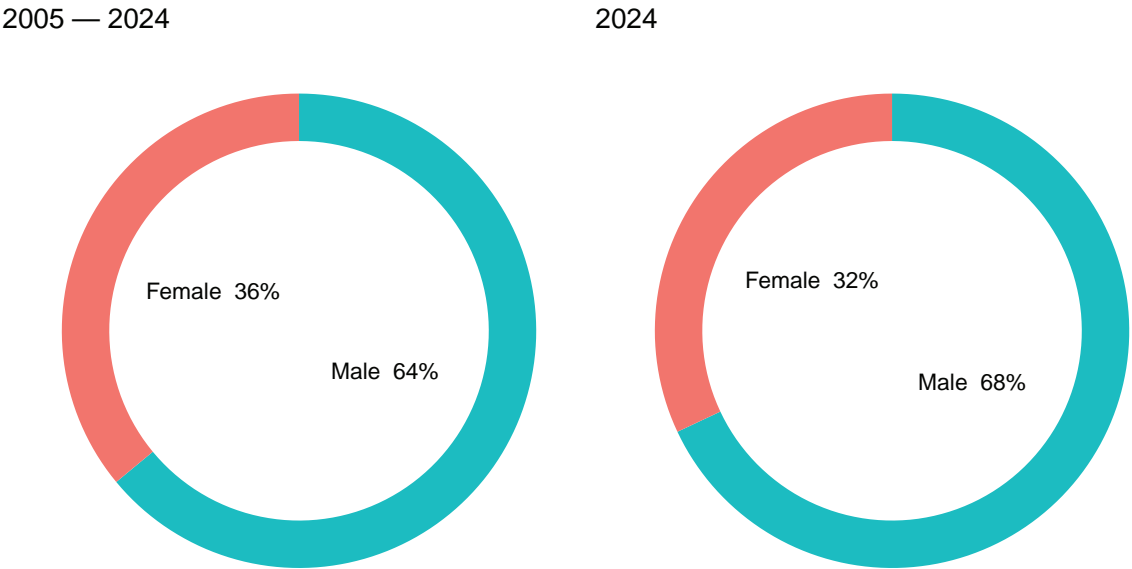


\*Note: median age quoted in graph



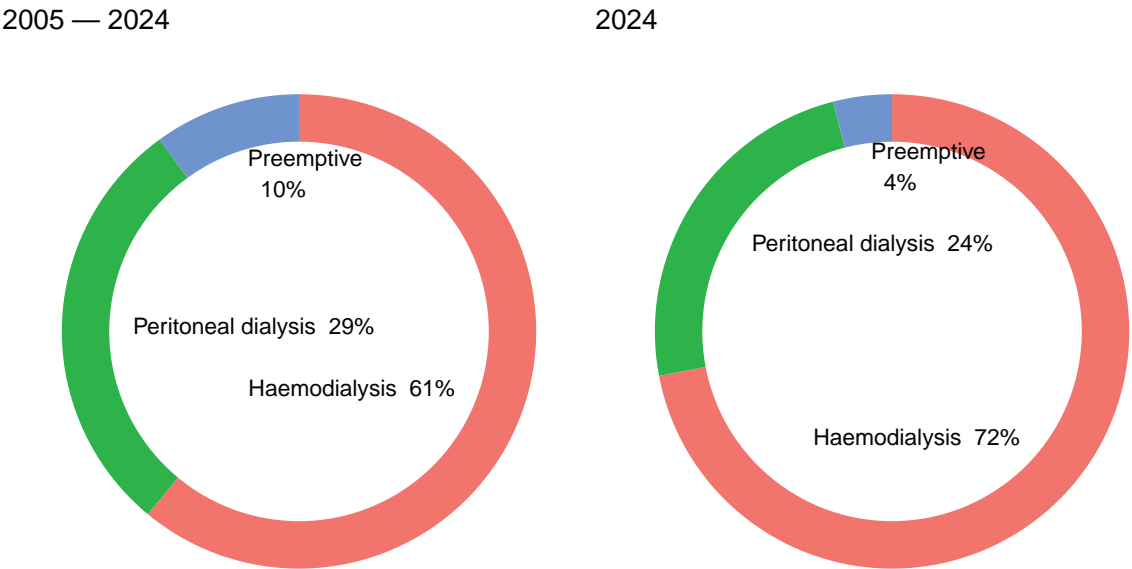
# Recipient sex

Figure 3.3: Sex of recipient for combined deceased and living donor kidneys 2005-2024



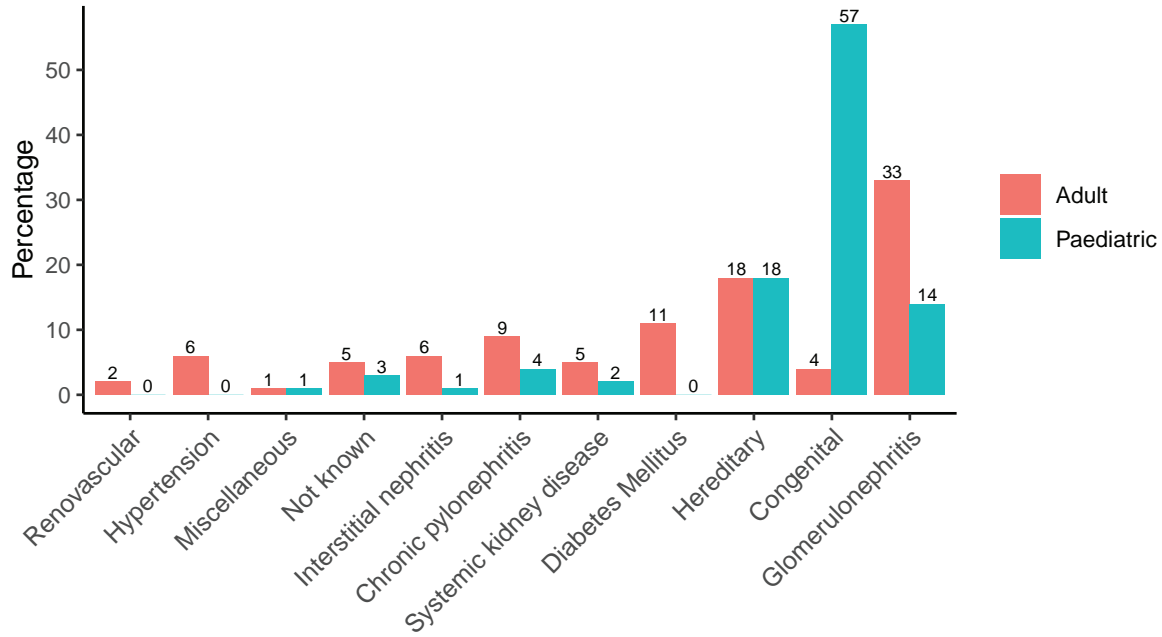
# Mode of renal replacement therapy prior to transplantation

Figure 3.4: Mode of renal replacement prior to first kidney transplant 2005 - 2024



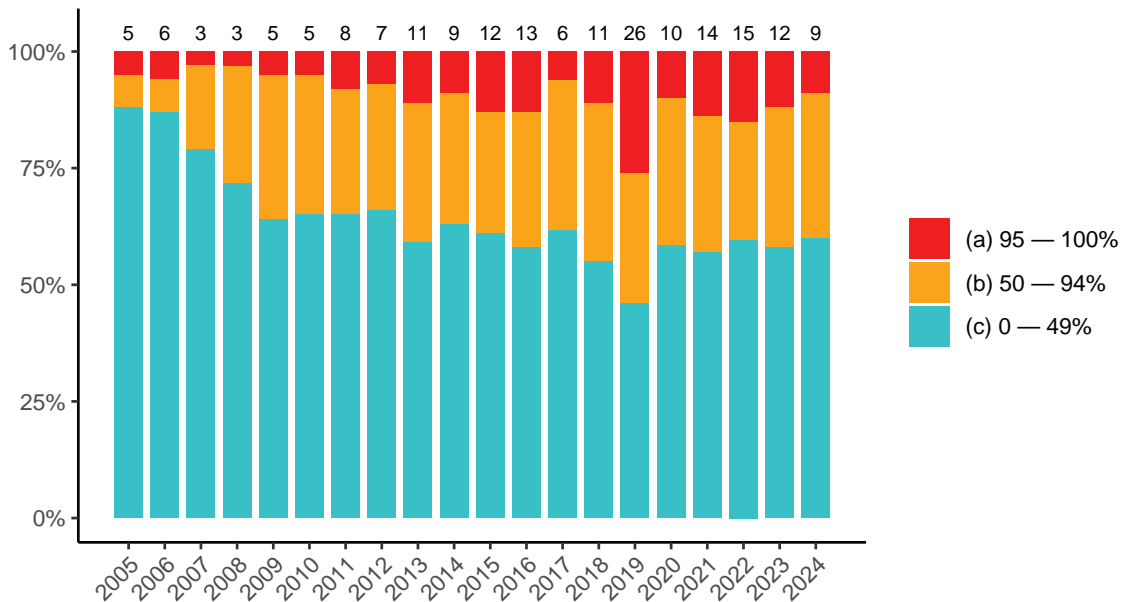
## Cause of end stage renal disease for adult and paediatric recipients

Figure 3.5: Cause of ESRD for adult and paediatric transplant recipients 2005-2024



## Panel reactive antibodies (PGen) of renal transplant recipients

Figure 3.6: Recipient PGen in categories for all kidney transplants 2005 - 2024\*



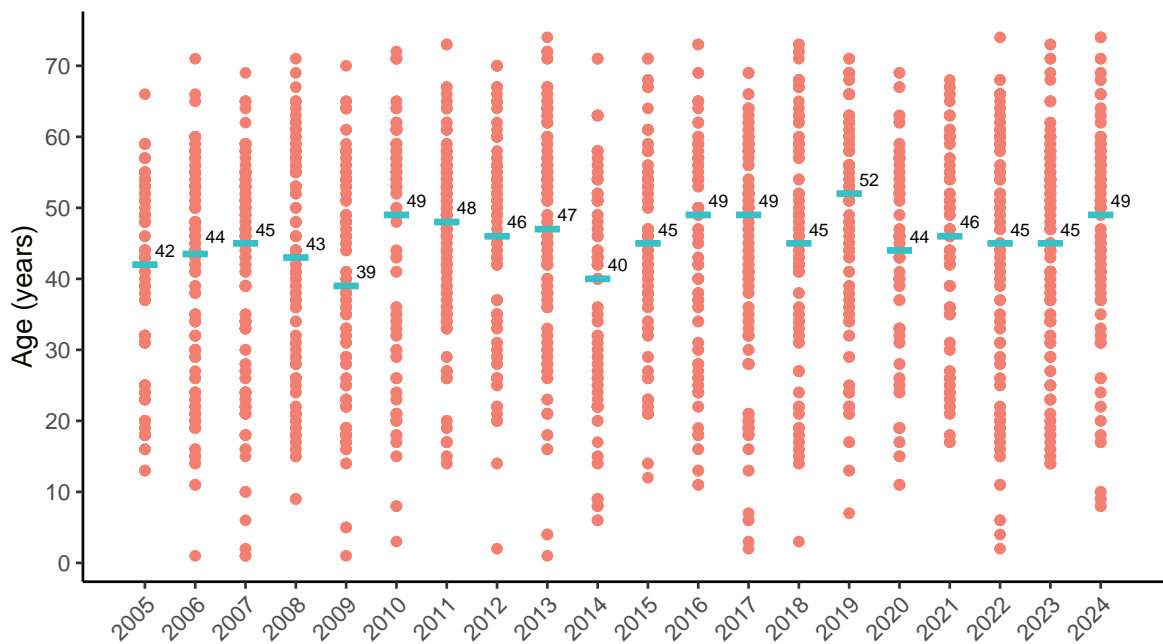
\*Note: % of highly sensitised patients quoted on top of bars





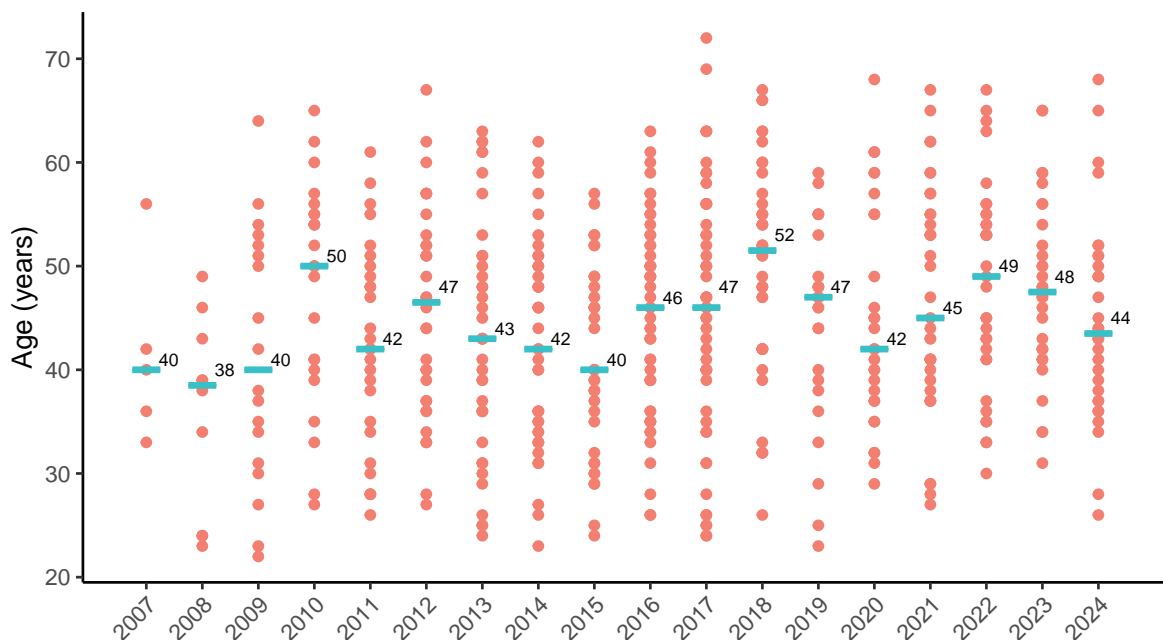
## Donor age

Figure 3.7: Donor age at transplant for deceased donor kidneys 2005 – 2024\*



\*Note: median age quoted in graph

Figure 3.8: Donor age at transplant for living donor kidneys 2005 – 2024\*



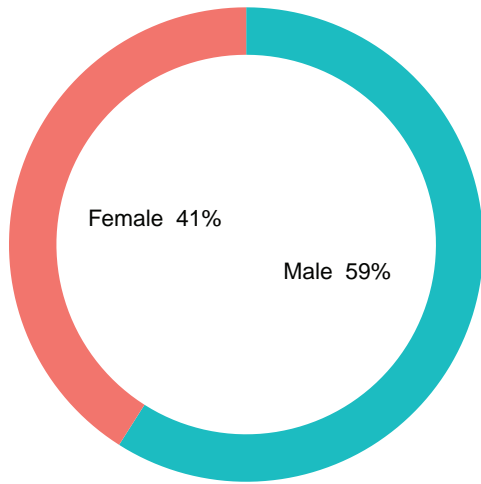
\*Note: median age quoted in graph



## Donor sex

Figure 3.9: Donor sex for deceased donor kidney transplants 2005 - 2024

2005 — 2024



2024

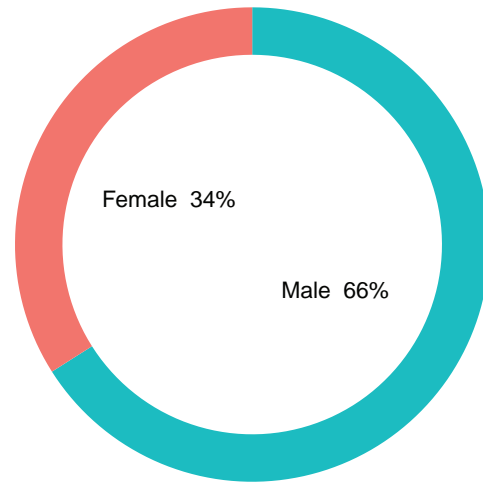
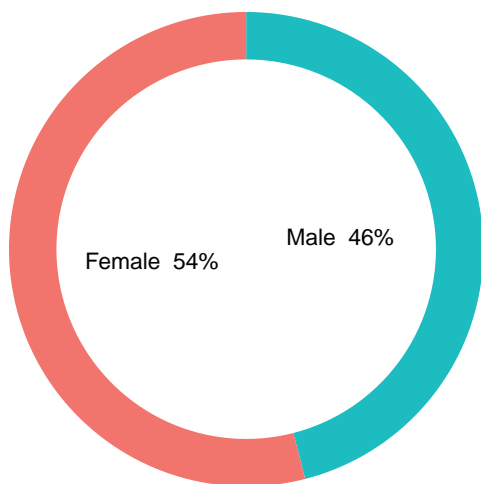
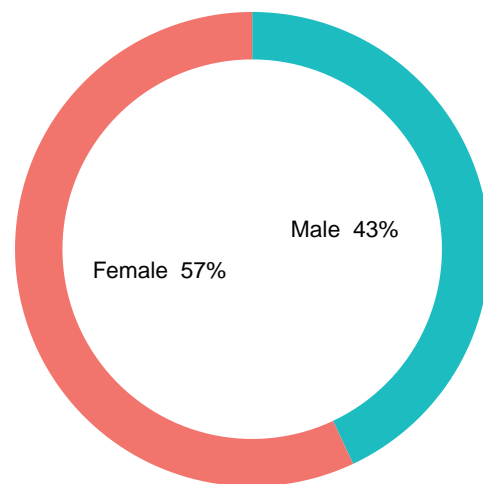


Figure 3.10: Donor sex for living donor kidney transplants 2007 - 2024

2007 — 2024



2024



## 4. Deceased and Living Donor Recipient Outcomes

### Adult deceased donor kidney allograft outcomes

This section focuses on adult deceased donor allograft and patient survival for the 30 year period 1994 - 2023. A total of **2,996** adult deceased donor kidney only first transplants were performed in this period. The definition of an adult recipient is age 19 years or older at date of transplant.

- The overall median allograft survival for adult first deceased donor transplants in the past 30 years is **14.5** years (Table 4.1).
- Overall 5-year uncensored allograft survival for adult first deceased donor transplants in the past 30 years is **82.0%** and **89.5%** when censored for death with a functioning graft (Table 4.2).
- Outcomes for first and second allografts for this period are quite similar with median times of survival for first and second adult deceased allografts of **14.5** and **15.6** years respectively. Median survival for third and fourth allografts was **9.8** and **11.8** years respectively (Table 4.3).
- One year allograft survival for deceased donor adult kidney recipients for 2019 – 2023 was **96%** in comparison to one year survival of **87%** for period 1994 - 1998 (Figure 4.3).
- Five-year allograft survival remains stable at **88%** for 2014 – 2018 comparable to the previous time period (2009 - 2013) of **86%**. The latest 5 year allograft outcomes compare very favorably with the earliest period 1994 – 1998 where 5 year allograft survival was **70%** (Figure 4.3).

# 14.5 & 20.9 years

“ Median adult deceased  
allograft and patient survival  
for the last 30 years”



## Adult first deceased donor allograft survival

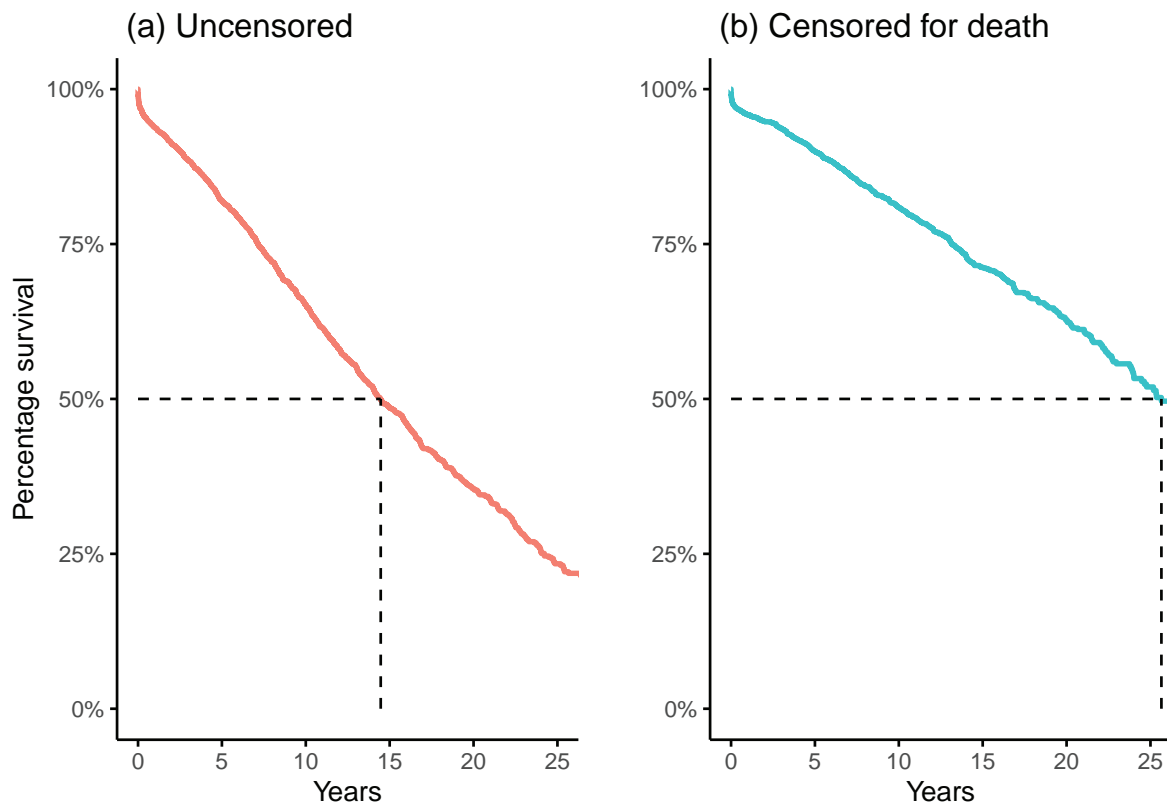
Table 4.1: Adult first deceased donor median allograft survival 1994 - 2023

Transplant number	Median allograft survival in years [95% C.I.] Uncensored for death
2,996	14.5 [13.9 - 15.4]

Table 4.2: Adult first deceased donor allograft survival 1994 - 2023

Follow up time (Years)	Estimated allograft survival [95% C.I.] (Uncensored)	Estimated allograft survival [95% C.I.] (Censored for death)
1	93.8 [92.9 - 94.6]	95.6 [94.8 - 96.3]
5	82.0 [80.5 - 83.4]	89.5 [88.3 - 90.6]
10	65.2 [63.3 - 67.1]	79.8 [78.0 - 81.4]
15	48.6 [46.3 - 50.7]	69.9 [67.6 - 72.0]
20	35.5 [33.1 - 38.0]	61.0 [58.1 - 63.8]

Figure 4.1: Adult first deceased donor kidney allograft survival 1994-2023

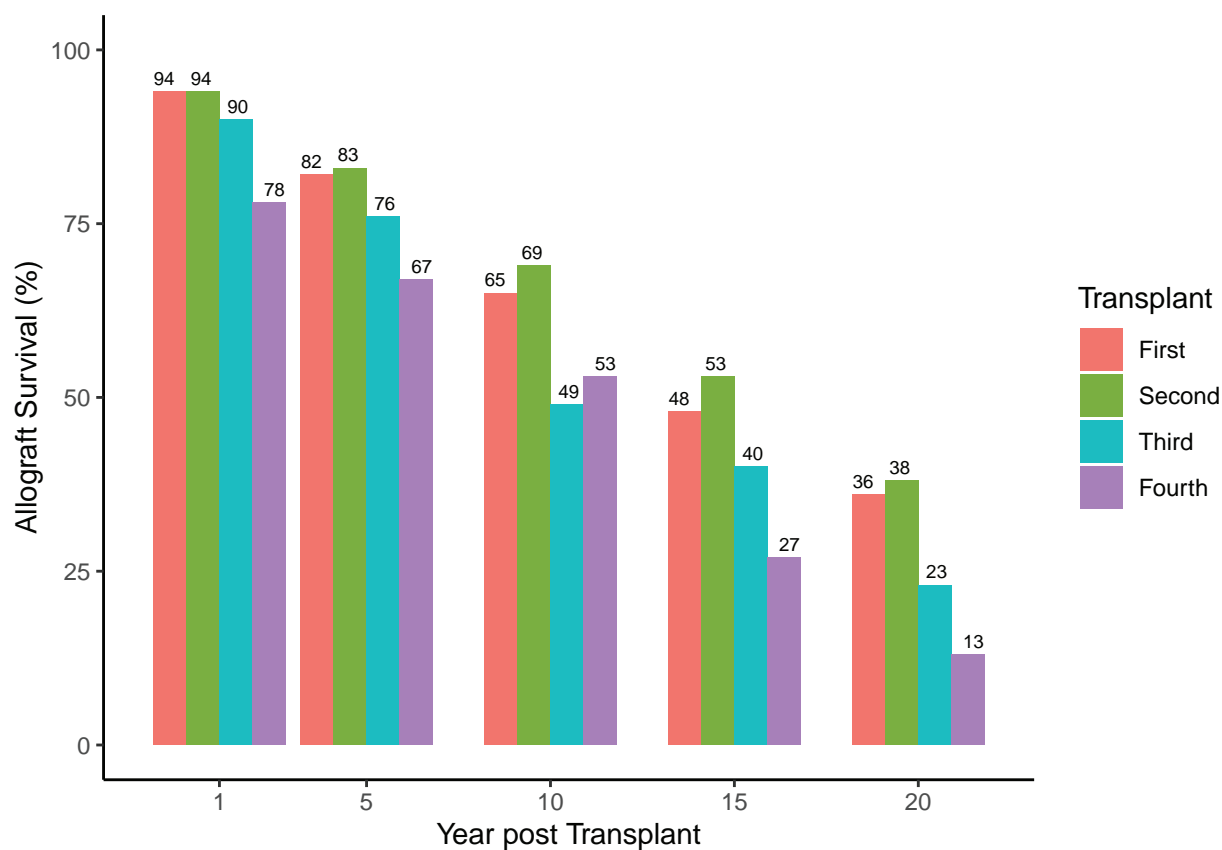


## Adult first and repeat deceased donor allograft survival

Table 4.3: Adult first and repeat median allograft survival for deceased donor transplants 1994 - 2023 by transplant number

Transplant number	No of allografts	Median allograft survival (years) [95% C.I.]
1	2996	14.5 [13.9 - 15.4]
2	442	15.6 [14.0 - 17.9]
3	61	9.8 [7.7 - 17.0]
4	9	11.8 [0.1 - 15.3]

Figure 4.2: Adult deceased donor first & repeat allograft survival estimates 1994 – 2023

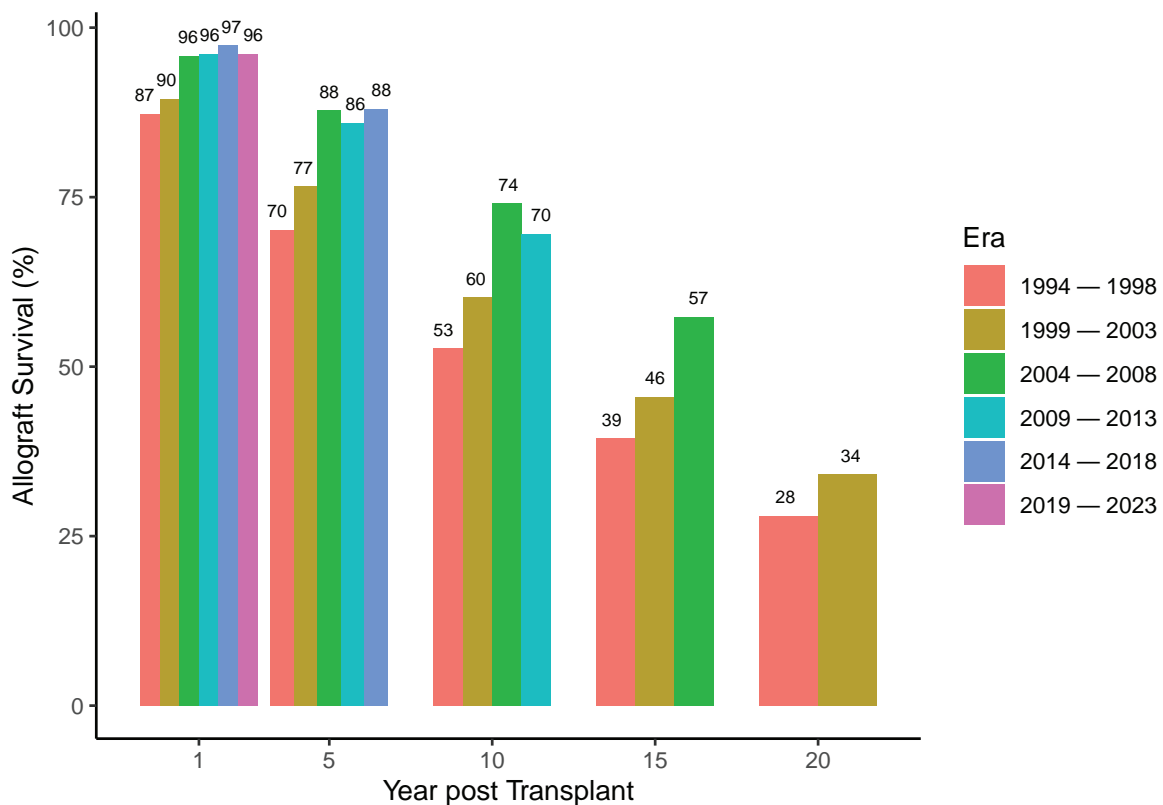


## Adult first deceased donor allograft survival by era

Table 4.4: Adult first median allograft survival for deceased donor transplants 1994 - 2023 by era transplanted

Transplant era	No of allografts	Median allograft survival (years) [95% C.I.]
1994 - 1998	480	11.1 [9.4 - 12.5]
1999 - 2003	457	13.7 [11.9 - 15.0]
2004 - 2008	525	17.7 [16.1 - 18.7]
2009 - 2013	562	NA
2014 - 2018	504	NA
2019 - 2023	468	NA

Figure 4.3: Adult first deceased donor allograft survival estimates by era 1994–2023



## Adult deceased donor patient survival

- The overall median patient survival for adult deceased donor recipients between 1994 – 2023 was **20.9** years (Table 4.5).
- Patient survival at 1 year has remained stable for the eras studied, reaching a high of **98%** for the period 2019 – 2023. Five year survival rates have improved markedly from **84%** in the initial period to **92%** for 2014 - 2018 (Figure 4.5).

## Adult first deceased donor patient survival

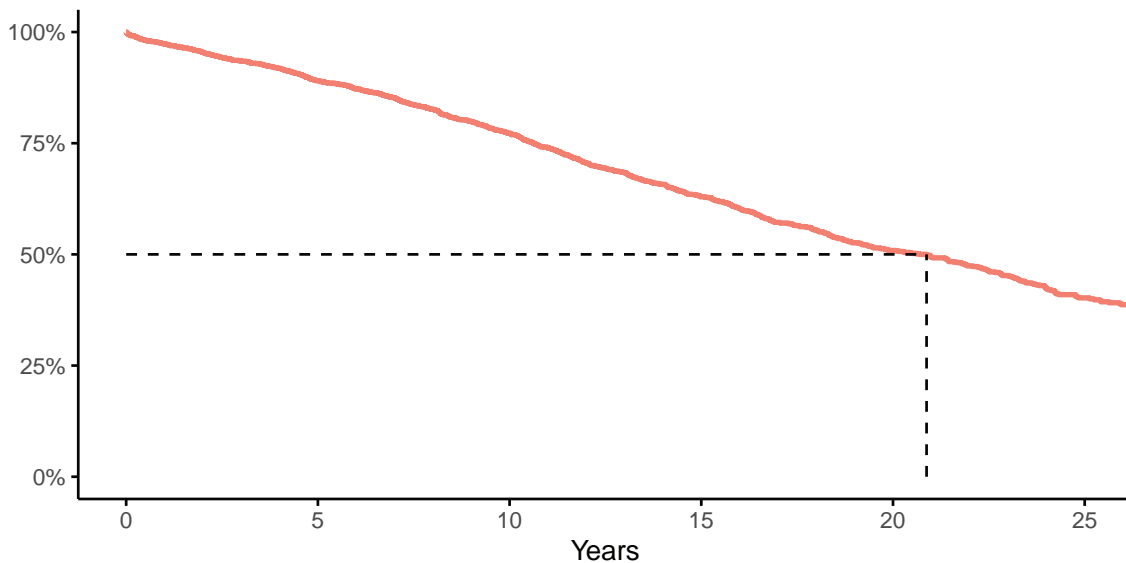
Table 4.5: Adult first deceased donor median patient survival 1994 - 2023

No. of transplants	Median patient survival (years) [95% C.I.]
2,996	20.9 [19.2 - 21.9]

Table 4.6: Adult first deceased donor patient survival 1994 - 2023

Follow up time (years)	Estimated patient survival [95% C.I.]
1	97.3 [96.7 - 97.8]
5	89.1 [87.8 - 90.2]
10	77.3 [75.5 - 78.9]
15	63.0 [60.8 - 65.0]
20	50.9 [48.4 - 53.3]

Figure 4.4: Adult first deceased donor patient survival estimates 1994-2023

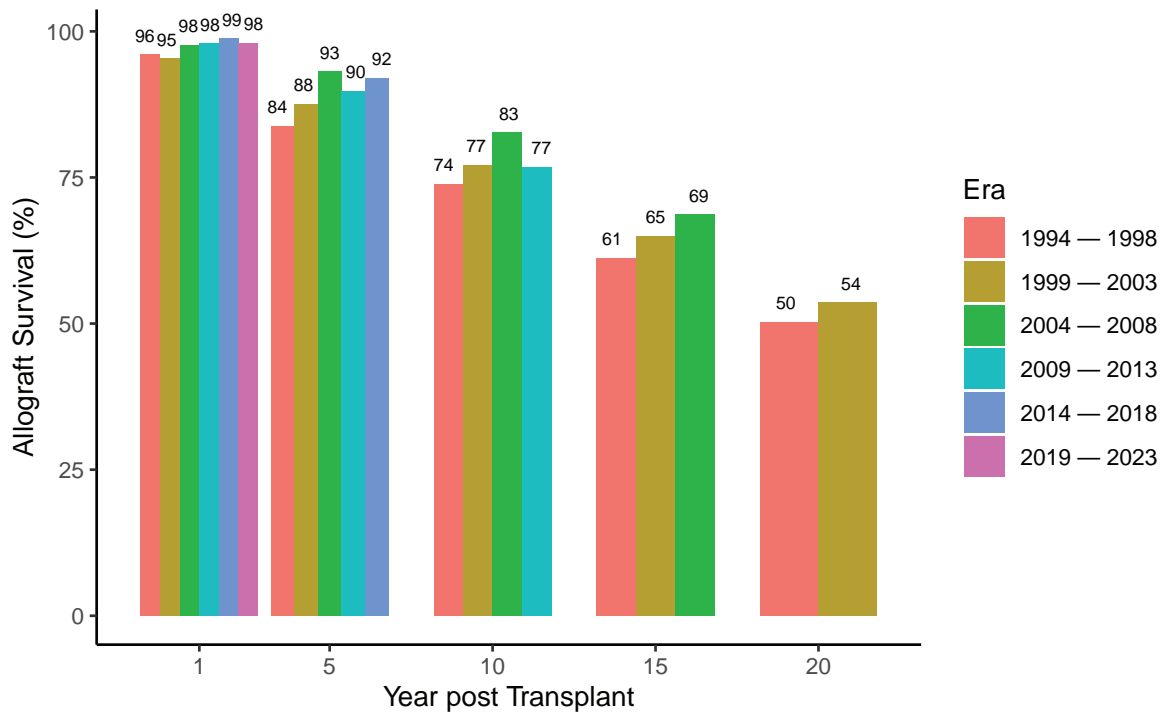


## Adult first deceased donor patient survival

Table 4.7: Adult first median allograft survival for deceased donor transplants 1994 - 2023 by era transplanted

Transplant era	No of allografts	Median allograft survival (years) [95% C.I.]
1994 - 1998	480	20.5 [17.9 - 22.5]
1999 - 2003	457	21.9 [19.4 - 23.5]
2004 - 2008	525	NA
2009 - 2013	562	NA
2014 - 2018	504	NA
2019 - 2023	468	NA

Figure 4.5: Adult first deceased donor patient survival estimates by era 1994–2023





## Adult recipient living donor allograft and patient outcomes 2007 - 2023

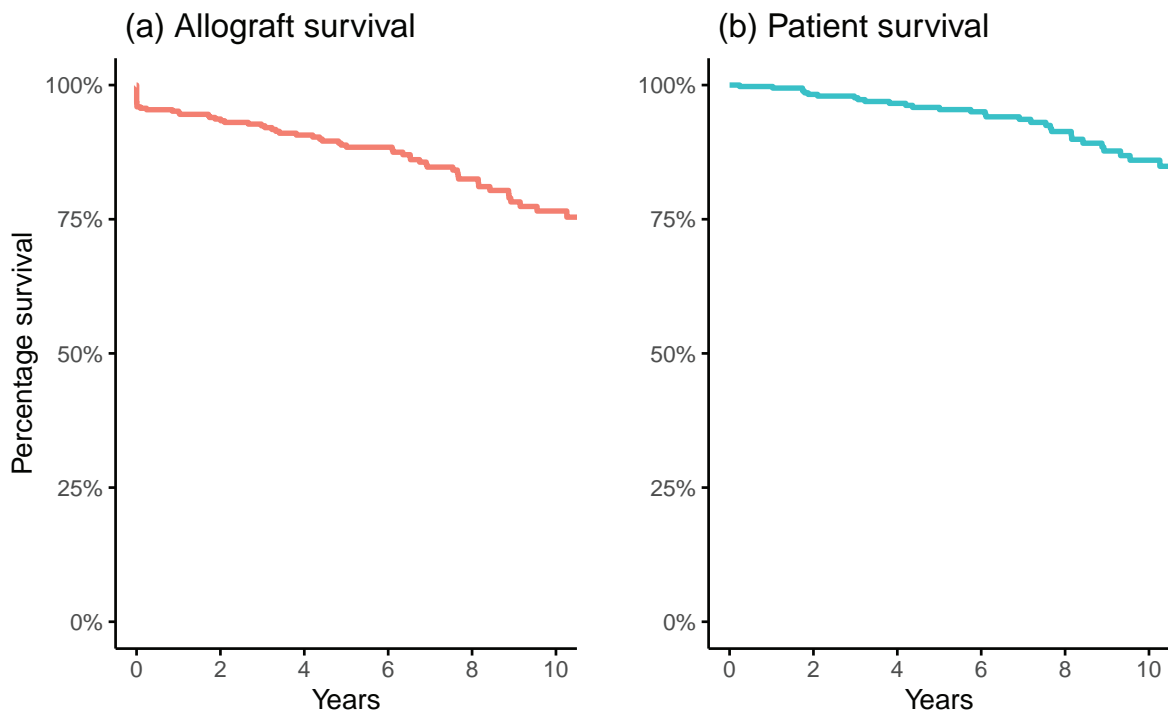
This section focuses on outcomes for adult recipients of living donor kidney from 2007-2023. During this period **454** living donor transplants were performed, **373** were for first transplant recipients **68** for second and **13** were for subsequent transplants.

- One-year allograft survival for adult living donor transplant recipients for the period 2007 - 2023 was **95%**, and patient survival was **99%**. Five-year allograft survival for adult living donor transplant recipients was **89%** and patient survival was **96%** (Table 4.8).

Table 4.8: Adult first living donor allograft and patient survival 2007 - 2023

Follow up time (years)	Adult living donor allograft survival[95% C.I]	Adult living donor patient survival[95% C.I]
1	95.1 [92.4 - 96.9]	99.7 [98.1 - 99.9]
3	92.4 [89.1 - 94.7]	97.6 [95.3 - 98.8]
5	88.8 [84.8 - 91.8]	95.8 [92.9 - 97.6]
10	76.5 [70.0 - 81.8]	86.0 [79.9 - 90.2]

Figure 4.6: Adult first living donor first kidney allograft and patient survival 2007 - 2023



## Paediatric deceased donor allograft and patient outcomes 1994 - 2023

This section focuses on paediatric deceased donor allograft and patient survival for the 30 year period 1994 - 2023. During this period there were **245** deceased donor paediatric transplants, of which **218** were first transplants.

- There were **7** paediatric transplants during 2024, **5** of which were from deceased donors. The age range was 5-18 years and all recipients received a first transplant.
- The overall median allograft survival for recipients of first deceased donors was **16.4** years (Table 4.9).
- One year paediatric deceased donor allograft survival was **91%** with one year patient survival of **99%**, reducing only to **98%** at 5 and 10 years (Table 4.10).

### Paediatric first deceased donor median allograft survival

Table 4.9: Paediatric first deceased donor median allograft survival 1994 - 2023

Transplant number	Median allograft survival in years [95% C.I.]
218	16.4 [13.3 - 21.5]

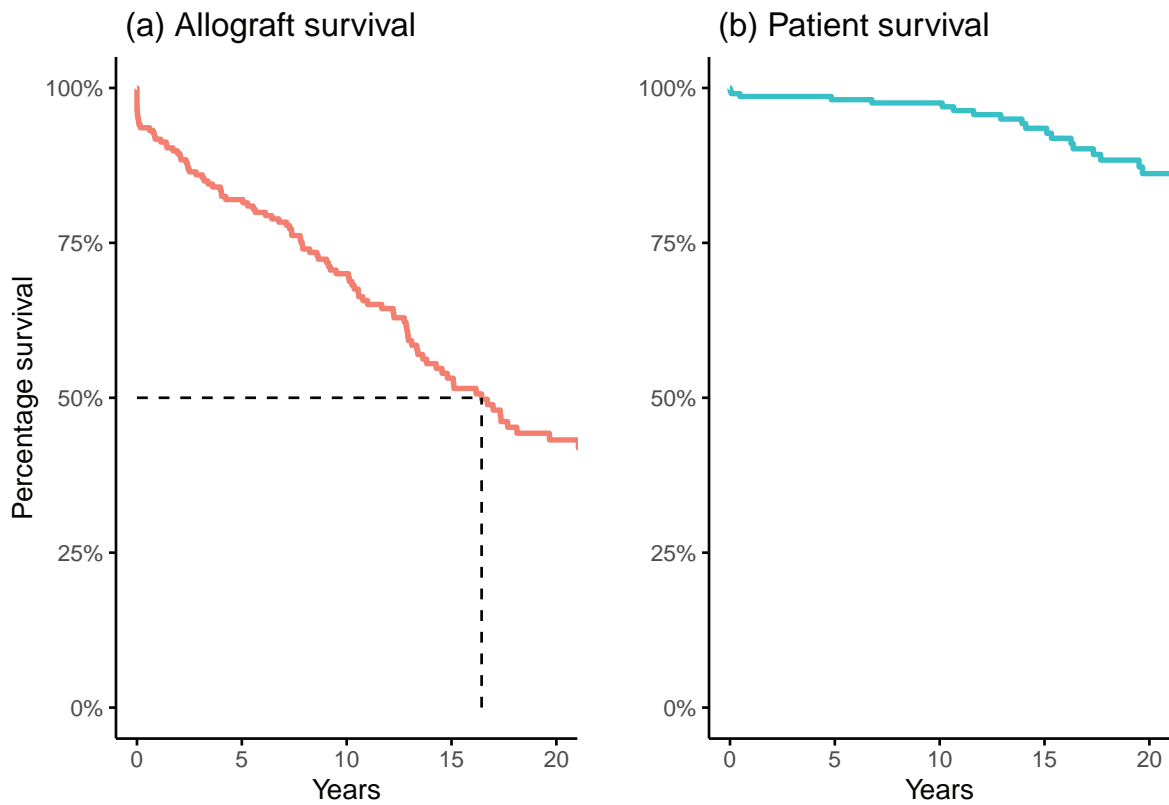
### Paediatric first deceased donor allograft and patient survival

Table 4.10: Paediatric first deceased donor allograft and patient survival 1994 - 2023

Follow up time (Years)	Estimated allograft survival [95% C.I.]	Estimated patient survival [95% C.I.]
1	91.7 [87.2 - 94.7]	98.6 [95.8 - 99.6]
5	82.0 [76.1 - 86.6]	98.1 [95.0 - 99.3]
10	70.0 [63.1 - 75.9]	97.6 [94.3 - 99.0]
15	53.2 [45.2 - 60.5]	93.5 [88.4 - 96.4]
20	43.2 [34.9 - 51.2]	86.2 [78.8 - 91.1]



Figure 4.7: Paediatric first deceased donor kidney allograft and patient survival 1994-2023



“Long term **allograft survival** for adult and paediatric **living donor** kidneys recipients **exceeds** those for deceased. Most recent 10 year adult living donor allograft survival rate is **76%** compared to deceased donor rate **65%**. For Paediatrics this is **77%** and **70%** respectively.



## Paediatric recipient living donor allograft and patient survival 2007 - 2023

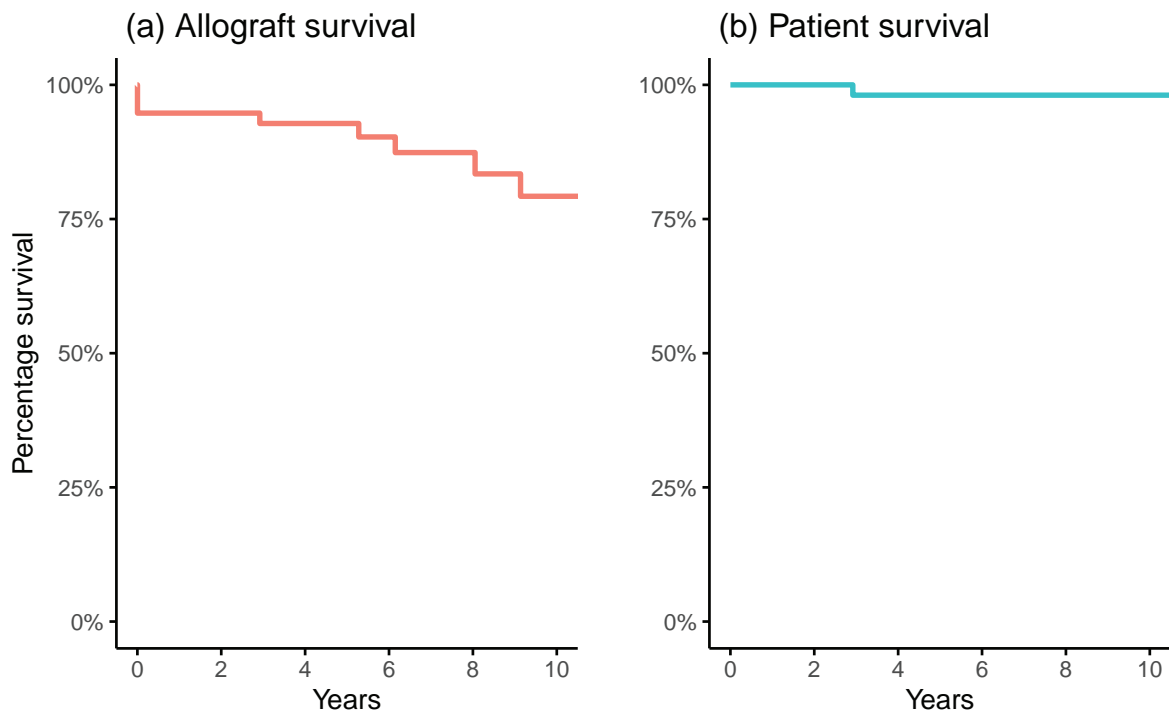
This section details survival outcomes for the period 2007 - 2023. There were **64** paediatric living donor transplants during this period, 57 were first and **7** were repeat transplants.

- One-year allograft survival for paediatric living donor transplant recipients for the period 2007 - 2023 was **95%**, and patient survival was **100%**. Ten year allograft and patient survival was **77%** and **98%** respectively (Table 4.11).

Table 4.11: Paediatric first living donor allograft and patient survival 2007 - 2023

Follow up time (Years)	Estimated allograft survival [95% C.I.]	Estimated patient survival [95% C.I.]
1	95.3 [86.2 - 98.5]	100.0 [... -...]
3	93.6 [83.7 - 97.5]	98.1 [87.1 - 99.7]
5	93.6 [83.7 - 97.5]	98.1 [87.1 - 99.7]
10	76.7 [58.0 - 88.0]	98.1 [87.1 - 99.7]

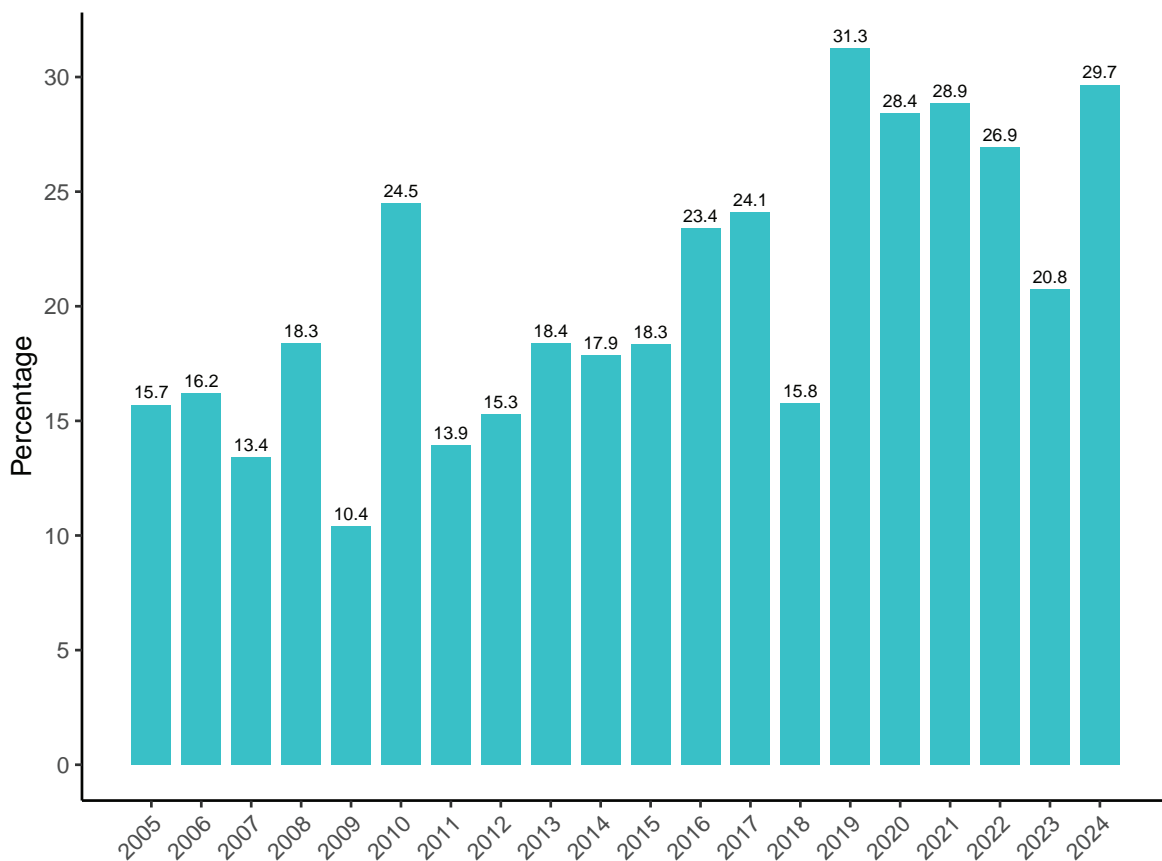
Figure 4.8: Paediatric first living donor kidney allograft and patient survival 2007 - 2023



## Delayed graft function

The rate of delayed allograft function (defined as the temporary requirement of dialysis within one week of transplant) for recipients of deceased donor kidneys has been high for the last 4 years, reaching over **31%** in 2019 and a similar level of **30%** in 2024 (Figure 4.9) reflecting the use of kidneys from donors after cardiac death (DCD) and extended criteria donors. There are significantly lower rates of delayed graft function for recipients of living donor kidneys and in 2024 the rate was **7%**.

Figure 4.9: Delayed allograft function for deceased donor recipients post-transplant 2005-2024



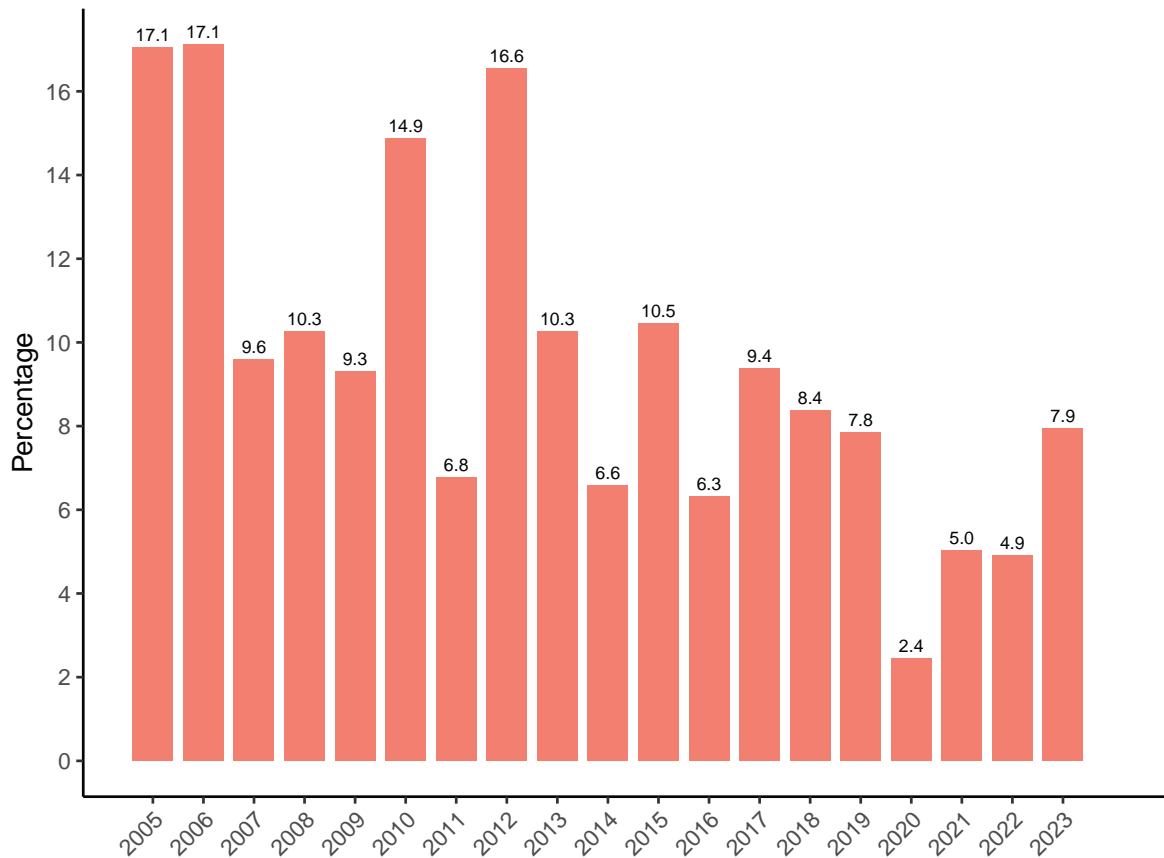
Delayed graft function rates are considerably lower for recipients of living donor kidneys resulting in **significant less time in hospital**



## Biopsy proven acute rejection

Instances of acute rejection, defined as either biopsy proven TCMR (T-cell mediated rejection) or ABMR (antibody mediated rejection) within the first year of transplantation have been relatively stable over the last decade with an average of 10% per year. As we assess acute rejection within the first year of transplantation the latest figure was for 2023 which was 8% for both deceased and living donor kidneys (Figure 4.10).

Figure 4.10: Acute rejection rate for living and deceased recipients post-transplant 2005-2023



# 5. International Comparisons

## Comparison of Irish Kidney Transplant Outcomes with European Union (Collaborative Transplant Study)

The Collaborative Transplant Study (CTS) is based on the voluntary cooperation of transplant centers from around the world. The CTS has active support of more than 400 transplant centers in 42 countries, with more than 800,000 data sets for kidney, heart, lung, liver, and pancreas transplants collected. The study is coordinated from the Institute of Immunology of the University of Heidelberg, Germany. The Heidelberg CTS team includes physicians, immunologists, computer scientists, statisticians and laboratory staff.

The study’s aims are strictly scientific. Aside from maintaining a transplant registry, the CTS conducts various prospective and retrospective studies on particular research topics.

The NKTS at Beaumont Hospital provides anonymised data through a secure encrypted portal to the CTS, and they, in return, have produced graphs showing the performance of the NKTS compared to other European centers. 2023 is the most recent year that data is available for survival analysis published by the CTS. Results are presented for adult and paediatric recipients for both deceased and living donor kidneys. The time frames presented below were requested to best reflect NKTS activity and enhance comparisons with other centers.

Figure 5.1: EU (CTS) adult **first** deceased-donor kidney **patient** survival 1994-2023

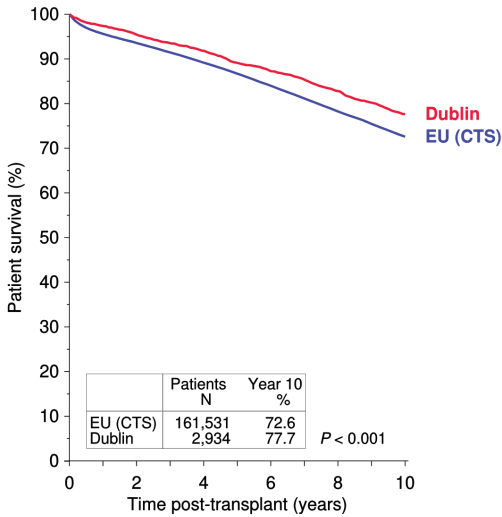


Figure 5.2: EU (CTS) adult **first** deceased-donor kidney **allograft** survival 1994-2023

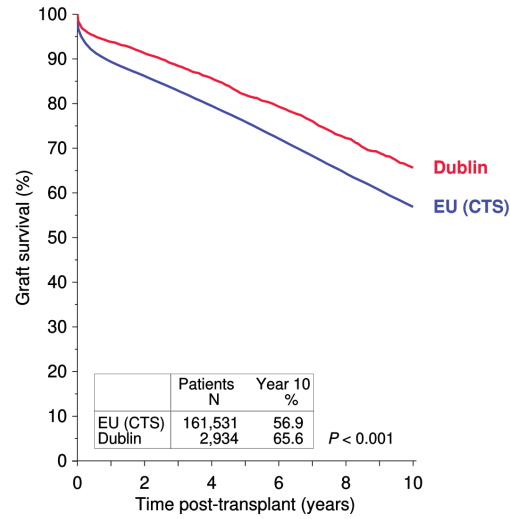


Figure 5.3: EU (CTS) adult **retransplant** deceased-donor kidney **allograft** survival 1994-2023

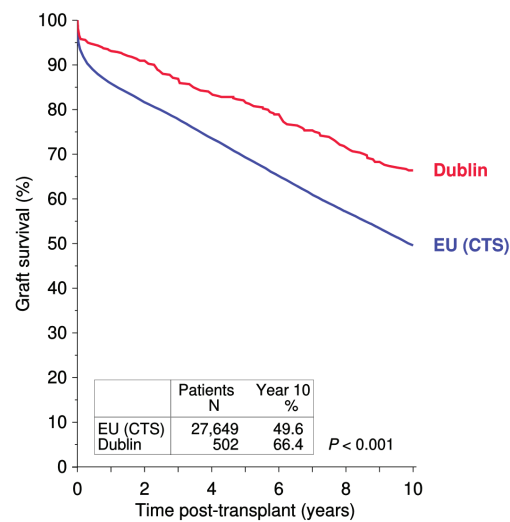




Figure 5.4: EU (CTS) adult **first** living-donor kidney **patient** survival 2007-2023

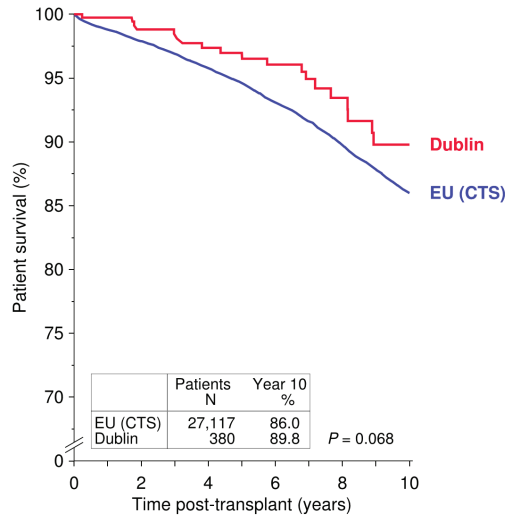


Figure 5.5: EU (CTS) adult **first** living-donor kidney **allograft** survival 2007-2023

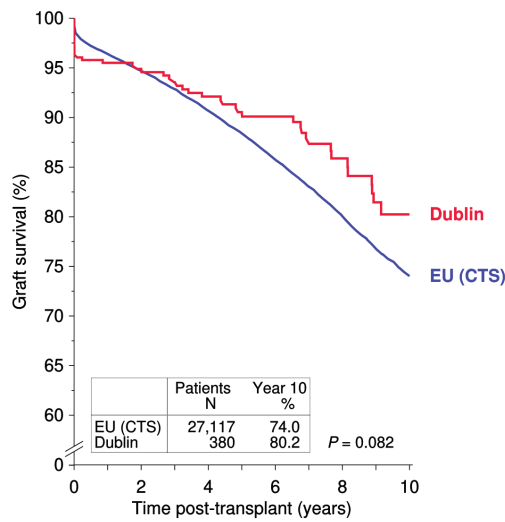


Figure 5.6: EU (CTS) paediatric **first** deceased-donor kidney **allograft** survival 1994-2023

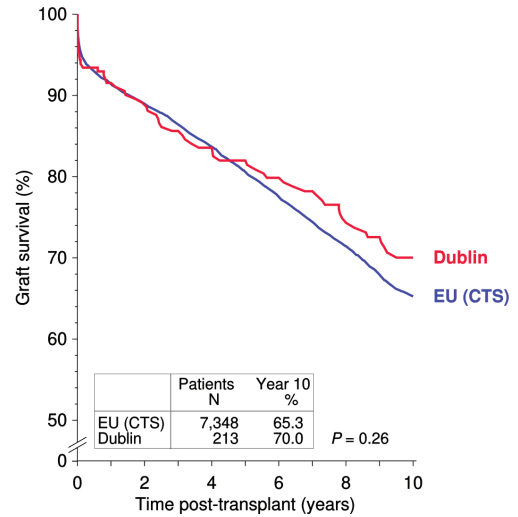
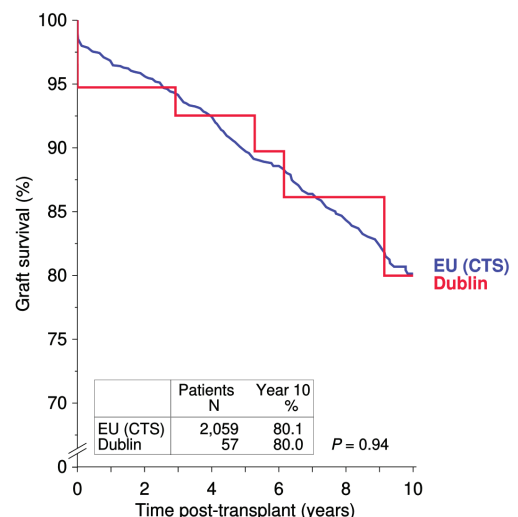


Figure 5.7: EU (CTS) paediatric **first** living-donor kidney **allograft** survival 2007-2023



## Comparison of transplantation rates between European Renal Association (ERA) countries and Ireland

- The ERA/EDTA Registry collects data on renal replacement therapy (RRT), rates and outcomes of kidney transplantation and donation via the national and regional renal registries in Europe. For this section comparisons are made between 20 ERA/EDTA countries for transplant rates.

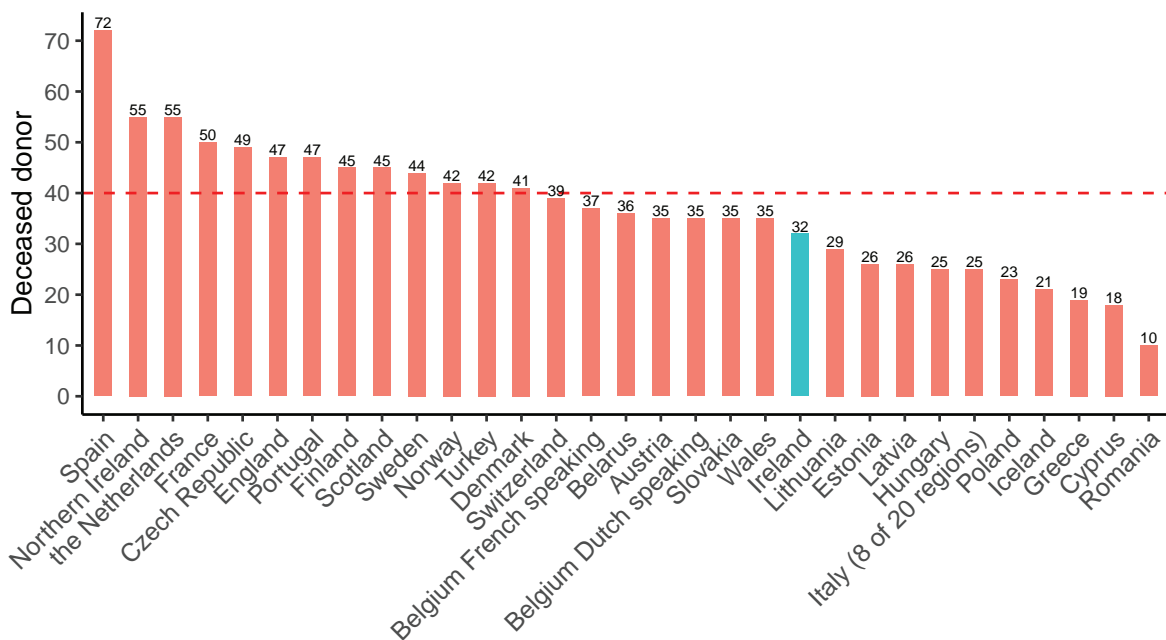
- Data was retrieved from the 2022 (most recent) ERA/EDTA report released in November 2024. Rates for all centres improved somewhat from the previous year with Covid-19 having less impact on total numbers transplanted for both deceased and living donor kidneys.

- The overall kidney transplant rate PMP (per million population) was **32** for Ireland during 2022 compared to the EDTA overall registry rate of **40** PMP. The countries with the highest rates of kidney transplantation were Spain, Northern Ireland, The Netherlands and France with **72**, **55**, **55** and **50** PMP respectively.(Figure 5.8)

- Deceased donor kidney transplant rate PMP was **26** for Ireland in 2022, compared to the overall registry rate of **27** PMP. The countries with the highest rates of deceased donor kidney transplantation were Spain, The Czech Republic, France and Portugal with **64**, **45**, **42** and **41** PMP respectively(Figure 5.9)

- Living donor kidney transplant rate PMP was **6** for Ireland in 2022 compared to a registry overall rate of **13** PMP. Countries with the highest rates of living donor kidney transplantation were Turkey, Northern Ireland, The Netherlands and Scotland with **39**, **28**, **28** and **16** PMP respectively.(Figure 5.10)

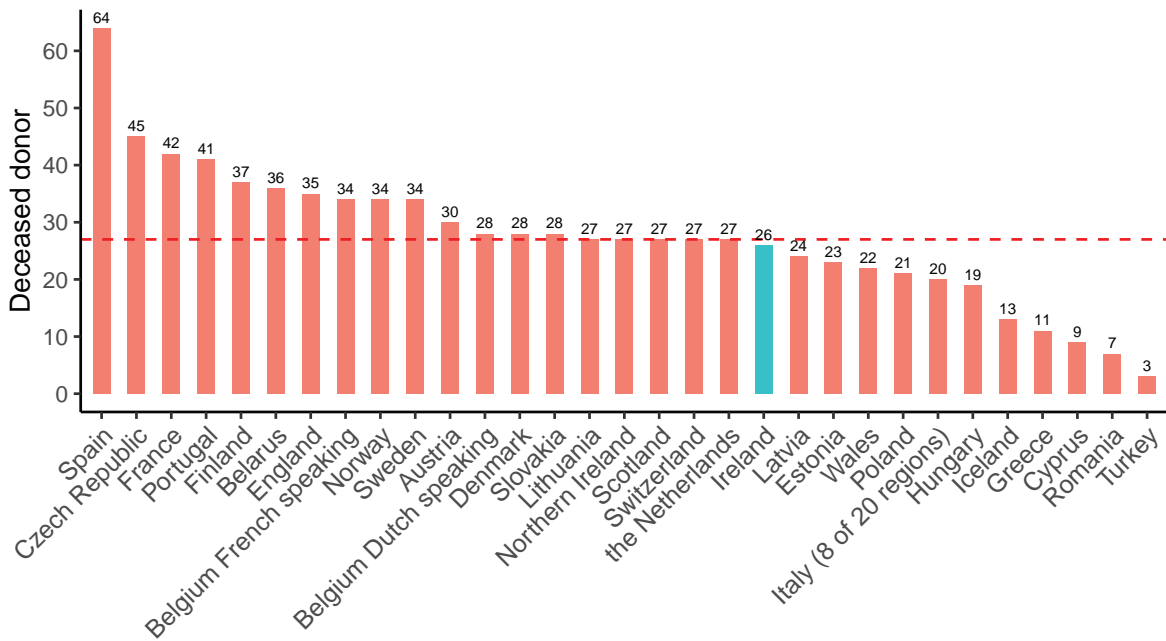
Figure 5.8: Total rates of transplantation PMP for EDTA countries and Ireland for 2022



Note: dashed line = Average PMP for EDTA countries

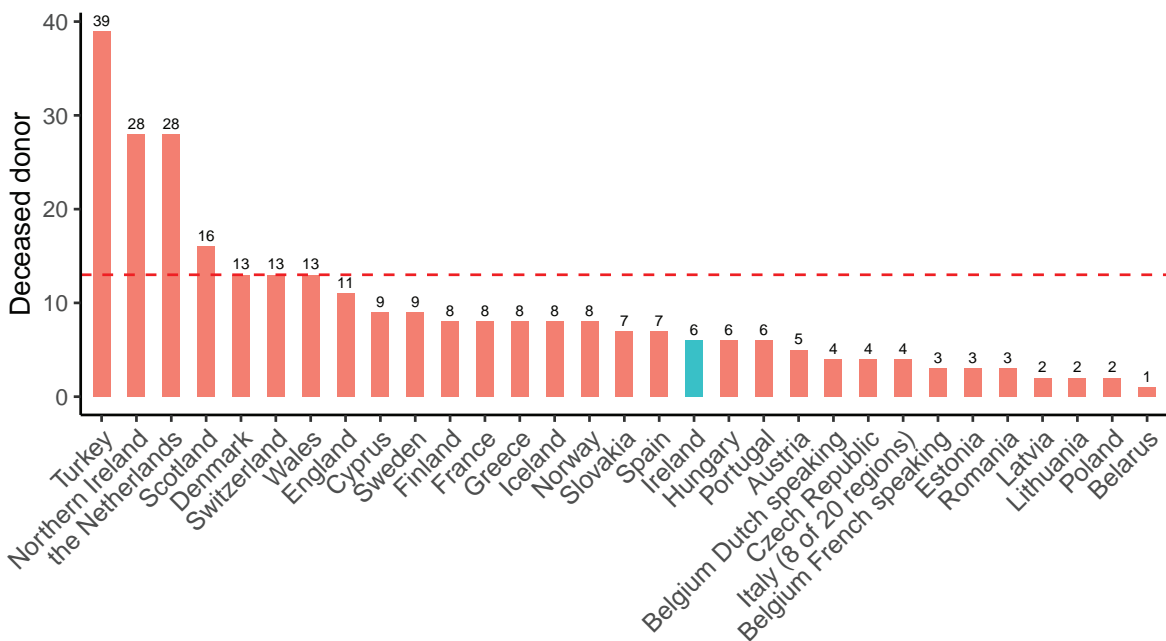


Figure 5.9: Deceased donor rates of transplantation PMP for EDTA countries and Ireland for 2022



Note: dashed line = Average PMP for EDTA countries

Figure 5.10: Living donor rates of transplantation PMP for EDTA countries and Ireland 2022



Note: dashed line = Average PMP for EDTA countries



# The Power to Save A Life: Living Kidney Donation



Less than Half the European average at 13 PMP

## Living Donation: Key Facts

- Living kidney donation where possible supports **critical shortages** of deceased donors.
- Living donor can be biologically related **OR** unrelated.
- If tests reveal living donor is not a suitable match, donation/transplant can proceed through the “paired Kidney Exchange” programme with the UKLSS, either by direct or indirect donation.

**In Summary:**  
Deceased and Living Donors are **critical**

## Benefits

Living Kidney Transplant	V/S	Deceased Kidney Transplant
8 Months.	Wait Time	23 Months.
17 Months	Time on Dialysis	36 Months
77% at 10 years	Graft Survival	65% at 10 years
Donor and recipient health is optimised. Surgery is scheduled	Scheduling	Deceased donation cannot be predicted, allocation of kidney is dependant on multiple donor and recipient variables.
Reduced risk of delayed graft function and rejection of kidney transplant	Rejection Risk	Increased risk of delayed graft function and rejection of kidney

### For more information

Living kidney donors do live a healthy and active life with just one kidney

### KIDNEY TRANSPLANT INFORMATION

Contact:  
Renal Transplant Co-ordinator  
Beaumont Hospital

Tel: (01) 809 2759 / 2298

Ref <sup>1</sup>: National Renal Office - Renal Services report 2024  
Available at: [www.hse.ie/eng/renal/resources](http://www.hse.ie/eng/renal/resources)



## 6. Living Donor Programme

### Introduction

Donor organ shortage is a major problem for patients globally resulting in long waiting times for organ transplantation. Receiving a kidney transplant from a living donor has many advantages over deceased donation including increased graft and patient survival. This is evidenced by comparing Table 4.2 and 4.6 (deceased donor adult allograft and patient outcomes) with Table 4.8 (living donor adult allograft and patient outcomes). There are also reductions in rejection rates and waiting times, plus the added benefit that surgery can be scheduled. While blood group incompatibility can be a barrier to direct donation, it is possible to proceed to direct donation under certain circumstances. In 2024, we performed a blood group incompatible transplant and are reviewing other potential blood group incompatible transplants for 2025.

Living donor recipients require monitoring in ICU in the early postoperative period and future growth in living donation will necessitate increased ICU capacity.

Living donors do lead a very healthy life after donation. The health of the kidney donor should be monitored regularly. The NKTS encourages all living donors to have regular follow up with their nephrologist to ensure they suffer no ill events post nephrectomy. Long term follow up data on kidney donors provides insight and information on the long term safety and possible health risks of donation for the donor. As stated in Article 15 of the “Directive 2010/53/EU of the European Parliament” countries within the European Union are obliged by law to have a follow up system for living kidney donors to which the NKTS complies with this legislation.

The Living Donor Programme in 2024 resulted in **124** potential donors being immunologically evaluated. This reflected an increase of **3%** presenting for evaluation compared to 2023. Of this number 78 were medically assessed and underwent investigations to determine suitability to proceed with live donation, 60 for direct donation and 18 were referred to the paired kidney exchange programme due to incompatibility with their potential recipient.

Since 2009 recipients who have an identified donor but who is incompatible due to blood group, tissue type or both, size and occasionally other reasons are referred to the UKLKSS. Of note, these donor recipient pairs are now assessed in Belfast as part of cross border collaboration which has practical advantages for all involved (e.g. travel and access). Of the 15 donor /recipient pairs in the UKLKSS at end of 2023, **9** proceeded to donation in 2024 and a further **14** pairs are enrolled at beginning of 2025 with remaining awaiting review in Belfast. This represents the highest level of activity since the beginning of the programme and provides access to transplant to this particular challenging group.



## Summary of Living Donor profiles and outcomes

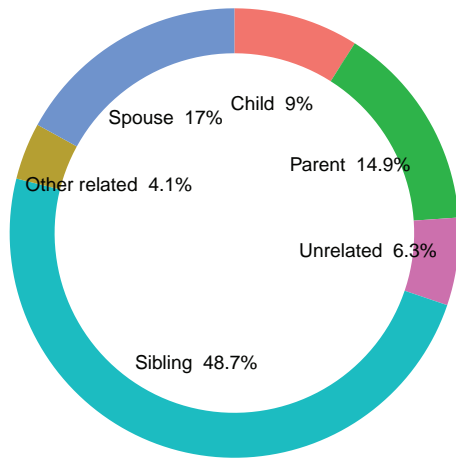
- There were **30** living donor kidneys transplanted in 2024
- In the period 2001 - 2024 donation to adults occurred mainly between siblings (**49%**), spouses (**17%**), parents (**15%**) and children (**9%**). However for paediatric recipients, as expected, **84%** are parental donors (Figure 6.1)
- Median age at donation was **44** overall. Spousal and unrelated donors are generally of the older age groups while the youngest age groups are identified in adult children donating to parents (**33 years**). Donor ages ranged from **26 to 68**. The percentage of donor type by age groups are presented in Figure 6.2.
- Overall, **57%** of living donors were female in 2024 slightly up from 54% for the overall live donor period (Figure 3.10).
- The median time from day assessment to date of donation was **3 months** for 2024.
- During 2024 the median length of in-hospital stay post-operatively was **4 days**, the same as for the period 2021 - 2024 as a whole. For the time period 2001-2001 this was **7 days** reducing to 5 days for the periods 2011 - 2015 and 2016 - 2020 (Figure 6.3). The overall reduction in inpatient length of stay in recent years is due to the fact that virtually all donor nephrectomies are performed using minimally invasive laparoscopic techniques allowing for accelerated post-operative recovery.
- Post-operatively all living donors are reviewed by the surgical team and are then offered an annual follow-up with their local nephrologist. **77%** of living donors are availing of this service with a median follow up time of **6.9** years.
- At follow-up, **13%** of living donors developed hypertension post donation ranging from **9%** in the 20 – 34 age group to **23%** in the age group > 55 years (Figure 6.4).
- As expected the renal function (eGFR) falls post donation, but rises in the following years ranging from a median of **99 ml/min/1.73m<sup>2</sup>** (pre donation) to **67 ml/min/1.73m<sup>2</sup>** at 5 years post donation (Figure 6.5).



## Donor characteristics at donation date

Figure 6.1: Adult/ Paediatric Recipient by donor type of relation 2001 - 2024

Adult Recipient



Paediatric Recipient

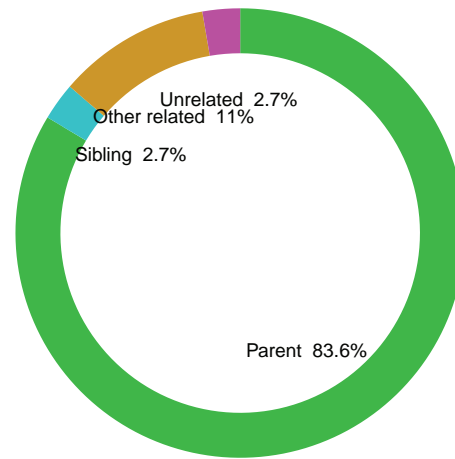
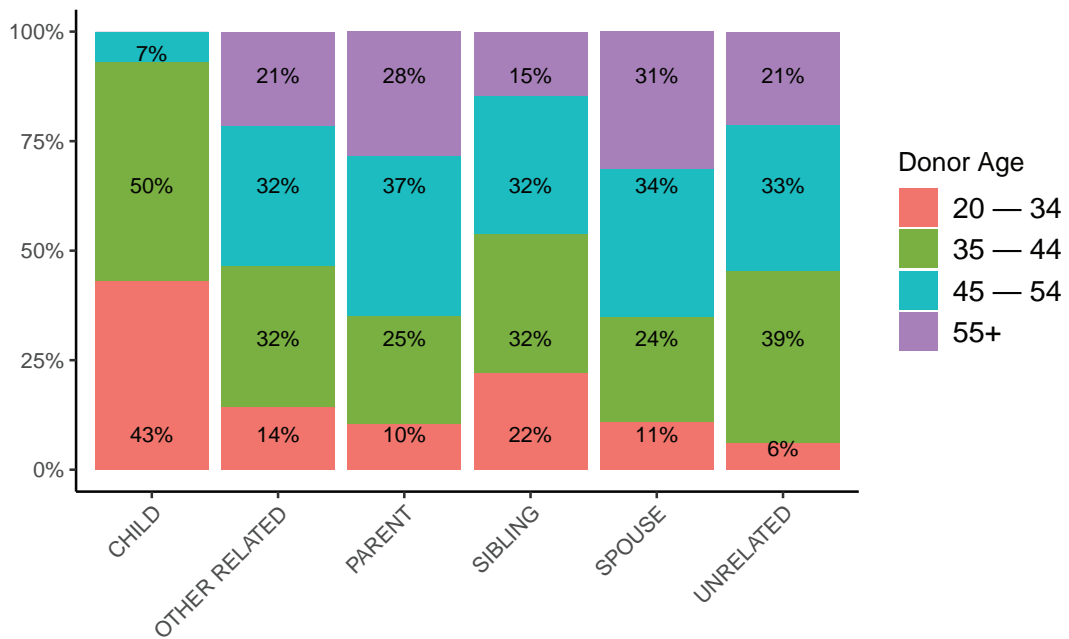


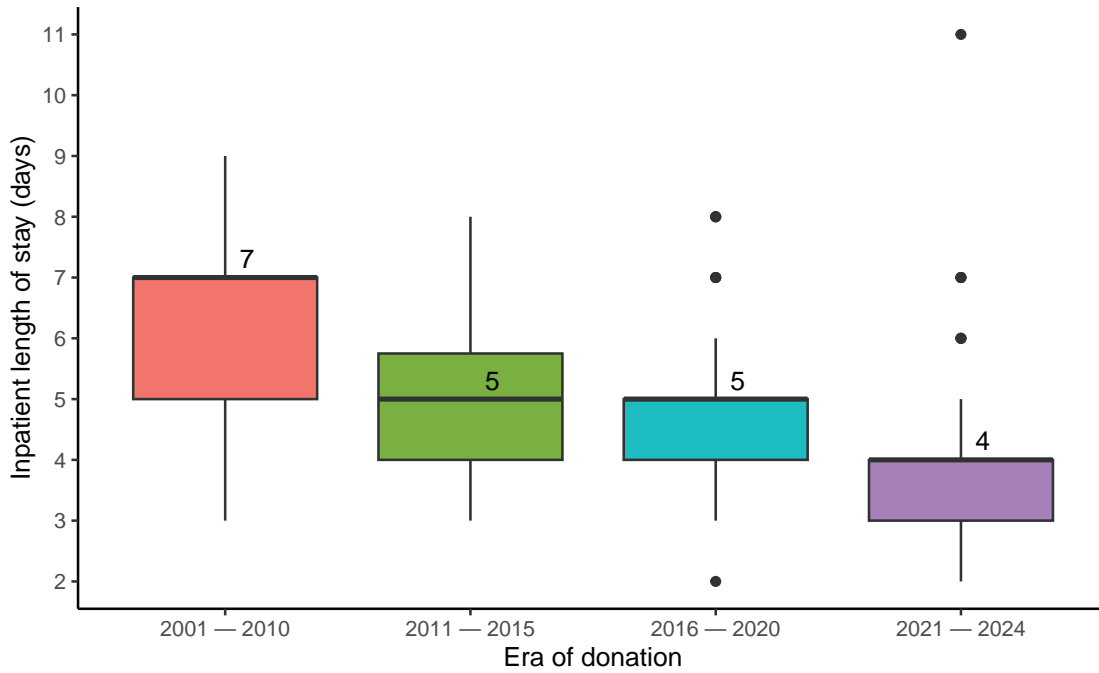
Figure 6.2: Percentage of donor age group by donor relation 2001 - 2024





## Donor outcomes post donation

Figure 6.3: Median Inpatient length of stay of living donors by time period of donation 2001 - 2023



The real benefit of receiving a living donor kidney transplant over deceased is apparent at 5 years, with graft and patient survival of **89%** and **96%** v **82%** and **89%**.



Figure 6.4: Percentage of post donation hypertension by donor age group 2001 - 2024

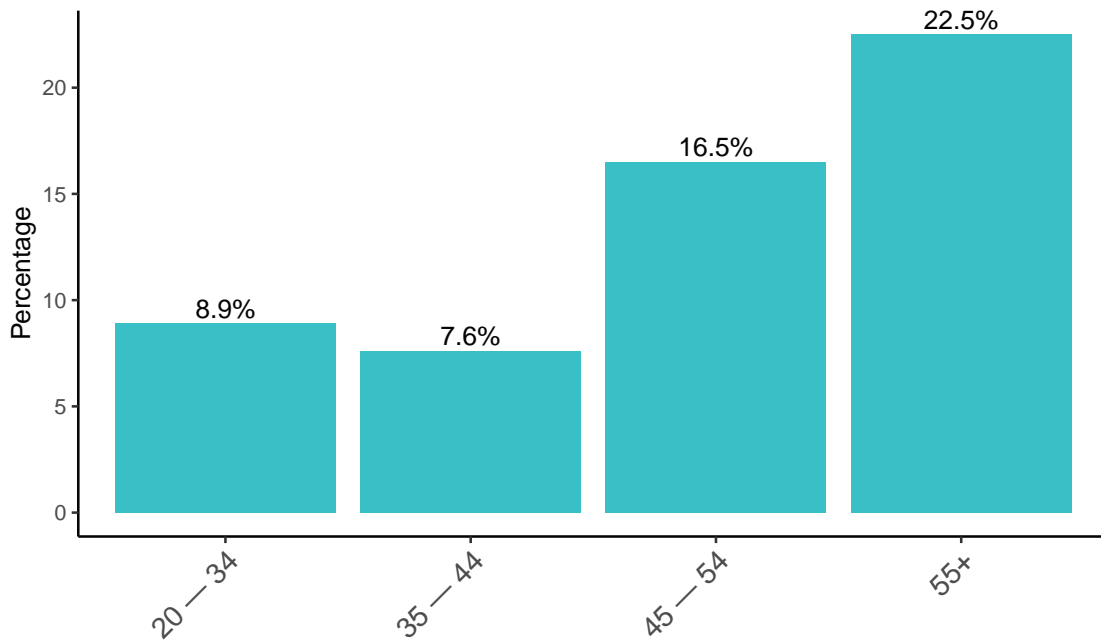
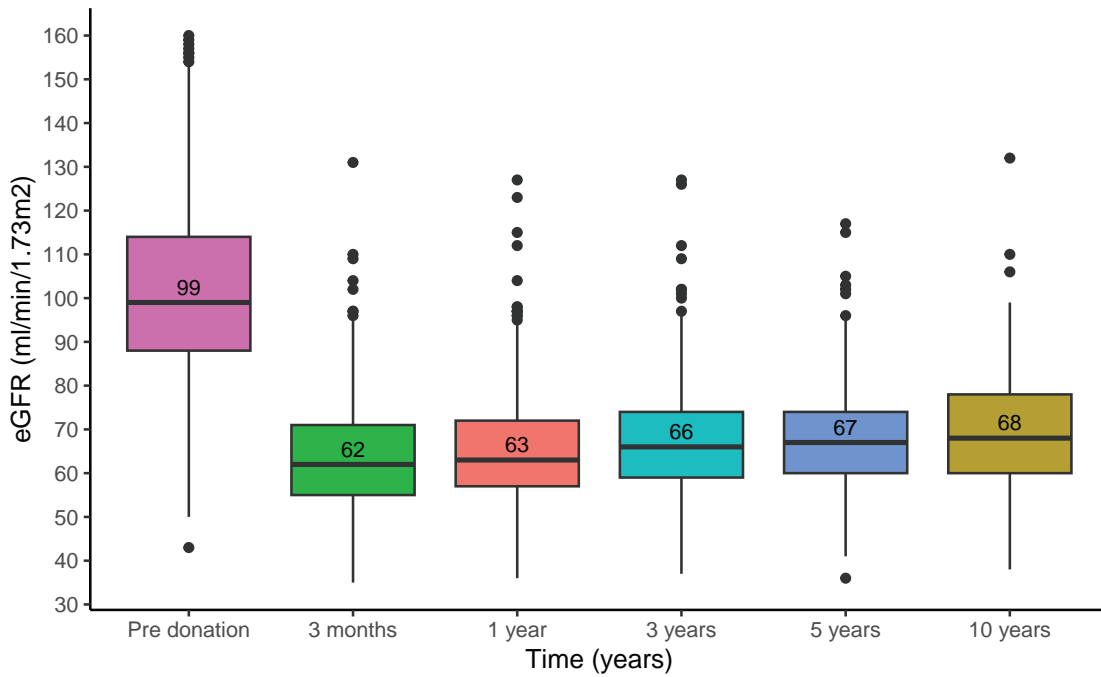


Figure 6.5: Median and interquartile eGFR for living donors pre and post donation 2001 - 2024



# Acknowledgements

In preparing for this annual report, the Directorate Team would like to acknowledge the generosity of all the kidney donors and their families whose “Gift of Life “makes each transplant a reality. We also recognise and acknowledge the extremely hard work and dedication of the entire Transplant Team and indeed all the staff in Beaumont Hospital who commit on a daily basis to delivering the highest quality of care to our recipients and donors.

“Individuals make a difference, but a team make miracles.“

We are indebted to our colleagues in the renal centers around Ireland for continuing to provide long term follow up data to the Renal Transplant and Living Donor registries in order to produce this report. In particular, we wish to acknowledge the continued support from Transplant Coordinators and the Clinical Nurse Specialists in the regional centers in providing us with timely data, without which this report could not be produced.





## National Kidney Transplant Service

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[www.beaumont.ie/kidneycentre](http://www.beaumont.ie/kidneycentre)



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Beaumont Hospital Foundation, Beaumont Hospital, Dublin 9.