

2020 Australian Donation and Transplantation Activity Report

Transplantation is an effective and well-established treatment that saves lives, restores health and improves quality of life.

Transplantation relies on the donation of organs and tissues.

There are currently around 1,650 Australians waitlisted for an organ transplant.

- ▶ In 2020, Australia's organ donation and transplantation rates dropped due to the emergence of COVID-19 in Australia.
- ▶ Challenges facing hospitals and with logistics – including COVID-19 restrictions, flight reductions and border closures – affected the national program throughout the year.
- ▶ The transplant sector took precautionary steps and suspended the adult kidney and pancreas transplant programs from 24 March through to mid-May.
- ▶ Elective surgery was suspended from 25 March, including kidney transplants and the Australia and New Zealand Kidney Exchange (ANZKX) Program.
- ▶ Donation and transplantation doctors and nurses have worked incredibly hard to minimise any impacts on people needing a transplant.

At a glance	Diff. to 2019		Diff. to 2019
463 deceased organ donors	-16%	1,270 organ transplant recipients	-12%
182 living organ donors	-24%	182 living organ transplant recipients	-24%
1,318 deceased eye donors	-13%	2,277 corneal transplant recipients	-6%
290 deceased tissue donors	-7%	442 deceased tissue donations	-16%

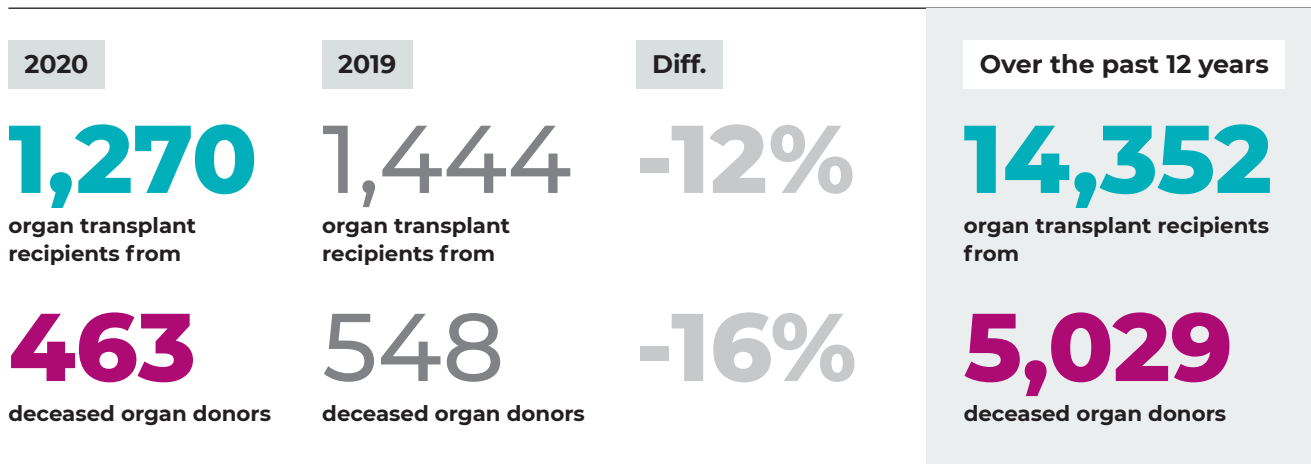
58% of families consented to donation when asked in a hospital setting in 2020

We thank and acknowledge the generous Australians and their families who chose to save the lives of others in 2020 by saying 'yes' to donation.

We also acknowledge the dedication and commitment of our donation and transplantation doctors, nurses and support staff.

Part 1 Organ donation and transplantation

Deceased organ donation and transplantation



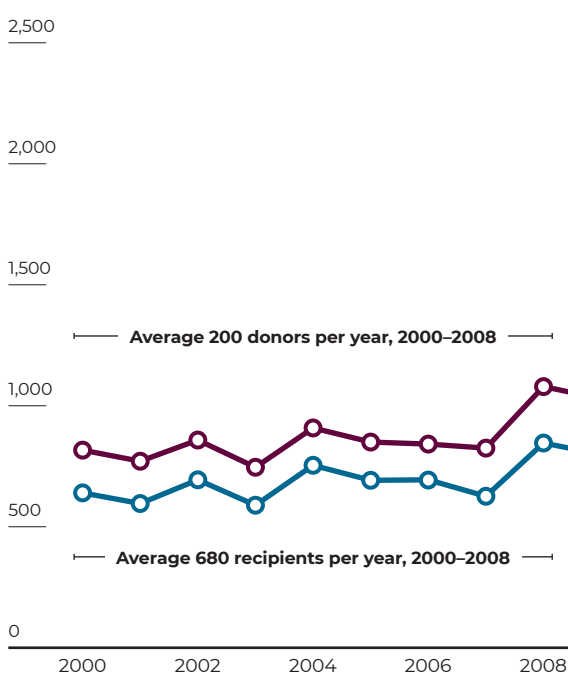
- In 2020, Australia's deceased organ donation and transplantation rates dropped due to the emergence of COVID-19 in Australia.
- There was a 12% decrease in the number of people receiving a transplant and a 16% decrease in the number of donors compared to 2019.
- While the number of organ donors and transplant recipients dropped during March and April due to the temporary suspension of the kidney and pancreas.

transplant programs, 1,270 Australians still received transplants from 463 deceased organ donors in 2020.

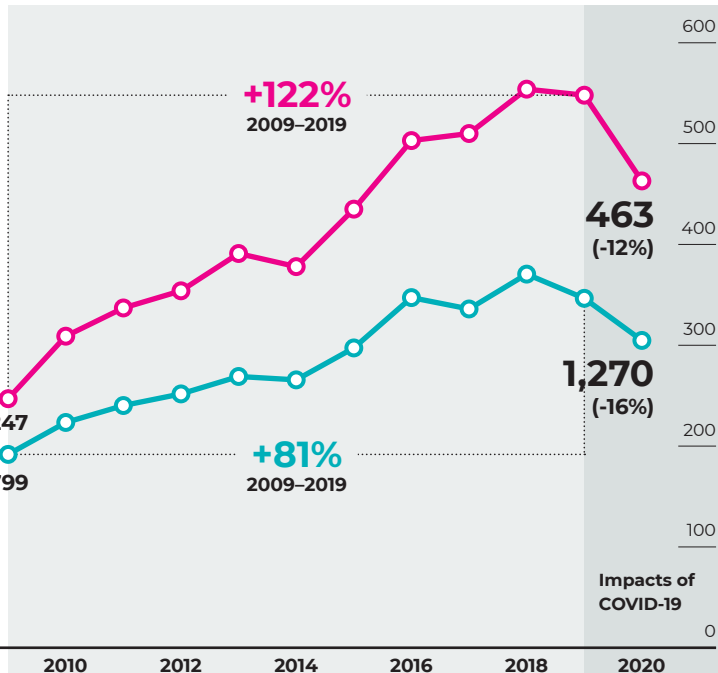
- Australia's donation rate in 2019 had doubled since the Australian Government's national program began in 2009. Our nationally coordinated program focuses on a best-practice clinical system driven by DonateLife specialists in hospitals combined with increasing community awareness.

Deceased organ donation and transplant recipients 2000–2020

Transplant recipients

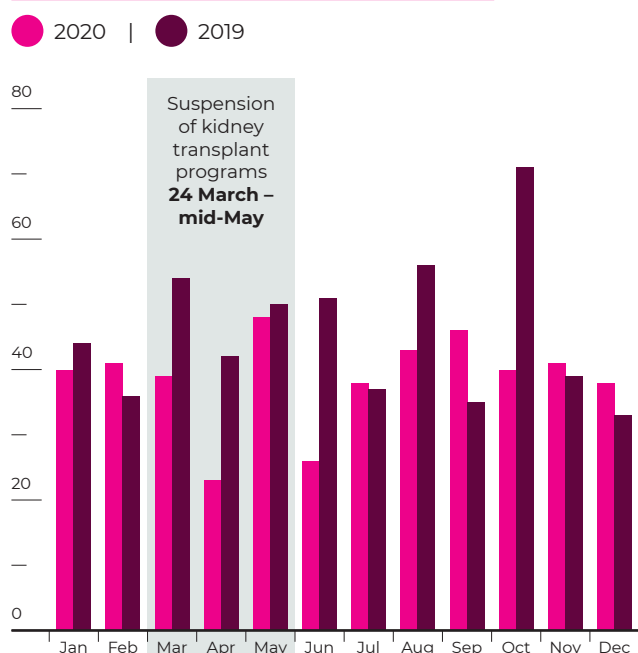


Deceased organ donors

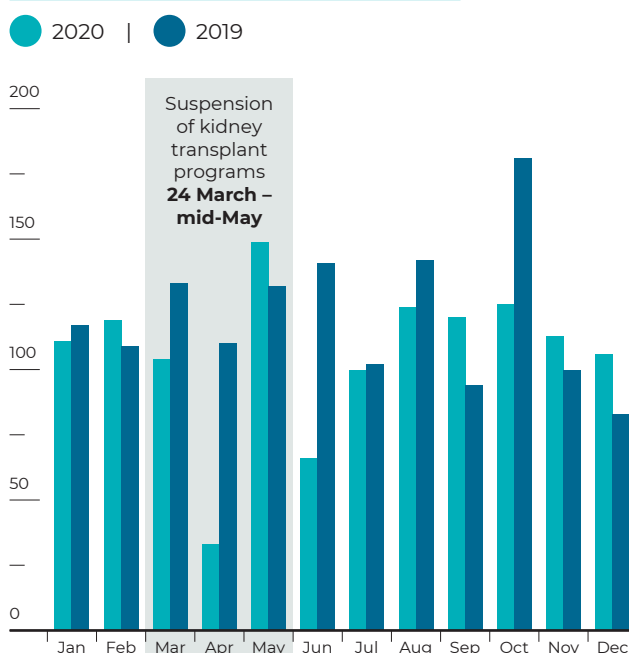


Deceased organ donation and transplant recipients 2020

Deceased organ donors 2020 and 2019

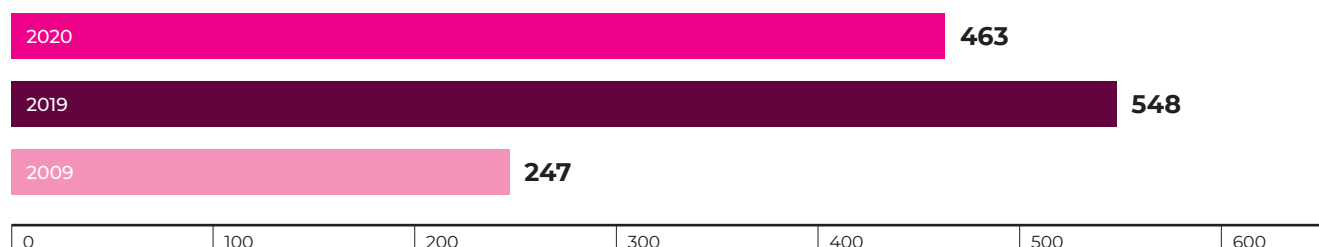


Transplant recipients 2020 and 2019



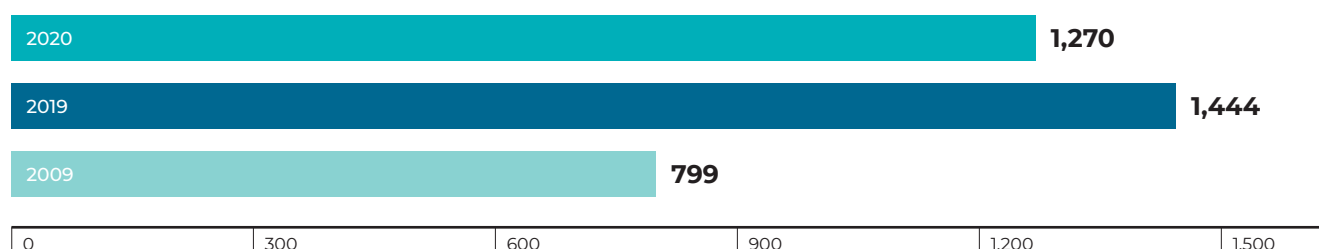
Deceased organ donors 2009, 2019 and 2020

● 2020 | ● 2019 | ● 2009

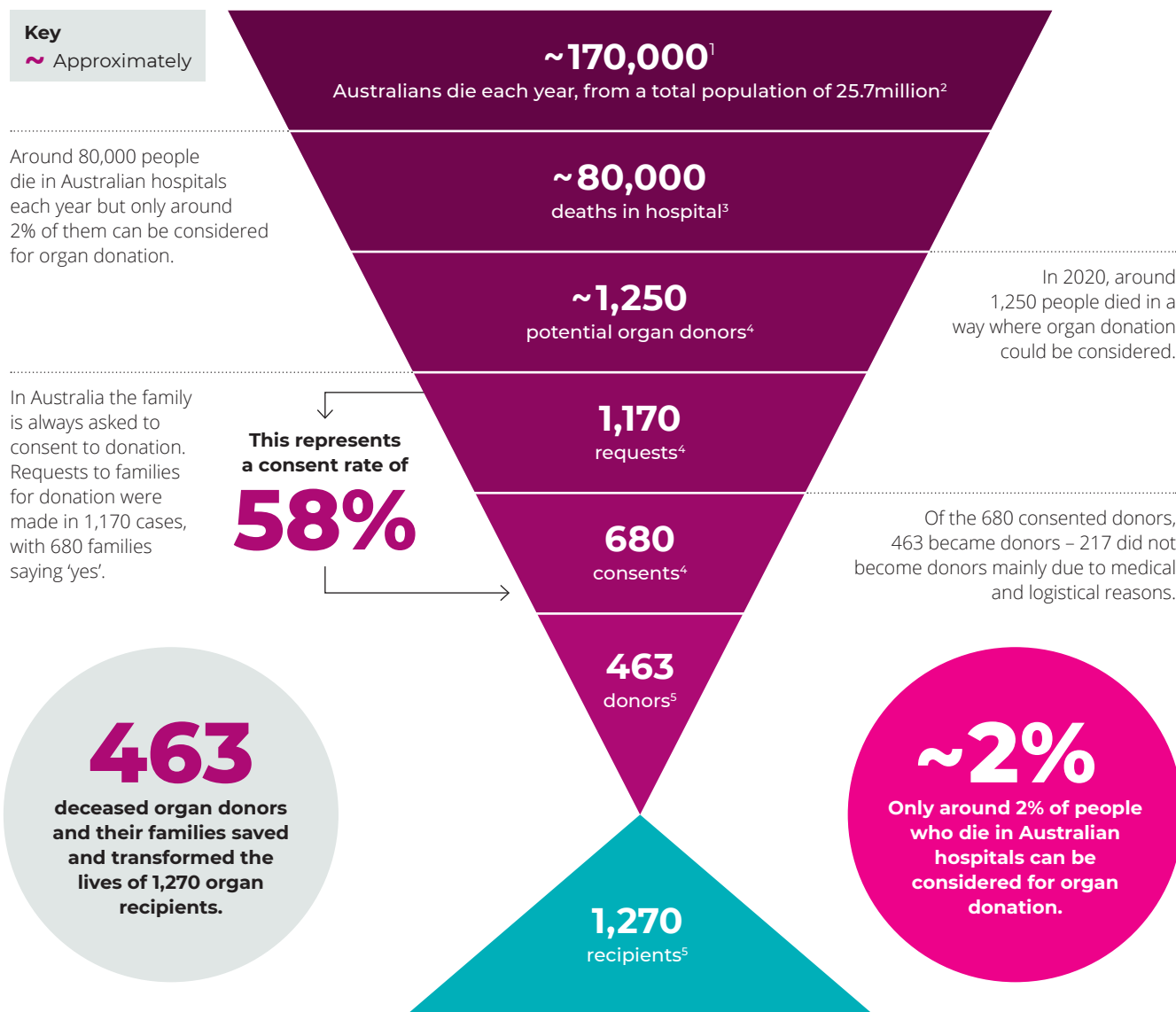


Transplant recipients from deceased donors 2009, 2019 and 2020

● 2020 | ● 2019 | ● 2009



Australia's potential deceased organ donor population and transplantation outcomes



Organ donation is a rare event.



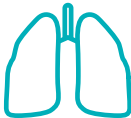



Not everyone can become an organ donor when they die. To be an organ donor, a person must die in a hospital's intensive care unit (ICU) or emergency department (ED) and be medically assessed as suitable to donate organs for transplantation.

- ▶ With donation possible in so few cases, and with so many people needing an organ transplant, it is vital more people say 'yes' to donation.
- ▶ There are some medical conditions, such as active cancer, which may mean the patient is not a suitable organ donor.
- ▶ There are currently around 1,650 Australians waitlisted for a transplant and more than 12,000 additional people are on dialysis – many who may need a kidney transplant.
- ▶ Many more people can become eye and tissue donors. Eye and other tissues can be donated up to 24 hours after death, and donors do not have to die in a hospital.

Sources

- 1 Australian Bureau of Statistics. Causes of death, Australia, 2019 (Released 23/10/2020).
- 2 Australian Bureau of Statistics. Estimated Resident Population, 30 June 2020 (Released 17/12/2020).
- 3 Australian Institute of Health and Welfare 2020. Admitted patient care 2018–19: Australian hospital statistics. Health services series no. 90. Cat. no. HSE 225. Canberra: AIHW.
- 4 DonateLife Audit, February 2021.
- 5 Deceased organ donation in Australia, Australia and New Zealand Organ Donor Registry, January 2021.

Organ transplants from deceased donors

	Kidneys	Livers	Lungs	Heart	Pancreas	Intestine
						
2020	704	276	158	148	47	1
2019	857	310	183	113	40	0
Diff.	-153	-34	-25	+35	+7	+1

- Kidneys make up more than half of organs transplanted, followed by liver, lungs and heart. There were 153 less kidney transplants (18% down on 2019).
- There were also 25 less lung transplants (14% down) and 34 less liver transplants (11% down on 2019).
- The number of hearts and pancreas transplants increased compared with 2019. There were 35 more heart transplants (31% up on 2019) and seven more pancreas transplants (18% up on 2019).
- Heart transplants increased notably in NSW where St Vincent's Hospital has a world leading program transplanting hearts from circulatory death donors.

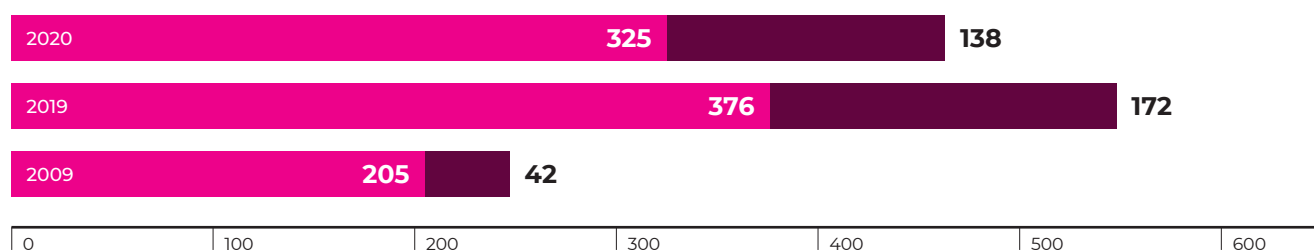
Organ transplants in Australia and New Zealand

In 2020, there were a small number of transplants in Australia of suitable organs (primarily livers, lungs and occasionally hearts) from New Zealand donors that were not able to be matched in New Zealand. Similarly, a small number of organs from Australian donors were transplanted in New Zealand. In previous years only organs transplanted from Australian donors have been reported.

The Transplant Society of Australia and New Zealand is funded by the Organ and Tissue Authority to develop and maintain protocols for the allocation of deceased organ donors to waitlisted patients across Australia and New Zealand.

Deceased organ donors by donation pathway

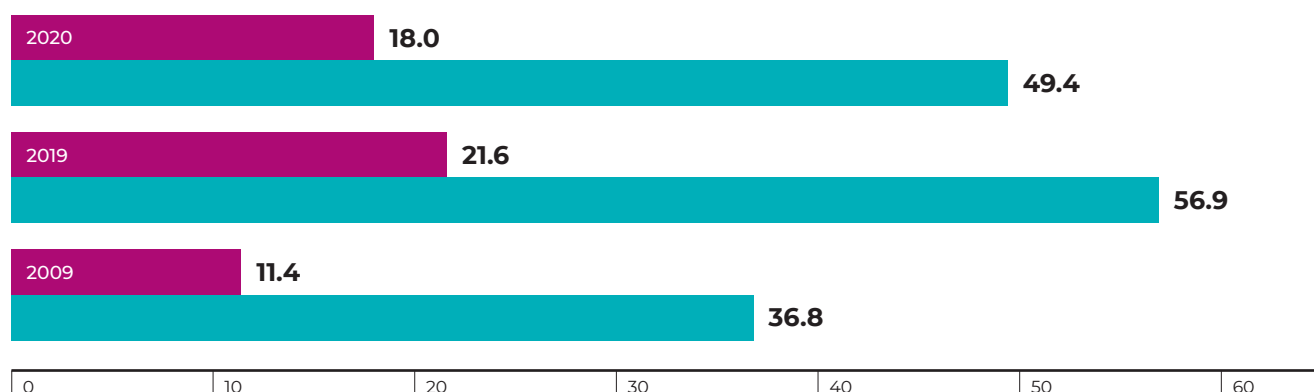
● DBD | ● DCD



- There are two pathways to deceased donation: Donation after Brain Death (DBD) and Donation after Circulatory Death (DCD).
- Most donors are from the DBD pathway. In 2020, 325 deceased organ donors (70%) came from the DBD pathway, with 138 (30%) from the DCD pathway.
- There was a 14% decrease in the number of donors from the DBD pathway and a 20% decrease in the number of donors from the DCD pathway. Typically DCD results in a lower number of organs suitable for transplantation compared with DBD.

Deceased organ donation and transplantation rates

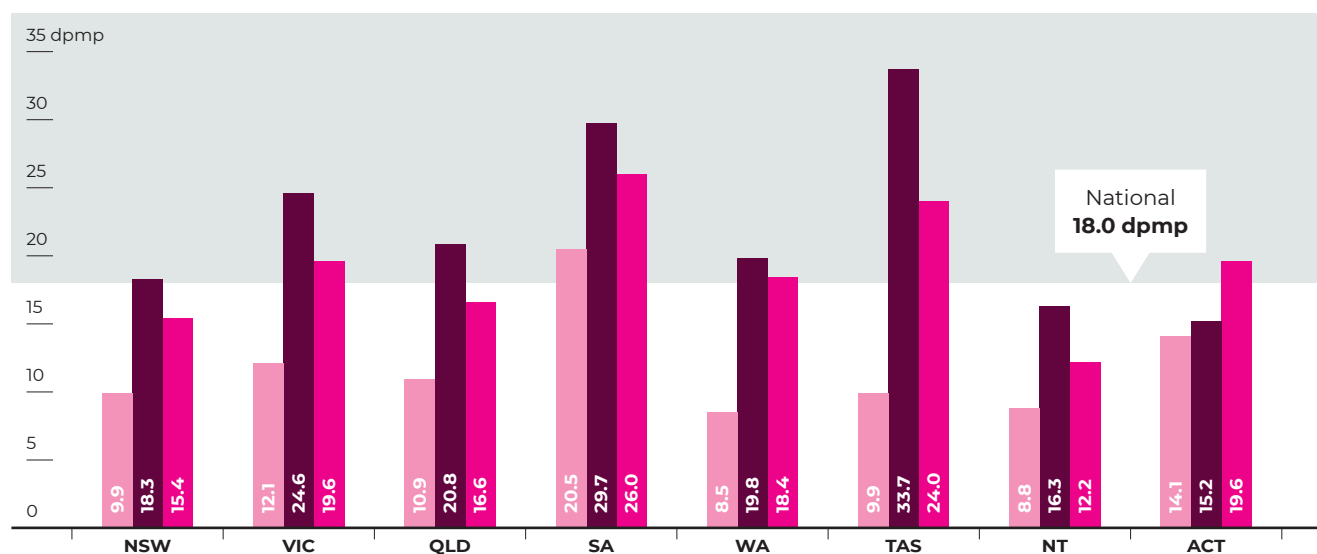
● dpmp | ● trmpmp



- The 2020 donation target for deceased donation was 25.0 donors per million population (dpmp).
- The 463 deceased organ donors in 2020 resulted in a national donation rate of 18.0 dpmp, a decrease from the rate in 2019 (21.6 dpmp).
- The transplantation rate was 49.4 transplant recipients per million population (trmpmp); lower than 2019 (56.9 trmpmp).

Deceased organ donation rates by jurisdiction

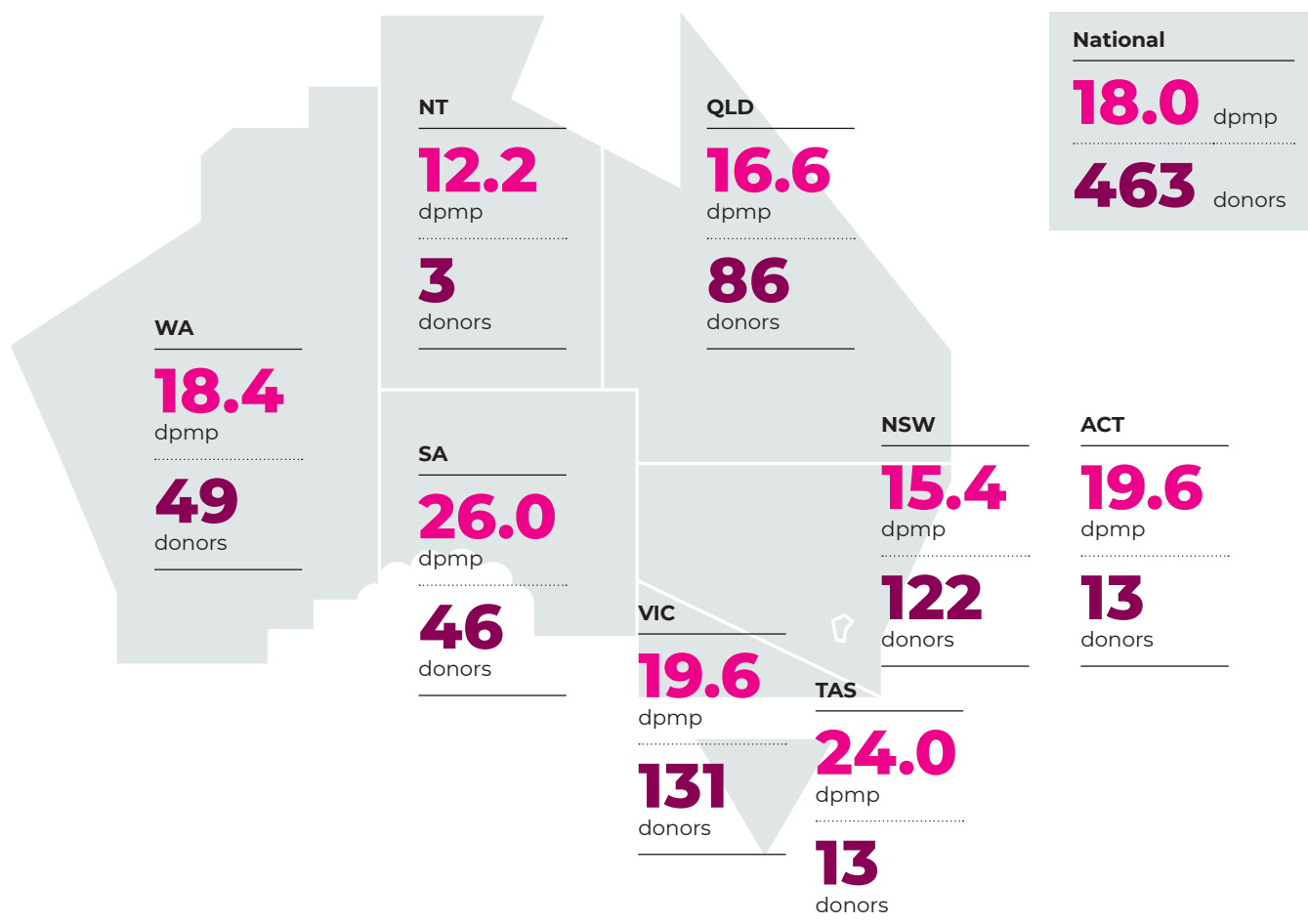
2009 | 2019 | 2020



Note: The relatively small populations of the Northern Territory, the Australian Capital Territory and Tasmania can result in substantial fluctuations in outcomes and donation rates from year to year.

- State and territory outcomes in 2020 continued to demonstrate variation, with donation rates ranging from 12.2 dpmp to 26.0 dpmp.
- South Australia was the leader in donation outcomes, achieving a donation rate of 26.0 dpmp, followed by Tasmania (24.0 dpmp).

Deceased organ donors and donation rates by jurisdiction



Consent rates

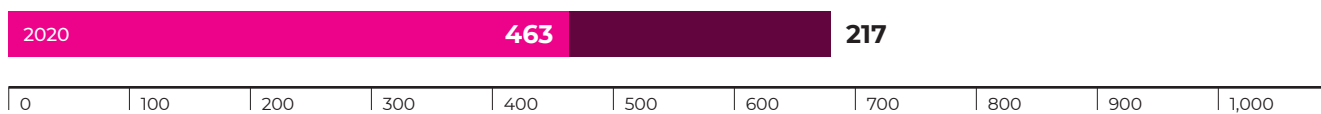
58%

of families consented to donation when asked in a hospital setting in 2020

- ▶ In Australia, families of potential donors are always asked to consent to their family member becoming a donor.
- ▶ Our national consent rate dropped to 58 per cent in 2020 meaning less people said “yes” to donation.
- ▶ There is no doubt that the COVID-19 restrictions in hospitals contributed to this decrease. Even in such challenging circumstances, families were still motivated to donate and help others through donation.
- ▶ Increasing the number of families saying ‘yes’ to donation is critical to further growth in donation.

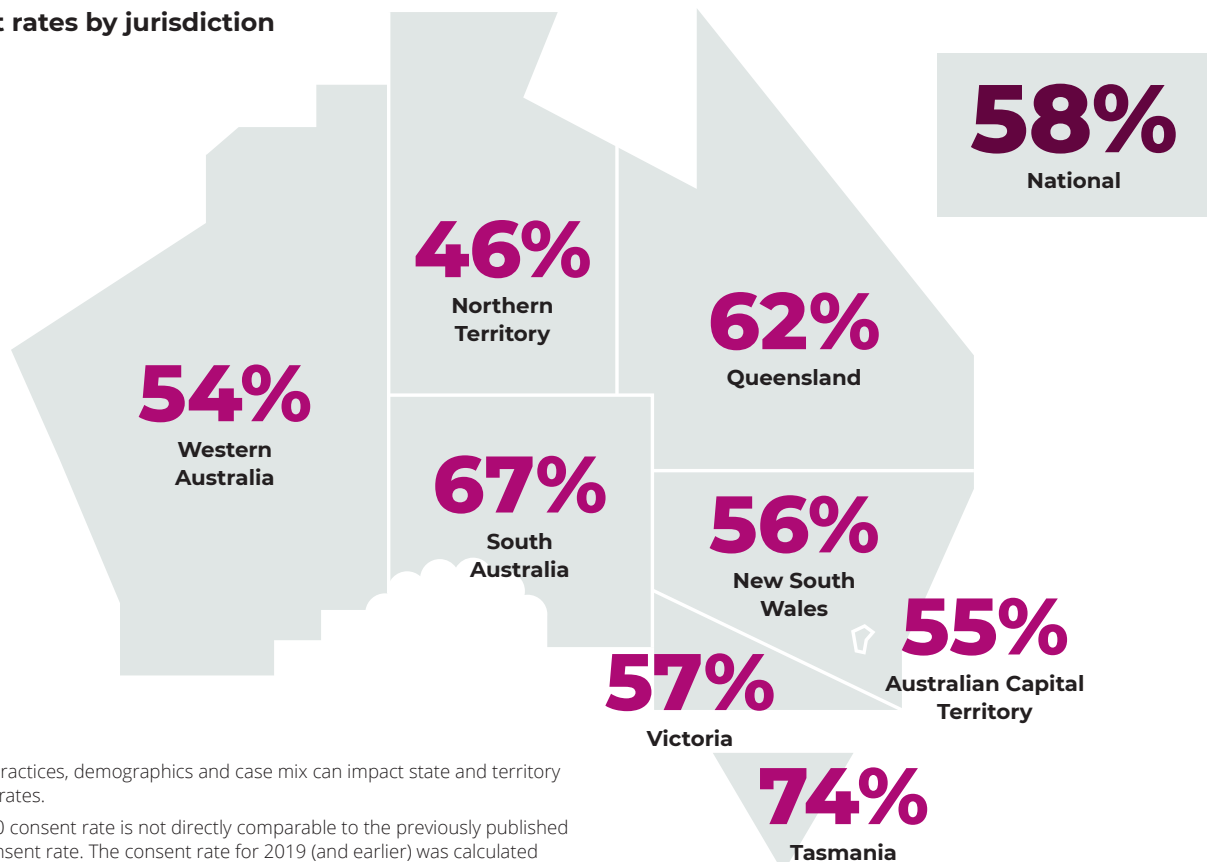
Consented donors

● Proceeded to donation | ● Did not proceed to donation



- ▶ In 2020, 680 families agreed to donation (a national consent rate of 58%²).
- ▶ Of the consented donors, 463 proceeded to donation. The remaining 217 were unable to donate their organs mainly due to medical or logistical reasons.

Consent rates by jurisdiction



Notes

- 1 Clinical practices, demographics and case mix can impact state and territory consent rates.
- 2 The 2020 consent rate is not directly comparable to the previously published 2019 consent rate. The consent rate for 2019 (and earlier) was calculated across cases where the patient was assessed as suitable to be a donor. The 2020 consent rate is for all donation requests, including cases where the patient was subsequently excluded due to medical suitability.

The importance of registration and family discussion

9/10

families gave consent for donation when their family member was a registered donor

- ▶ Consideration of organ and tissue donation comes at an intensely emotional time for families, usually associated with the unexpected death of their loved one.
- ▶ When donation is a possibility, it helps when families know what their loved one wanted.
- ▶ In 2020, 89% of families agreed to donation when their family member was registered to donate on the Australian Organ Donor Register (AODR).

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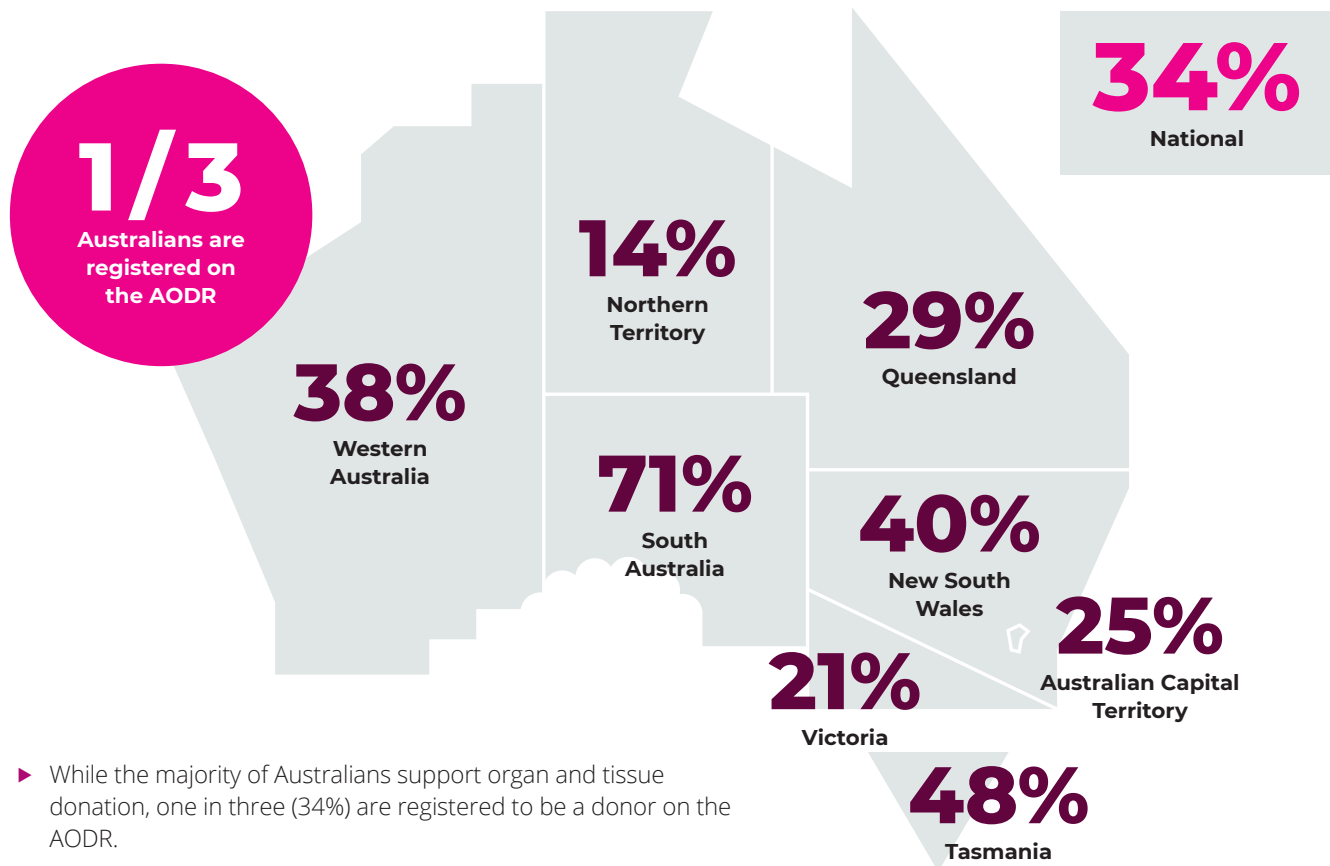
families gave consent for donation when they knew their family member's wishes

- ▶ Consent for donation was given in 66% of cases when the family had prior knowledge of the wishes of their loved one.
- ▶ This dropped to only 44% of families agreeing to donation when the family was unaware of their wishes.

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families gave consent for donation when their family member was not registered and had not discussed donation

Australian Organ Donor Register (AODR) registration rates by jurisdiction



- ▶ While the majority of Australians support organ and tissue donation, one in three (34%) are registered to be a donor on the AODR.
- ▶ Tasmania and South Australia have the highest consent rates (74% and 67% respectively). They also have high registration rates (48% and 71% respectively). Registering to become a donor and talking to your family about your decision has a direct influence on consent rates.
- ▶ South Australia is the only state where individuals can register to be a donor on their driver's licence.

New registrations by jurisdiction

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
2020	45,683	47,274	39,814	27,857	16,474	3,602	1,352	4,600	186,656
2019	54,025	55,974	48,878	32,175	19,612	4,723	1,519	4,735	221,641



- ▶ In 2020, there were 186,656 new registrations on the AODR, 16% fewer than 2019 (221,641).
- ▶ Due to COVID-19 there were significantly fewer community events driving registrations.
- ▶ There are now over 7 million people registered on the AODR. This is 34% of the eligible Australian population (i.e. aged 16 or over).

The importance of involving a donation specialist in discussions with families

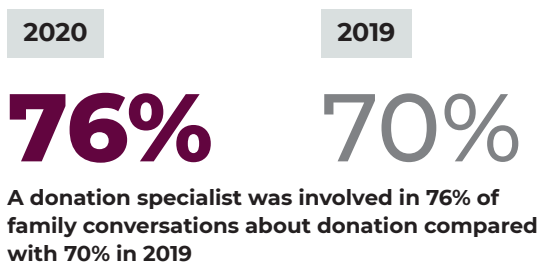
- ▶ There are around 265 donation specialist nurses, doctors and support staff covering 95 hospitals across Australia.
- ▶ The donation specialists work with hospital critical care teams to ensure that, when appropriate, the opportunity for organ donation is offered to families.
- ▶ A key factor to increasing consent are having donation raised by a donation specialist nurse or doctor, and providing families with high-quality information and care during the donation process.
- ▶ In 2020, 62% Australian families agreed to donate when they were supported by a donation specialist (compared with 63% in 2019). This dropped to 24% when there was no donation specialist involved (compared with 30% in 2019).

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families gave consent for donation when they were supported by a donation specialist

2/10

families gave consent for donation when there was no donation specialist involved



Living organ donation and transplantation

In 2020

182

living organ donors

=

153

living organ donors facilitated by individual transplant units

+

29

living organ donors through the ANZKX program

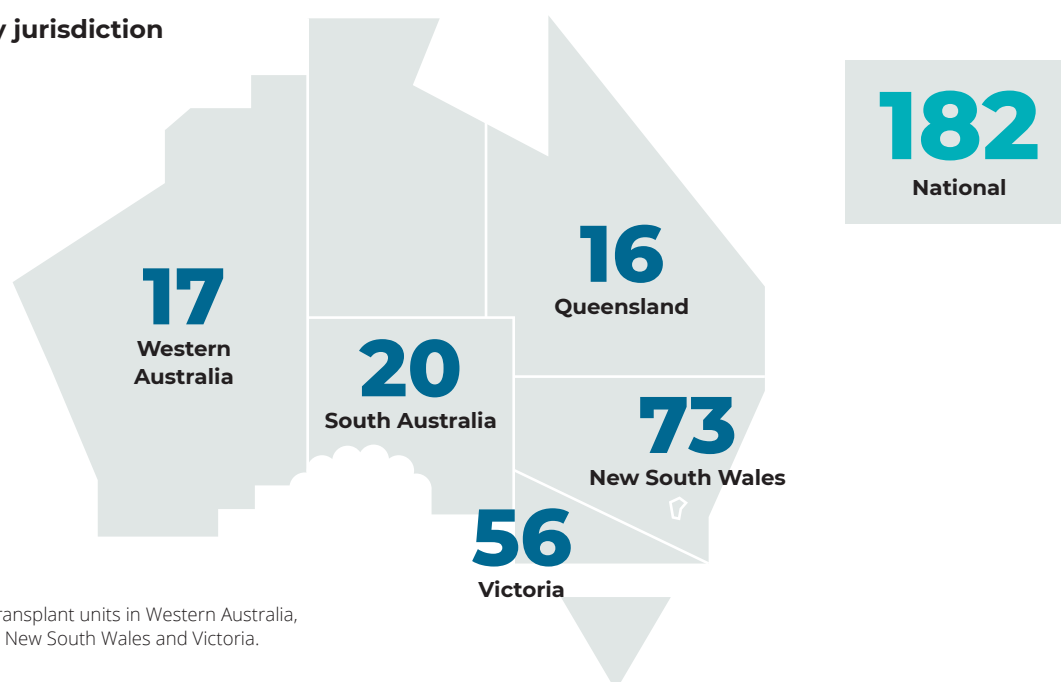
- ▶ A living organ donor is someone who donates a kidney, or on rare occasions a partial liver, to another person. Receiving an organ from a living donor offers an alternative to waiting on the national transplant waiting list for an organ from a deceased donor.
- ▶ Living kidney donation and transplantation is most often directly from a relative or close friend (directed donation), though for some patients who are eligible for a kidney transplant and have a living donor who is willing but unable to donate directly because of an incompatible blood or tissue type, it is facilitated through the Australian and New Zealand Paired Kidney Exchange (ANZKX) program.
- ▶ Living kidney donation programs were disrupted in 2020 with the suspension of kidney transplant programs and elective surgery in March due to the COVID-19. While gradual recommencement of living kidney transplantation occurred from May 2020, the complexities of the ANZKX program meant kidney exchange transplants in Australia did not recommence until September 2020. As well as ongoing logistical challenges due to border restrictions and reduced domestic flights, potential exchanges with New Zealand donors and recipients were further impacted by international travel restrictions.
- ▶ There were 182 living donors in 2020 – 181 kidney donors and one partial liver donor. This result is 24% lower than the 2019 outcome of 239.
- ▶ The 181 living kidney donors in 2020 included 29 through the ANZKX program compared with 50 in 2019.

Living donors

● Directed living donors | ● AKX/ANZKX donors



Living donation by jurisdiction

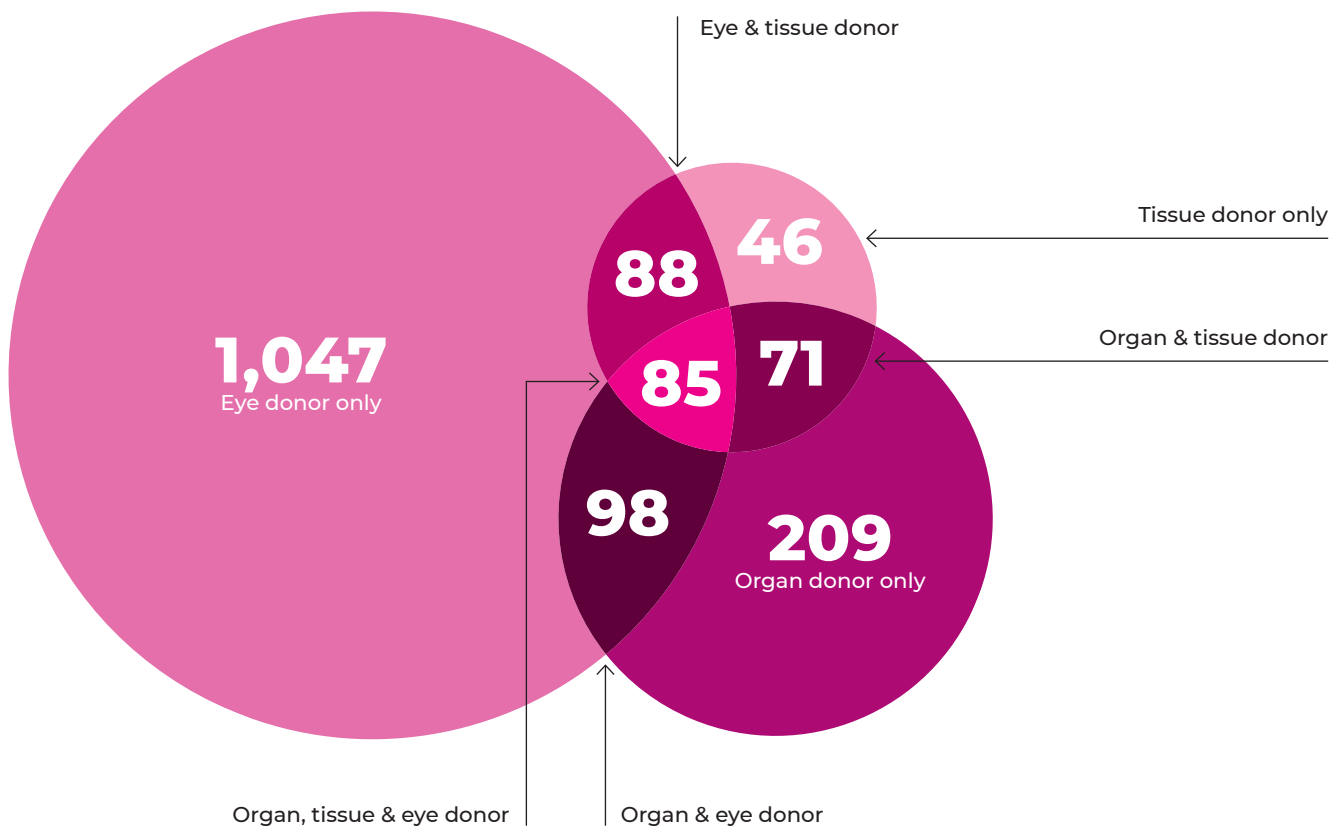


Note: There are dedicated transplant units in Western Australia, South Australia, Queensland, New South Wales and Victoria.

Part 2 Eye and tissue donation and transplantation

Deceased organ, eye and tissue donors

Overlap of deceased organ, eye and tissue donors



463

organ donors

290

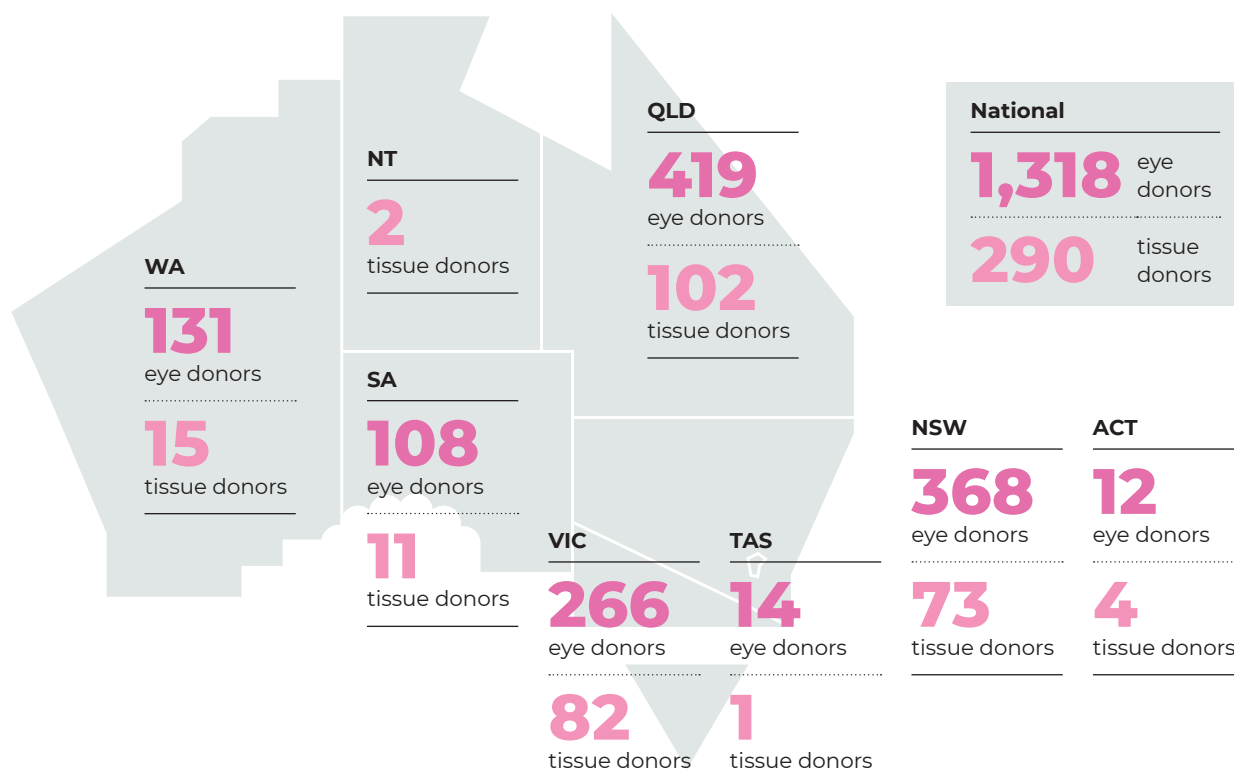
tissue donors

1,318

eye donors

- ▶ Each year the lives of thousands of Australians are saved and transformed through the transplantation of donated tissues, including eye tissue.
- ▶ The tissues that can be transplanted include heart valves and other heart tissue, bone, tendons, ligaments, skin and parts of the eye such as the cornea and sclera.
- ▶ Unlike organs, many more people can become eye and tissue donors as these can be donated following death outside of hospital, and tissue can be stored for longer periods of time.
- ▶ Tissue banks across Australia collect tissue from deceased and living donors, process and store these tissues and then distribute them to clinicians for transplantation and other surgical uses.
- ▶ The eye and tissue sector experienced an impact on donation and transplantation activity in 2020, particularly early in the year as a result of the emergence of COVID-19.
- ▶ Of the 463 deceased organ donors, 254 also donated eye and/or other tissue.

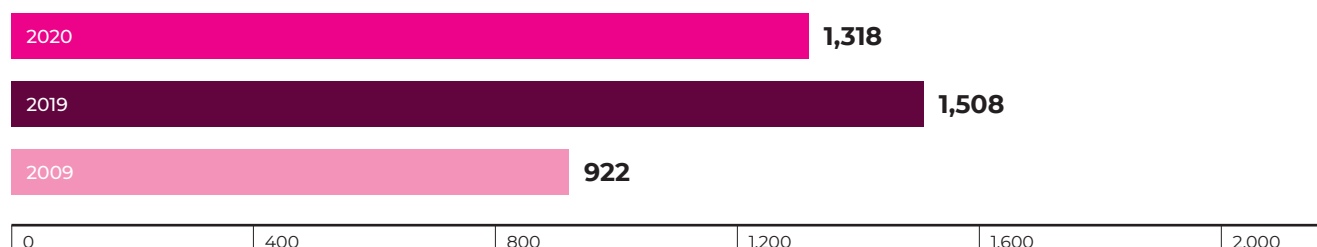
Deceased eye and tissue donors by jurisdiction



Eye donation and transplantation

Deceased eye donors

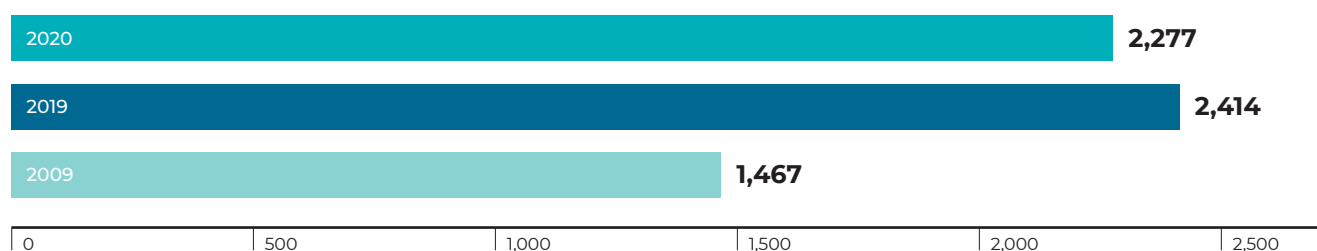
2020 | 2019 | 2009



- In 2020 there were 1,318 deceased eye donors. This is a 13% decrease in the number of eye donors compared with 2019 (1,508).

Corneal transplants

2020 | 2019 | 2009



- There were 2,277 corneal transplants in 2020, a 6% decrease compared with 2019 (2,414).
- Since 2009, more than 23,500 Australians have received a corneal transplant.

Tissue donation and transplantation

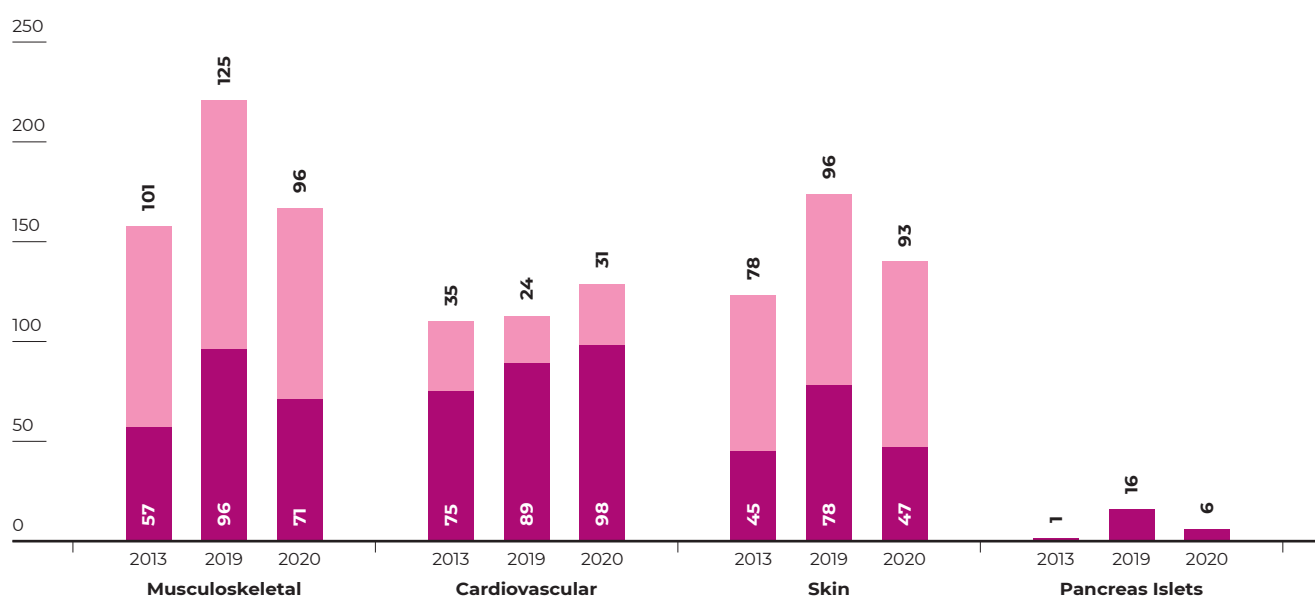
In 2020

3,018 = **2,728** + **290**
 tissue donors comprised living tissue donors (90%) deceased tissue donors (10%)

- ▶ This is a 22% decrease compared with 2019 (3,857).
- ▶ The 290 deceased tissue donors is 7% fewer than 2019 (312).
- ▶ National tissue donation and transplantation data was first reported in 2013.

Deceased tissue donations

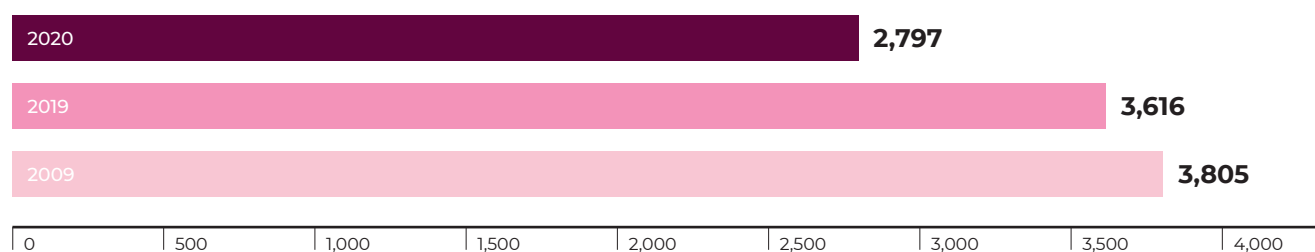
Organ/tissue | Tissue only



- ▶ The 290 deceased tissue donors in 2020 resulted in 442 tissue donations. This represents a 16% decrease in tissue donations compared with 2019 (524).
- ▶ There were 167 musculoskeletal, 129 cardiovascular, 140 skin and 6 pancreas islets deceased tissue donations.

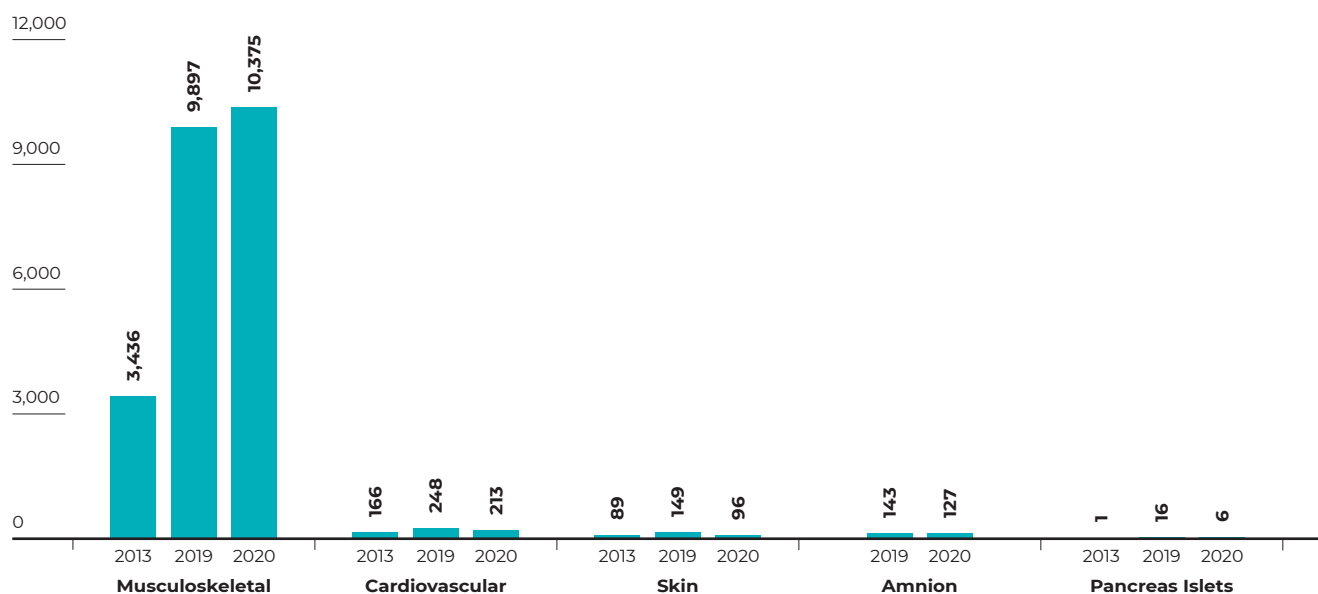
Living tissue donations

2020 | 2019 | 2009



- ▶ The 2,728 living tissue donors in 2020 resulted in 2,797 living tissue donations, predominantly from patients undergoing joint replacement surgery. The number of living tissue donations is 23% fewer than 2019 (3,616).

Tissue transplant recipients



Note: Amnion transplants commenced in 2019.

- ▶ In 2020 there were 10,817 reported tissue transplant recipients from both living and deceased donors. This is a 3% increase over 2019 (10,453).
- ▶ The tissue transplant recipients included 10,375 recipients of musculoskeletal tissue, 213 recipients of cardiovascular tissue, 96 recipients of skin tissue, six recipients of pancreas islets and 127 recipients of amnion tissue.
- ▶ While the number of tissue donations decreased in 2020 due to COVID-19 impacts, the overall number of tissue transplant recipients increased. This can be partially explained by the fact that donated tissue can be stored and used at a later stage, with little impact resulting from disruptions to donation activity as a result of the emergence of COVID-19.