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DAJ ŽIVLJENJU
PRILOŽNOST

GIVE LIFE
A CHANCE

DONORSKA IN TRANSPLANTACIJSKA DEJAVNOST V SLOVENIJI
DONATION AND TRANSPLANTATION ACTIVITY IN SLOVENIA

2022

DAJ
Življenju priložnost

Donorska in transplantacijska dejavnost
v Sloveniji v letu 2022

slovenija



transplant

GIVE
Life a chance

Donation and transplantation activity
in Slovenia in 2022

Daj življenju priložnost - Donorska in transplantacijska dejavnost v Sloveniji v letu 2022

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Give life a chance – Donation and transplantation activity in Slovenia in 2022

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Uvodne besede

V letni publikaciji »*Daj življenju priložnost*« predstavljamo statistične podatke in izbrane presežke v donorski in transplantacijski dejavnosti v letu 2022. Na področju donorske dejavnosti je bilo leto 2022 izjemno uspešno. Prineslo je številne presežke, v katere smo vložili nemalo truda tako na organizacijskem kot strokovnem nivoju. Izpeljali smo vrsto nalog, ki jih med pandemijo nismo mogli zaključiti, in postavili nove standarde, ki jim bomo v naslednjih letih skušali slediti ali jih celo nadgraditi.

V donorskem programu smo izrazito presegli načrte, predvsem pri prepoznavanju primernih umrlih darovalcev. Po več letih smo ponovno presegli mejo 23 dejanskih darovalcev/milijon prebivalcev in se uvrstili na 3. mesto med državami članicami Eurotransplanta. Transplantacijski koordinatorji in koordinatorice so opravili skoraj dvakrat več pogovorov o soglasju za darovanje s svojci možnih umrlih darovalcev kot v letu 2021 in v nacionalni mreži donorskih bolnišnic uspešno koordinirali 56 postopkov večorganskih odvzemov od možgansko mrtvih darovalcev, ki so v povprečju darovali 3,5 organa, kar nas uvršča med najuspešnejše države na svetu.

V UKC Maribor so bili preseženi pomembni strokovni mejniki, saj smo v letu 2022 prvič začeli aktivno izvajati program po novih smernicah pri zdravljenju in oskrbi kritično bolnih v enotah intenzivne medicine ter možnosti za darovanje organov in tkiv po smrti (program ICOD). Del tega programa je prvič stekel tudi v UKC Ljubljana.

Za vsemi omenjenimi uspehi pa stojijo različni ljudje, ki s svojo predanostjo, izjemno energijo, entuziazmom, altruizmom in požrtvovalnostjo v tako prelomnem obdobju slovenskega zdravstva, kot smo mu priča danes, vsem državljanom Slovenije še naprej omogočajo kakovosten in varen način zdravljenja s presaditvijo organov in tkiv. Iskrena hvala.



Andrej Gadžijev, dr. med.

Direktor in odgovorni zdravnik za donorsko dejavnost

Kazalo

3	Uvodne besede
6	Slovarček temeljnih izrazov
8	Zavod Slovenija-transplant
10	Presežki in zaznamki leta 2022
12	Razstava »MOJA BRAZGOTINA, MOJE ŽIVLJENJE«
14	Ključne številke leta 2022
17	ČVRSTI ORGANI
18	Nacionalni čakalni seznam za presaditve organov
23	Število umrlih darovalcev
30	Register opredeljenih oseb glede darovanja organov in tkiv po smrti
32	Stopnja privolitve svojcev za darovanje
34	Delovanje donorskih bolnišnic
44	Pridobljeni čvrsti organi za namen zdravljenja
47	Presajeni čvrsti organi
56	Rezultati pri bolnikih, zdravljenih s presaditvijo
61	TKIVA IN CELICE
62	Presaditve krvotvornih matičnih celic
64	Program pridobivanja in presaditve roženic
66	Ostala tkiva in celice
70	Neželeni dogodki in reakcije
72	IZOBRAŽEVANJE IN OBVEŠČANJE STROKOVNE JAVNOSTI
74	MEDNARODNI PROJEKTI
78	VIRI

Table of contents

81	Introductory words
82	The Slovenia-transplant institute
84	Outstanding achievements and highlights in 2022
86	The “My scar, my Life” Exhibition
88	Key statistics for 2022
91	SOLID ORGANS
92	National waiting list for organ transplantation
97	Number of deceased donors
104	Register for donation declarations
106	Percentage of consent for donation
108	Operations of the donor centres
118	Solid organs procured for the purpose of medical treatment
121	Transplanted solid organs
130	The results in transplanted patients
135	TISSUES AND CELLS
136	Transplantation of haematopoietic stem cells
138	Cornea procurement and transplantation programme
140	Other tissues and cells
144	Adverse events and reactions
146	EDUCATING AND INFORMING THE PROFESSIONAL PUBLIC
148	INTERNATIONAL PROJECTS
152	REFERENCES

Slovarček temeljnih izrazov

BOLNIŠNIČNA KRVNA BANKA: enota, ki v bolnišnici shranjuje in razdeljuje kri ter krvne komponente in opravlja predtransfuzijsko testiranje ter bolnišnične transfuzijske dejavnosti. Za zbiranje krvi torej ni pooblaščen.

BOLNIŠNIČNI TRANSPLANTACIJSKI KOORDINATOR: zakon določa način imenovanja, naloge bolnišničnih koordinatorjev in pravilnik o koordinatorjih. Naloge bolnišničnih transplantacijskih koordinatorjev so: organizacija in koordinacija dela na vseh področjih transplantacijske dejavnosti v bolnišnici, od odkrivanja možnih mrtvih darovalcev do organizacije in koordinacije odvzemov v bolnišnici ter pospeševanje programa pridobivanja organov in tkiv za presaditev. Delo opravljajo zdravniki specialisti, ki so pridobili dodatna znanja o vseh področjih transplantacijske dejavnosti v bolnišnici oz. donorskem centru.

CENTRALNI TRANSPLANTACIJSKI KOORDINATOR: zdravnik z dodatnimi znanji, ki organizira in koordinira transplantacijsko dejavnost od zaznave možnega darovalca do odvzema. Centralni transplantacijski koordinatorji so v pripravljenosti 24 ur na dan vse dni na leto.

ČAKALNI SEZNAM (PREJEMNIKOV): zbirka podatkov zaporedno vpisanih pacientov, ki čakajo na presaditev z namenom zdravljenja. Indikacije za presaditev so za vsak organ/tkivo/celico specifične.

DAROVALEC: oseba, ki daruje del telesa za namen zdravljenja, ne glede na to, ali do darovanje pride za časa življenja ali po njeni/njegovi smrti.

DAROVANJE: darovanje dela telesa, namenjenega za zdravljenje s presaditvijo.

DEJANSKI UMRLI /MRTVI DAROVALEC: aktiven darovalec, od katerega je bil presajen vsaj en organ.

DODELJEVANJE: postopek, po katerem se izbere najustrežnejšega prejemnika.

DONORSKA BOLNIŠNICA ALI CENTER: javnozdravstveni zavod ali enota tega zavoda, ki izvaja dejavnost pridobivanja delov telesa za namen zdravljenja s presaditvijo.

HUD NEŽELEN DOGODEK: kateri koli neželen ali nepredviden dogodek v zvezi s katero koli stopnjo postopka darovanja do presaditve, ki lahko povzroči prenos nalezljive bolezni, smrt, ogrozi življenje, povzroči invalidnost ali nezmožnost za delo, katerega posledica je hospitalizacija ali obolevnost, ali ki podaljša hospitalizacijo ali obolevnost.

HUDA NEŽELENA REAKCIJA: nenameren odziv, vključno s pojavom prenosljive bolezni, pri živem darovalcu ali prejemniku, ki bi lahko bil povezan s katero koli stopnjo postopka od darovanja do presaditve, ki je smrten, smrtno nevaren, ki povzroča invalidnost ali nezmožnost za delo, ali katerega posledica je hospitalizacija ali obolevnost ali ki podaljša hospitalizacijo ali obolevnost.

INTENZIVNO ZDRAVLJENJE/INTENZIVNA NEGA: zdravljenje, ki zahteva hitro odzivno diagnostiko, terapijo, nego in stalni nadzor življenjskih funkcij bolnika ponavadi v enoti za intenzivno zdravljenje.

MOŽEN UMRLI/MRTVI DAROVALEC: oseba, katere klinično stanje kaže na verjetnost, da izpolnjuje merila za možgansko smrt.

NACIONALNA IDENTIFIKACIJSKA ŠTEVILKA DAROVALCA OZIROMA PREJEMNIKA: identifikacijska oznaka, ki jo v skladu z nacionalnim sistemom identifikacije darovalcu ali prejemniku dodeli Slovenija-transplant in služi kot povezovalni znak, prek katerega se sledi darovalcu in prejemniku organa, zlasti pri izmenjavi podatkov med donorskimi centri, transplantacijskimi centri in drugimi državami članicami Evropske unije.

PRIMEREN UMRLI/MRTVI DAROVALEC: medicinsko ustrezna oseba, pri kateri je bila ugotovljena smrt na podlagi nevroloških meril, glede na relevantno zakonodajo.

SLEDLJIVOST: možnost, da se najde in identificira organ v vseh fazah preskrbe z organi ali uničenja, vključno z možnostjo, da se identificirata darovalec in donorski center, poiščejo prejemniki pri transplantacijskem centru ter identificirajo vsi pomembni neosebni podatki v zvezi s proizvodi in materiali v stiku z organom.

STOPNJA ODKLONITVE: odstotek odklonitev svojcev oz. oseb, ki so blizu umrlemu, za darovanje po smrti.

STOPNJA ZAVRNITEV: odstotek zavrnitev presadka pri prejemniku.

TRANSPLANTACIJSKA DEJAVNOST: zdravstvena dejavnost, ki vključuje postopke darovanja, pridobivanja, testiranja in razdeljevanja organov ter darovanja, pridobivanja, testiranja, predelave, konzerviranja, shranjevanja in razdeljevanja tkiv in celic za potrebe zdravljenja s presaditvijo.

TRANSPLANTACIJSKI CENTER: javnozdravstveni zavod ali enota tega zavoda, ki izvaja dejavnost zdravljenja s presaditvijo organov.

TRANSFUZIJSKI CENTER: organizacijska enota, ki je v bolnišnici odgovorna za zbiranje krvi, testiranje, predelavo zbrane krvi v krvne komponente in njihovo shranjevanje. Izvaja predtransfuzijsko testiranje in bolnišnične transfuzijske dejavnosti ter bolnišnice in druge porabnike oskrbuje s krvjo in krvnimi komponentami.

TRANSFUZIJSKI ZAVOD OZIROMA ZAVOD RS ZA TRANSFUZIJSKO MEDICINO V LJUBLJANI: na državni ravni odgovoren za strokovno raven preskrbe s krvjo in krvnimi pripravki ter povezovanje transfuzijske medicine z bolnišnično dejavnostjo. Zavod usklajuje vse dejavnosti v zvezi z izbiro krvodajalcev, zbiranjem, testiranjem, predelavo, hrambo in razdeljevanjem krvi ter krvnih pripravkov, klinično rabo krvi in nadzorom nad težkimi neželenimi dogodki oziroma reakcijami v zvezi s transfuzijo krvi. Zavod RS za transfuzijsko medicino na državni ravni usklajuje in povezuje mrežo bolnišničnih transfuzijskih oddelkov in bolnišničnih krvnih bank, vodi enoten informacijski sistem, strokovno izobraževanje in razvojno-raziskovalno dejavnost ter sodeluje z mednarodnimi organizacijami, zvezami in sorodnimi zavodi v drugih državah.

Zavod Slovenija-transplant

Javni zavod Republike Slovenije za presaditve organov in tkiv Slovenija-transplant je od leta 2002 osrednja nacionalna strokovna ustanova, ki povezuje, koordinira, pospešuje ter nadzira donorsko in transplantacijsko dejavnost v Sloveniji. V zavodu Slovenija-transplant je centralna koordinacijska pisarna nacionalne transplantacijske mreže, ki je bila ustanovljena leta 1998. Nacionalno mrežo sestavlja enajst donorskih bolnišnic po Sloveniji, Center za transplantacijsko dejavnost v UKC Ljubljana in Center za tipizacijo tkiv, ki deluje v sklopu Zavoda RS za transfuzijsko medicino. Nacionalna mreža omogoča delovanje donorskega in prejemniškega programa ter zagotavlja, da imajo dostop do zdravljenja s presaditvijo vsi, ki ga potrebujejo. Mreža deluje nepretrgoma, zato so strokovne ekipe v pripravljenosti 24 ur na dan, vse dni v letu.

Od leta 2000 je Slovenija vključena v neprofitno organizacijo za izmenjavo organov in tkiv Eurotransplant. Z izpolnjevanjem zahtevnih vstopnih pogojev se je prva iz regije priključila veliki skupini petih uspešnih držav na področju zdravljenja s presaditvijo, t. j. Nemčiji, Avstriji, Belgiji, Luksemburgu in Nizozemski. Od leta 2002 je Slovenija-transplant nosilec pogodbe z Eurotransplantom. Eurotransplant danes združuje 8 držav in prek 137 milijonov prebivalcev, sedež ima v Leidnu na Nizozemskem. Članstvo je pomembno za naše bolnike, saj so se s priključitvijo bistveno izboljšale možnosti preživetja in izidi zdravljenja s presaditvijo, predvsem v visoko urgentnih, življenjsko ogrožajočih stanjih, kot sta akutna odpoved delovanja srca in jeter, ter v drugih posebnih primerih (npr. otroci, hipersenzibilizirani bolniki). S sodelovanjem so se tudi občutno zmanjšali čakalni seznami, nacionalni transplantacijski programi so se razmahnili, izvajati smo začeli kombinirane presaditve. Predvsem pa smo lahko omogočili optimalnejšo tkivno skladnost med darovalcem in prejemnikom. Nekateri bolniki zaradi tkivne neskladnosti ustreznega organa v Sloveniji sploh ne bi dočakali. V letu 2020 smo obeležili pomembno 20. obletnico uspešnega sodelovanja z Eurotransplantom.

Zavod Slovenija-transplant se od ustanovitve naprej nenehno razvija v skladu s priporočenimi mednarodnimi smernicami. Stremimo k ustvarjanju izobražene in motivirane strokovne javnosti ter z večplastnim komuniciranjem vztrajno povečujemo zaupanje v transplantacijsko medicino med splošno

javnostjo. Preko članstev v mednarodnih strokovnih odborih in s sodelovanjem v evropskih projektih smo tesno vpeti v mednarodno okolje, tudi kot aktivni soustvarjalci strategij, razvoja in izobraževanja strokovnjakov v donorski in transplantacijski dejavnosti na mednarodnem področju. Ostajamo mednarodno prepoznan in zgleden primer za varen ter učinkovit način organizacije in vodenja nacionalnega donorskega programa.

Pri urejanju in vodenju področja pridobivanja in uporabe delov človeškega telesa za namen zdravljenja v Slovenija-transplantu dosledno upoštevamo zakonodajo, evropske direktive in sprejete mednarodne konvencije. Prav tako skrbimo za ustrezno posodabljanje nacionalne zakonodaje in strokovnih protokolov. Ob uvajanju sprememb vključujemo predloge in odločitve zdravstvene stroke, kritične družbene premisleke ter načela medicinske etike in deontologije.

Ključne smernice delovanja zavoda so: samozadostnost – enakost in varnost za bolnike – optimalna učinkovitost – kakovost – sledljivost – profesionalnost – nekomercialnost – transparentnost – prostovoljno darovanje – preprečevanje zlorab.

Zavod Slovenija-transplant vodi Andrej Gadžijev, dr. med., specialist travmatolog in odgovorni zdravnik za donorsko dejavnost. Kot odgovorna zdravnica je v zavodu imenovana tudi prim. Danica Avsec, dr. med., namestnica direktorja. V letu 2022 je bilo v organizaciji devet redno zaposlenih, v donorskem programu pa je sodelovalo 86 pogodbenih sodelavcev. Zavod deluje pod okriljem Ministrstva RS za zdravje.

www.slovenija-transplant.si

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Presežki in zaznamki leta 2022

- V donorskem programu smo izrazito presegli predvideni načrt, predvsem pri številu primernih darovalcev. S 23,24 dejanskega darovalca na milijon prebivalcev pa smo se uvrstili na 3. mesto med državami članicami Eurotransplanta.
- Izjemne rezultate smo dosegli pri številu pridobljenih src in pljuč, kjer smo načrt presegli za več kot 60 %, ter pri številu pridobljenih roženic – teh smo pridobili 51 več od predvidenih 120.
- Za potrebe nacionalnega informacijskega sistema za tkiva in celice smo ustvarili slovensko nacionalno kodo za tkiva in celice, kar je unikatno in pionirsko delo na ravni EU. Natančna koda zagotavlja boljšo sledljivost in transparentnost za ustanove in darovalce ter za vsa tkiva in celice.
- Izboljšali smo logistične procese in sistemsko uredili protokole za zagotavljanje izmenjave organov in tkiv z bližnjimi letališči v Münchnu, Gradcu in na Dunaju.
- Za potrebe izvajanja presaditev jeter pri majhnih otrocih smo podpisali pogodbo o sodelovanju med Nacionalnim centrom za presaditve v Italiji, Eurotransplantom in Slovenija-transplantom. Našli smo inovativno možnost poravnave dolgovanih organov med članicami in nečlanicami Eurotransplanta preko evropske platforme za izmenjavo organov FOEDUS.
- Centralni transplantacijski koordinatorji so uspešno koordinirali 56 postopkov večorganskih odvzemov od umrlih darovalcev v nacionalni mreži donorskih bolnišnic.
- Transplantacijske koordinatorice in koordinatorji so opravili 92 pogovorov s svojci o soglasju za darovanje, kar je v primerjavi z letom 2021 skoraj dvakrat več. Nekoliko nižji je bil odstotek privolitvev za darovanje, in sicer 68 %.

- S 1. 9. 2022 je postala veljavna ratifikacija mednarodne Konvencije proti trgovanju s človeškimi organi. S spremembami v Kazenskem zakoniku je ratifikacija postala pomemben mejnik za Slovenijo, saj so v skladu s konvencijo jasno določena kazniva dejanja v zvezi z zlorabami v transplantacijski medicini.
- Okrepili smo izobraževalno dejavnost za strokovno javnost. Med drugim smo izvedli šest seminarjev o osnovah donorskega programa, intenzivni tečaj s področja pridobivanja organov, dve delavnici o histovigilanci ter eno delavnico o sporočanju slabe novice in pogovoru o darovanju organov.
- Uvedli smo e-novičnik za redno obveščanje in ozaveščanje strokovne javnosti. Na več kot 500 e-naslovov smo razposlali štiri številke Strokovnih novic s Slovenija-transplanta.
- V sodelovanju z društvom pacientov, Slovenskim društvom Transplant, smo pripravili medijsko odmevno in v javnosti odlično sprejeto razstavo »Moja brazgotina, moje življenje«. V avli UKC Ljubljana smo jo otvorili ob evropskem dnevu darovanja. Razstava aktov oseb po presaditvi potuje po Sloveniji in je odlično komunikacijsko orodje za spodbujanje opredelitev za darovanje organov.
- V nacionalnem registru opredeljenih oseb smo zabeležili največje število opredelitev glede darovanja na letni ravni. Svojo odločitev je uradno izrazilo 2010 ljudi.
- Nadpovprečno smo bili uspešni na mednarodnih razpisih za projekte. V sodelovanju s tujimi partnerji smo pridobili kar tri nove projekte in s tem omogočili nadaljnji razvoj na področju odpornosti donorskih in transplantacijskih programov (BRAVEST), inovativnih pristopov komunikacije in ozaveščanja javnosti (You have more than one life) ter izobraževanja strokovne javnosti o novostih v donorski dejavnosti (Speed-In).
- Uspešno smo izpeljali 1. nagradni natečaj za najboljše raziskovalno delo s področja donorske medicine. Prvo nagrado je osvojila Veronika Prtenjak z nalogo Pravne dileme darovanja organov.

Razstava »MOJA BRAZGOTINA, MOJE ŽIVLJENJE«

Središčni dogodek Evropskega dneva darovanja, ki je bil 8. oktobra 2022, je bila otvoritev estetsko in vsebinsko presežne razstave »Moja brazgotina, moje življenje« v avli UKC Ljubljana. Razstava aktov s spremljajočimi izjavami in strokovnimi pojasnili ponuja neposreden vpogled v darovanje in presaditve organov in tkiv, kjer je veliko dobrih in uspešnih zgodb o solidarnosti, vrhunskih medicinskih dosežkih in uspehih v zdravljenju. Nastala je v sodelovanju med društvi pacientov (Slovensko društvo Transplant, Športno društvo Ditra) in Slovenija-transplantom. Na Slovenija-transplantu so jo soustvarjali prim. Danica Avsec, Andrej Gadžijev, dr. Jana Šimenc in Barbara Uštar. Avtor vrhunskih umetniških fotografij je fotograf Miran Juršič.

Namen razstave je, da lahko v različnih vsakdanjih prostorih brez zadržkov govorimo o darovanju organov, pri tem razbijamo nepotrebne tabuje in spodbujamo darovanje. Tudi zato so osebe s presajenimi organi z veliko mero poguma in pozitivne energije razgalile svoje brazgotine, telesa in misli, da bi izrazile hvaležnost in podale ključno sporočilo: postanite darovalci in omogočite življenje. Kot je povedala Anja Garbajs, ena od avtoric razstave in članica društva Transplant: »Misel, da nekomu lahko podariš organ, je večja od življenja.«

Razstava, na kateri žarita življenje in hvaležnost, pri gledalcih spreminja pogled na življenje, na začetke in konce. Fotografije dopolnjujejo panoji s strokovnimi pojasnili, spodbudami k pogovoru o darovanju in razlagami pogostih zmotnih prepričanj. V letu 2022 je gostovala v avli UKC Ljubljana, v avli Kirurške klinike v UKC Maribor ter v Pokrajinski in študijski knjižnici Murska Sobota. V splošni in strokovni javnosti ter v medijih je bila povsod sprejeta izjemno pozitivno.

Razstava je hkrati pobuda za okrogle mize, pogovore in tiskovne konference, kar širi razumevanje o darovanju organov. Odkar razstava potuje po Sloveniji, opažamo pomemben porast v številu opredelitev v nacionalnem registru. Predstavili smo jo tudi na Poljskem, kjer je že prepoznana kot model izjemne, inovativne in uspešne prakse komuniciranja o darovanju organov. V letu 2023 načrtujemo nadaljnja gostovanja v krajih po Sloveniji (med drugim v ZD Sevnica).

JANEZ, 56

Ko po čudežnem klicu stopiš na transplantacijsko pot, ki ti je podarjena, darovana v najtežjih, večinoma tragičnih trenutkih nesebično od neznanih oseb, čutiš, da ti je z medicinskim znanjem, s treznimi glavami in mirnimi rokami izvedena operacija rešila življenje. Ob podpori svojih najbližjih in vseh tistih, ki jim je mar zame, lahko rečem samo HVALA.

Vsaka iskrica, delec, atom čudežnega mozaika, ki je potreben za tovrsten uspeh, nosi na naših brazgotinah življenjski pomen in ponosni smo na to.

Sem prejemnik dveh organov, ki mi pomenita ŽIVLJENJE, s ponosom stopam po sveži poti novih priložnosti in svojo lepo zgodbo z nasmehom na obrazu širim tudi med vas.

JANEZ, 56

When, after a miraculous phone call, you are offered a transplant from a complete stranger, which is available to you under the most tragic circumstances, you realize that operation, performed by expert medical professionals has saved your life. With the support of my loved ones and all those who care about me, I can only say THANKYOU.

Every spark, particle, atom of the miraculous mosaic that is necessary for this kind of success carries a vital meaning on our skin and we are proud of it. I am the recipient of two organs that mean LIFE to me. I walk with pride towards new opportunities and spread my beautiful story with a smile on my face.

O DAROVANJU ORGANOV & STATISTIKA

Zdravljenje s presaditvijo organov in tkiv je med najnaprednejšimi metodami zdravljenja. Za bolnike s kronično ali akutno končno odpovedjo organa je to edina možnost za preživetje, le pri odpovedi delovanja ledvic obstaja še nadomestno zdravljenje (dializa).

Potrebe po zdravljenju s presaditvijo naraščajo, organov za vse bolne pa ni dovolj, zato več tisoč ljudi čaka in upa na presaditev organa.

ABOUT ORGAN DONATION & STATISTICS

Organ and tissue transplantation is one of the most advanced medical treatment methods. For patients with chronic or acute organ failure, transplantation is the only option for survival. Only in the case of kidney failure is there an alternative treatment (dialysis).

Demand for organ transplantation is increasing all over the world, but there are not enough organs available to meet the need. This shortage of organs is now the limiting factor in treating many patients with chronic organ failure and has led to high numbers of patients on waiting lists.

EVROPA
EUROPE

36.000

INCIDENTS & PRE-ELIGIBLE ORGAN PATIENTS RECEIVED A TRANSPLANT

41.000

BOLNIKI ČAKA NA ZDRAVLJENJE. NEW PATIENTS ARE REGISTERED ON WAITING LISTS

VSAKI UR JE
THAT IS NEARLY

5

PACIENTOV LUVIČEN NA ČAKALNI SEZNAM. NEW PATIENTS ADDED TO A TRANSPLANT WAITING LIST EVERY HOUR

SLOVENIJA
SLOVENIA

OKOLI
ABOUT

120 ORGANOV PRESADIMO NA LETO. ORGANS ARE TRANSPLANTED EVERY YEAR

OKOLI
ABOUT

200 LJUDI ČAKA NA ZDRAVLJENJE. PATIENTS ARE REGISTERED ON WAITING LISTS

Umrli darovalci
Deceased donors

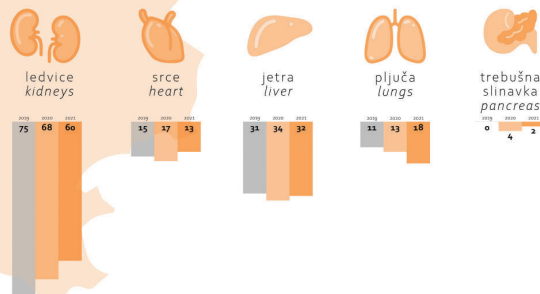


Umrli darovalci v letu 2021 po starostnih skupinah
Deceased donors in 2021 by age group



POURCHASER
THE AVERAGE AGE OF DECEASED DONORS IS 47 YEARS

Darovalci so v letu 2021 podarili 125 organov
Donors donated 125 organs for treatment in 2021



Zaradi kroničnega pomanjkanja ustreznih organov, vsi bolniki žal ne dočakajo zdravljenja. Z darovanjem lahko tragične usode ljudi spremenimo.

Due to chronic shortage of suitable organs and tissues for transplantation, not all patients receive treatment. In 2021, an average of 20 patients died every day while waiting for an organ transplant in Europe.



UMRLI
DAROVALCI 56

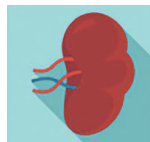
Ključne številke
leta 2022

V LETU 2022
PO STAROSTNIH
SKUPINAH



DAROVALCI SO PODARILI
172 ORGANOV

2022



LEDVICE
82



SRCE
20



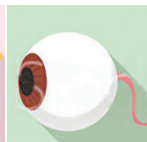
JETRA
45



PLJUČA
20



T. SLINAVKA
1

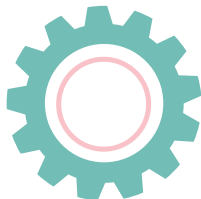


ROŽENICE
172

NACIONALNI REGISTER OPREDELJENIH OSEB GLEDE POSMRTNEGA DAROVANJA ORGANOV IN TKIV

Slovenija se uvršča med najuspešnejše države
glede stopnje soglasja za darovanje.

2.010
(54 proti)
2022



Skupaj opredeljenih
13.579 ljudi
od tega 13.496 ZA in
83 PROTI.

V CENTRU ZA TRANSPLANTACIJSKO
DEJAVNOST V UKC LJUBLJANA
SO PRESADILI 109 ORGANOV

161 pacientov je bilo
na čakalnem seznamu
za presaditev
(stanje na dan 31.12.2022)



PRIVOLITEV
SVOJCEV ZA DAROVANJE
ORGANOV IN TKIV

STOPNJA
PRIVOLITVE: **68 %**

Transplantacijski koordinatorji
so izvedli 92 pogovorov
s svojci o darovanju.

POVPREČNE ČAKALNE
DOBE (v dnevih)

250

SRCE

370

LEDVICE

91

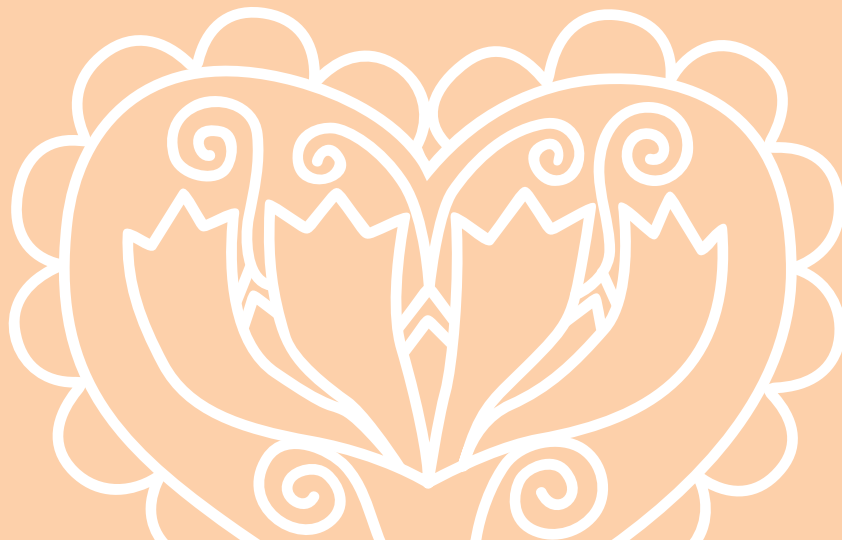
PLJUČA

67

JETRA



Čvrsti organi



NACIONALNI ČAKALNI SEZNAM ZA PRESADITVE ORGANOV

Čakalni seznam je seznam bolnikov, ki čakajo na zdravljenje s presaditvijo organa. Indikacije za presaditev so za vsak organ/tkivo/celico specifične. Vsi bolniki v Republiki Sloveniji imajo enake možnosti za uvrstitev na čakalni seznam prejemnikov in zagotovljen enak dostop do presaditve delov človeškega telesa. Konec leta 2022 je na presaditev organa čakalo 161 bolnikov. Skupno število čakajočih se je v primerjavi s preteklim letom ponovno nekoliko zmanjšalo, predvsem na čakalnem seznamu za ledvico in jetra. Povprečna čakalna doba je za vse organe v primerjavi z ostalimi državami relativno kratka. Slovenski bolniki čakajo na presaditev srca, jeter ali ledvice v povprečju manj kot leto dni. Točnejši podatki o povprečnih čakalnih dobah za posamezen organ so v poglavju REZULTATI PRI BOLNIKI, ZDRAVLJENIH S PRESADITVIJO.

V letu 2022 je bilo v Sloveniji na čakalni seznam na novo uvrščenih 114 bolnikov, od tega 38 za presaditev ledvice (eden v kombinaciji z jetri, trije v kombinaciji s srcem in eden skupaj s trebušno slinavko), 40 za presaditev srca (3 skupaj z ledvico), 13 za presaditev pljuč, 22 za presaditev jeter (1 skupaj z ledvico) in en bolnik za presaditev trebušne slinavke (skupaj z ledvico).

Stanje na nacionalnem čakalnem seznamu na dan 31. 12. 2022 (vsi čakajoči)

Ledvica	Srce***	Pljuča	Jetra*	Trebušna slinavka**
82	60	5	16	3
SKUPAJ				161 bolnikov

* Od tega dva skupaj z ledvico. ** Od tega dva skupaj z ledvico. *** Od tega eden skupaj z ledvico.

Vir: <http://statistics.eurotransplant.org/>

Nacionalni čakalni seznam v obdobju 2011–2022 (stanje na dan 31. 12., vsi čakajoči)

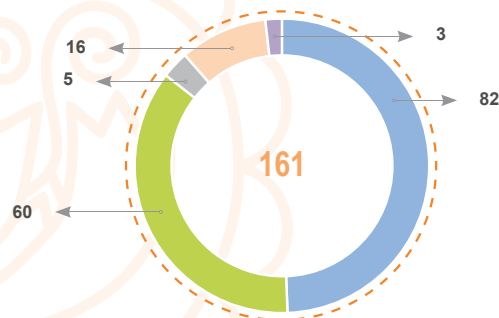
Leto	Ledvica	Srce	Pljuča*	Jetra	Trebušna slinavka	SKUPAJ
2011	120	46		17		183
2012	113	38		18	2	169
2013	114	39		19	1	171
2014	136	31		21	11	188
2015	110	52		29	11	190
2016	95	58		28	7	181
2017	112	56		35	8	203
2018	135	65		35	6	234
2019	138	55		35	5	227
2020	115	53	5	32	4	204
2021	97	57	3	21	4	177
2022	82	60	5	16	3	161

*Do septembra leta 2020 so bili slovenski pacienti, ki so čakali na presaditev pljuč, uvrščeni na avstrijski čakalni seznam.

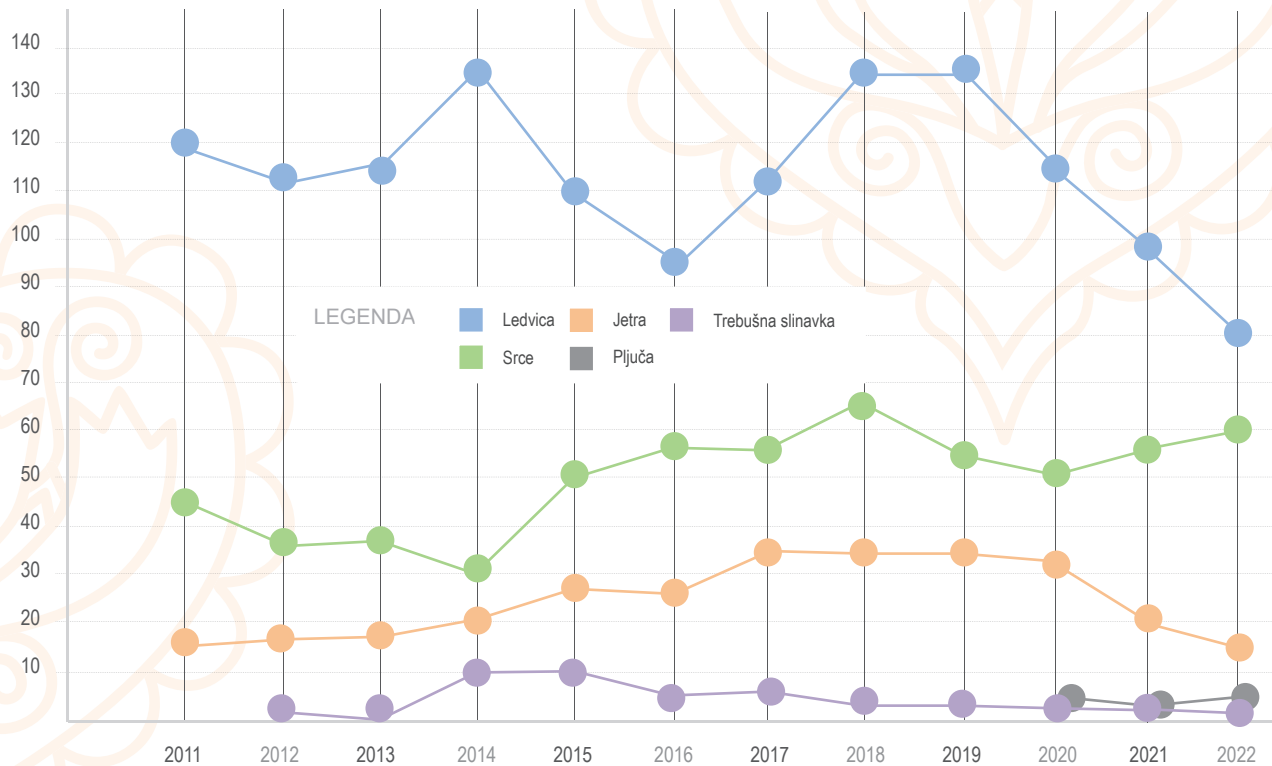
Vir: <http://statistics.eurotransplant.org/>

Delež bolnikov na nacionalnem čakalnem seznamu po posameznem organu v letu 2022

LEGENDA



Gibanje števila bolnikov na čakalni listi
po organih in skupaj 2011–2022



Število bolnikov, umrlih med čakanjem na presaditev organa 2011-2022

Podatki v spodnji tabeli prikazujejo število bolnikov, ki so bili uvrščeni na čakalni seznam za presaditev organa in so med čakanjem umrli. Vzrok smrti ni bil vedno povezan z odpovedjo organa, na katerega presaditev so čakali.

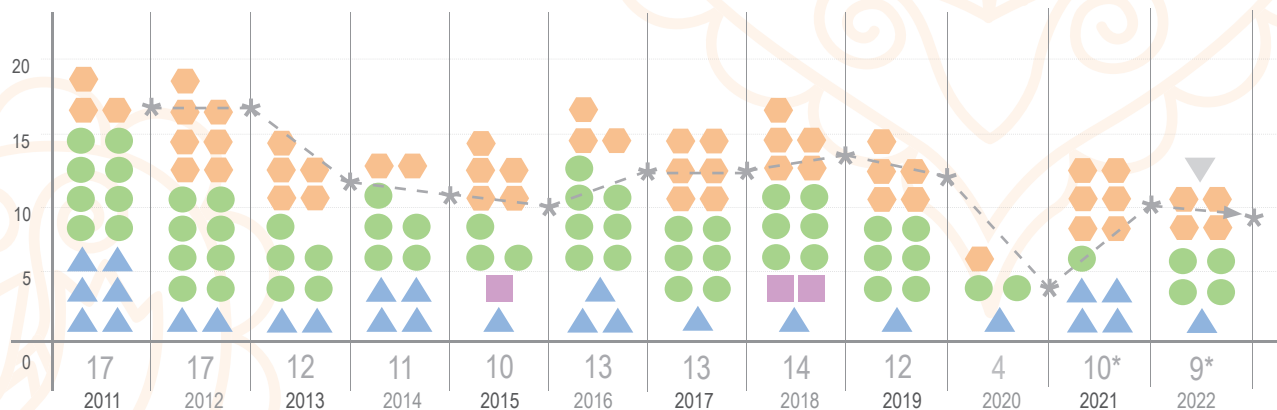
Leto	Ledvica	Ledvica skupaj s trebušno slinavko	Srce	Plijuča	Jetra	SKUPAJ
2011	6		8		3	17
2012	2		8		7	17
2013	2		5		5	12
2014	4		5		2	11
2015	1	1	3		5	10
2016	3		7		3	13
2017	1		6		6	13
2018	1	2	6		5	14
2019	1		6		5	12
2020	1		2		1	4
2021	4		1		6	10*
2022	1		4	1	4	9**

*En umrli bolnik je čakal na kombinirano presaditev ledvice in jeter

** En umrli bolnik je čakal na kombinirano presaditev ledvice in jeter.

Vir: <http://statistics.eurotransplant.org/>

Gibanje števila bolnikov,
umrlih med čakanjem na presaditev organa 2011-2022



*En umrlj bolnik je čakal na kombinirano presaditev ledvice in jeter

Vir: <http://statistics.eurotransplant.org/>

LEGENDA



Ledvica



Jetra



Ledvica in trebušna slinavka



Srce



Pljuča



Gibanje števila bolnikov

ŠTEVILO UMRLIH DAROVALCEV

V letu 2022 smo v slovenskih donorskih bolnišnicah pridobili 56 aktivnih umrlih darovalcev, ki so bili medicinsko ustrezni in za katere smo pridobili privolitev svojcev. Uvodoma so prikazani podatki o številu aktivnih umrlih darovalcev v Sloveniji v primerjavi z državami sveta, za katere so bili v času priprave te publikacije že na voljo podatki za leto 2022. V nadaljevanju so prikazani podatki o številu dejanskih umrlih darovalcev, kar pomeni, da je bil od vsakega darovalca presajen vsaj en organ. V primerjavi z ostalimi državami članicami Eurotransplanta se Slovenija po številu dejanskih umrlih darovalcev na milijon prebivalcev v letu 2022 uvršča na tretje mesto z rezultatom, ki je pomembno višji od povprečja v Eurotransplantu.

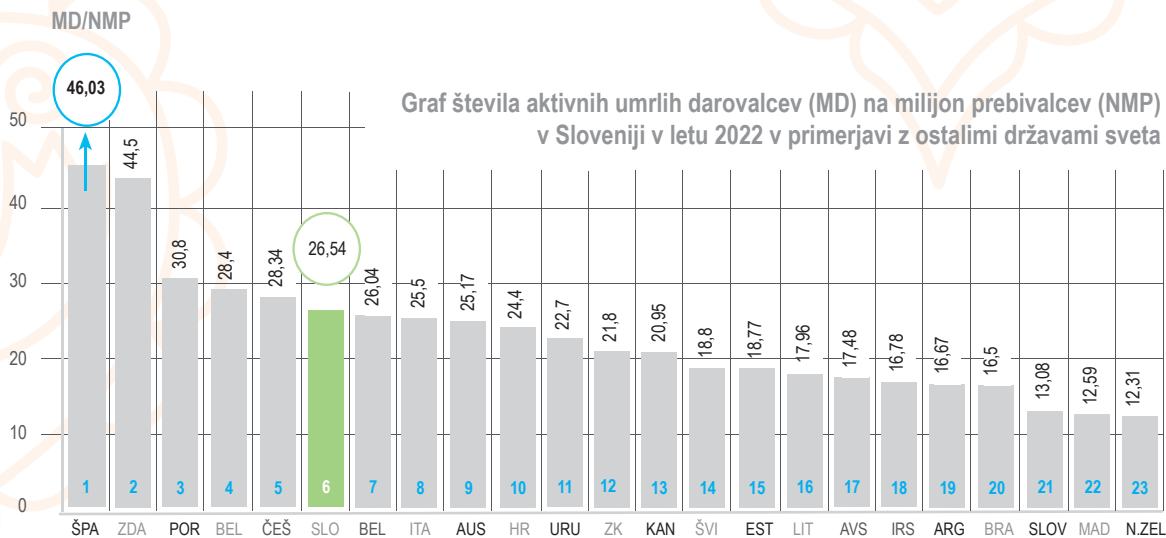
Število aktivnih umrlih darovalcev (MD) na milijon prebivalcev (NMP) v Sloveniji v letu 2022 v primerjavi z ostalimi državami sveta

Država	Število MD/NMP 2022
1. Španija	46,03
2. ZDA	44,5
3. Portugalska	30,8
4. Belgija	29,4
5. Češka	28,34
6. Slovenija	26,54
7. Belorusija	26,04
8. Italija	25,5
9. Avstrija	25,17

Država	Število MD/NMP 2022
10. Hrvaška	24,4
11. Urugvaj	22,7
12. Združeno Kraljestvo	21,08
13. Kanada	20,95
14. Švica	18,8
15. Estonija	18,77
16. Litva	17,96
17. Avstralija	17,48
18. Irska	16,78

Država	Število MD/NMP 2022
19. Argentina	16,67
20. Brazilija	16,5
21. Slovaška	13,08
22. Madžarska	12,59
23. Nova Zelandija	12,31
24. Iran	12,2
25. Poljska	11,76

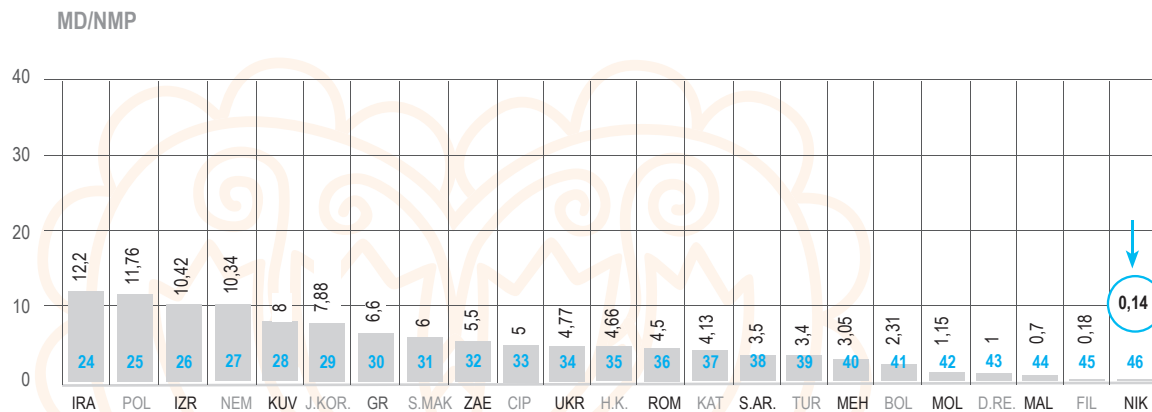
Država	Število MD/NMP 2022
26. Izrael	10,42
27. Nemčija	10,34
28. Kuvajt	8
29. J. Koreja	7,88
30. Grčija	6,6
21. S. Makedonija	6
32. ZAE	5,5



Država	Število MD/NMP 2022
33. Ciper	5
34. Ukrajina	44,77
35. Hong Kong	4,66
36. Romunija	4,5
37. Katar	4,13
38. Savdijska Arabija	3,5
39. Turčija	3,4

Država	Število MD/NMP 2022
40. Mehika	3,05
41. Bolgarija	2,31
42. Moldavija	1,15
43. Dominikanska Republika	1
44. Malezija	0,7
45. Filipini	0,18
46. Nikaragva	0,14

Vir: IRODaT, International Registry in Organ Donation and Transplantation. Preliminary numbers 2022, July 2023.



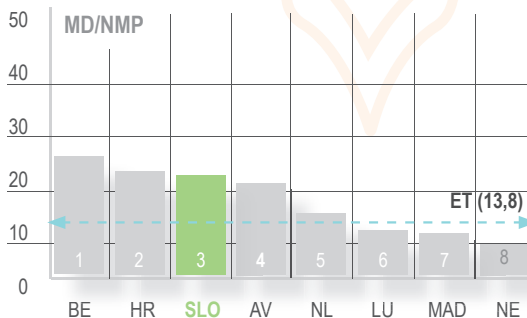
Število dejanskih umrlih darovalcev (MD) in število MD na milijon prebivalcev (NMP) v Sloveniji v letu 2022 in v primerjavi z Eurotransplantom.

Država	Slovenija (SLO)	Eurotransplant (ET)
Število MD	49	1.938
MD/NMP	23,3	13,8

Vir: <http://statistics.eurotransplant.org/>

Število dejanskih umrlih darovalcev na milijon prebivalcev (MD/NMP) ter primerjava z državami članicami Eurotransplanta v letu 2022

Država ET	Število MD/NMP 2022
1. Belgija (BE)	26,6
2. Hrvaška (HR)	23,5
3. Slovenija (SLO)	23,3
4. Avstrija (AV)	22,1
5. Nizozemska (NL)	16,2
6. Luksemburg (LU)	12,4
7. Madžarska (MAD)	12,3
8. Nemčija (NE)	10,1



Vir: <http://statistics.eurotransplant.org/>

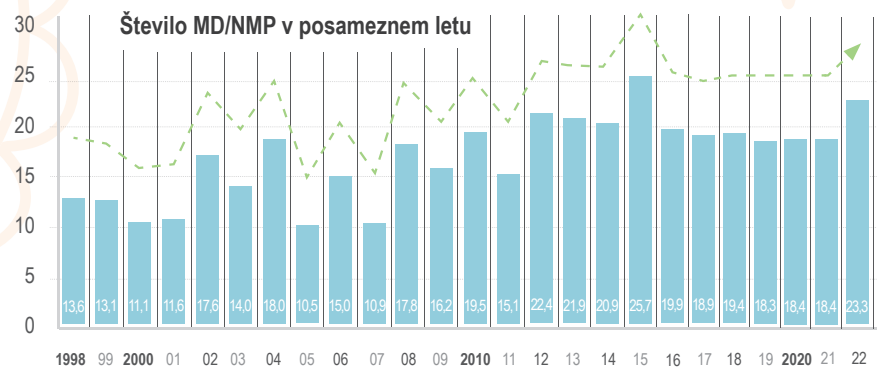
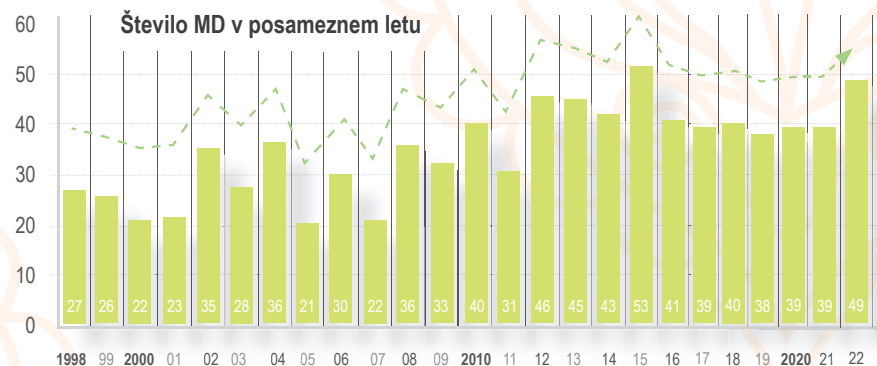
Število dejanskih umrlih darovalcev (MD) ter število dejanskih umrlih darovalcev na milijon prebivalcev (MD/NMP) Sloveniji v letih od 1998 do 2022

Leto	Število MD	Število MD/NMP
1998	27	13,6
1999	26	13,1
2000	22	11,1
2001	23	11,6
2002	35	17,6
2003	28	14
2004	36	18
2005	21	10,5
2006	30	15
2007	22	10,9
2008	36	17,8
2009	33	16,2
2010	40	19,5

Leto	Število MD	Število MD/NMP
2011	31	15,1
2012	46	22,4
2013	45	21,9
2014	43	20,9
2015	53	25,7
2016	41	19,9
2017	39	18,9
2018	40	19,4
2019	38	18,3
2020	39	18,5
2021	39	18,5
2022	49	23,3
SKUPAJ	882	17,3

Vir: <http://statistics.eurotransplant.org/>

Število dejanskih umrlih darovalcev (MD) in število dejanskih umrlih darovalcev na milijon prebivalcev (MD/NMP) v Sloveniji v letih od 1998 do 2022



Klasifikacija umrlih darovalcev organov

MOREBITEN UMRLI DAROVALEC ORGANOV		
Bolnik s hudo poškodbo možganov ALI bolnik z zaustavitvijo krvnega obtoka IN očitno medicinsko primeren za darovanje organov		
Darovanje po smrti zaradi zaustavitve krvnega obtoka (DSK)	Lečeči zdravnik prepozna/opozori na možnega darovalca	Darovanje po možganski smrti (DMS)
MOŽEN DAROVALEC (DSK) a. Oseba, pri kateri se je zaustavilo delovanje krvnega obtoka in dihanje, postopki oživljanja se ne uporabijo oz. se ne nadaljujejo. ALI b. Oseba, pri kateri je mogoče predvideti, da se bo v določenem časovnem okviru zaustavilo delovanje krvnega obtoka in dihanje, kar bo omogočilo pridobitev organov.	Razlogi, zakaj možen darovalec ne postane dejanski darovalec SISTEM DELA - Zdravstveno osebeje ni prepoznalo /opozorilo na možnega mrtvega darovalca ali primerne darovalca, - Možganska smrt ni potrjena (npr. ne izpolnjuje meril) oz. postopek ugotavljanja MS ni zaključen (npr. ker ni na voljo ustreznih diagnostičnih naprav oz. osebeja, ki bi opravilo potrditveni test), - Smrt zaradi zaustavitve krvnega obtoka ni pravočasno potrjena, - Logistične težave (npr. ekipa za odvzem organov ni na voljo), - Ni ustreznega prejemnika (npr. pri otroku, krvna skupina, pozitivna serologija). DAROVALEC/ORGAN - Medicinsko neustrezen (npr. pozitivna serologija, tumor), - Hemodinamska nestabilnost /nepredvidena zaustavitev srca, - Anatomske, histološke in/ali funkcionalne nepravilnosti organov, - Organi poškodovani med postopkom pridobivanja, - Nezadostna perfuzija organov ali krvni strdek. PRIVOLITEV - Umrli je za časa življenja izrazil voljo, da ne želi biti darovalec, - Zavrnitev svojcev umrlega, - Zavrnitev mrtiškega oglednika ali preiskovalnega sodnika zaradi forenzičnih razlogov.	MOŽEN DAROVALEC (DMS) Oseba, katere klinično stanje kaže na verjetnost, da izpolnjuje merila za možgansko smrt.
PRIMEREN DAROVALEC (DSK) Medicinsko ustrezna oseba, pri kateri je bila ugotovljena smrt na podlagi nepovratne prekinitev delovanja krvnega obtoka in dihanja, glede na relevantno zakonodajo, v časovnem okviru, ki omogoča pridobitev organov.		PRIMEREN DAROVALEC (DMS) Medicinsko ustrezna oseba, pri kateri je bila ugotovljena smrt na podlagi nevroloških meril, glede na relevantno zakonodajo.
AKTIVEN DAROVALEC (DSK) Primeren darovalec, za katerega imamo privolitev a. Narejen je bil operacijski rez z namenom pridobitve organov za namen presaditve. ALI b. Pridobljen je bil vsaj en organ za namen presaditve.		AKTIVEN DAROVALEC (DMS) Primeren darovalec, za katerega imamo privolitev a. Narejen je bil operacijski rez z namenom pridobitve organov za namen presaditve. ALI b. Pridobljen je bil vsaj en organ za namen presaditve.
DEJANSKI DAROVALEC (DSK) Aktiven darovalec, od katerega je bil presajen vsaj en organ.		DEJANSKI DAROVALEC (DMS) Aktiven darovalec, od katerega je bil presajen vsaj en organ.
Upoštevali je potrebno »pravilo umrlega darovalca«. Bolnik lahko postane darovalec šele po smrti, pridobitev organov ne sme povzročiti smrti darovalca.		

Povzeto po Madridski resoluciji o darovanju organov in transplantaciji

REGISTER OPREDELJENIH OSEB GLEDE DAROVANJA ORGANOV IN TKIV PO SMRTI

Vsak slovenski državljan ima v času življenja pravico in možnost, da se opredeli glede darovanja organov in tkiv. Od junija 2017 je poleg opredelitve za darovanje mogoča tudi opredelitev proti darovanju. Odločitev formalno potrdimo z vpisom v nacionalni register opredeljenih oseb, ki je bil vzpostavljen leta 2004. Obrazec za opredelitev glede darovanja lahko podpišemo elektronsko z digitalnim podpisom preko portala eUprava (<https://e-uprava.gov.si/>) ali osebno na številnih pooblaščenih mestih v več krajih po Sloveniji (seznam je objavljen na www.slovenija-transplant.si).

V letu 2022 se je v nacionalni register opredeljenih oseb glede posmrtnega darovanja vpisalo največ oseb na letni ravni doslej. Zbrali smo 2.010 opredelitev (1.956 za, 54 proti). V nacionalnem registru opredeljenih oseb glede darovanja organov po smrti je bilo 31. 12. 2022 skupaj vpisanih 13.579 oseb (od tega 13.496 za in 83 proti). Elektronski način vpisa je od vzpostavitve v novembru 2018 uporabilo 4.183 oseb. V letu 2022 je elektronsko možnost uporabilo 80 % vseh opredeljenih.

Število vpisanih v registru opredeljenih oseb glede darovanja organov in tkiv po letih v obdobju od 2004 do 2022

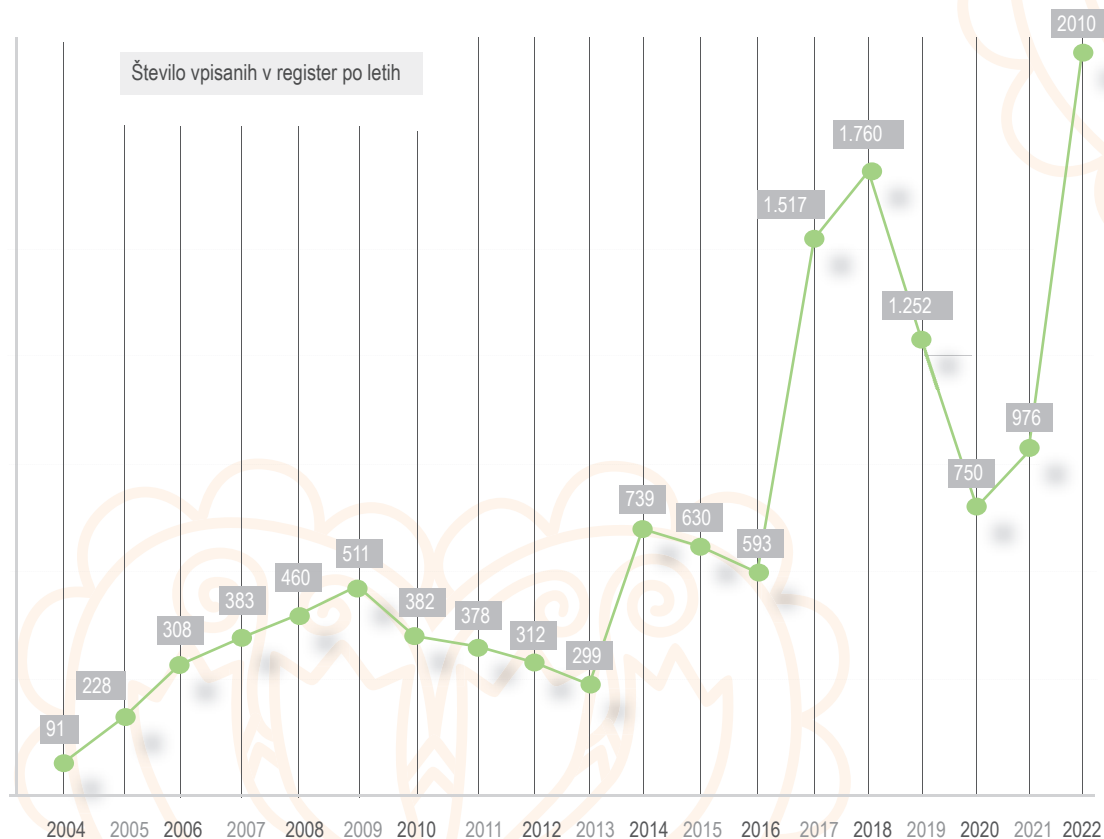
Vir: arhiv Slovenija-transplanta

Leto	Št. vpisanih
2004	91
2005	228
2006	308
2007	383
2008	460
2009	511
2010	382

Leto	Št. vpisanih
2011	378
2012	312
2013	299
2014	739
2015	630
2016	593
2017	1.517

Leto	Št. vpisanih
2018	1.760
2019	1.252
2020	750
2021	976
2022	2010
SKUPAJ	13.579

Število vpisanih v register opredeljenih oseb glede darovanja organov in tkiv po letih v obdobju 2004–2022



STOPNJA PRIVOLITEV SVOJCEV ZA DAROVANJE

Pogovor s svojci oz. bližnjimi osebami možnega mrtvega darovalca glede darovanja se opravi v vseh primerih, ko je mogoče izpeljati postopke za darovanje organov za presaditev in odvzem od umrle osebe. Transplantacijski koordinator po potrditvi smrti in vpisu časa smrti preveri v registru, ali je bil umrli opredeljen kot darovalec organov. Kljub znani opredelitvi je treba v skladu z veljavno zakonodajo s svojci umrlega opraviti pojasnilni pogovor o darovanju. V primeru privolitve se nato v nadaljevanju pogovora pridobijo dodatni zdravstveni podatki, ki so pomembni za darovanje.

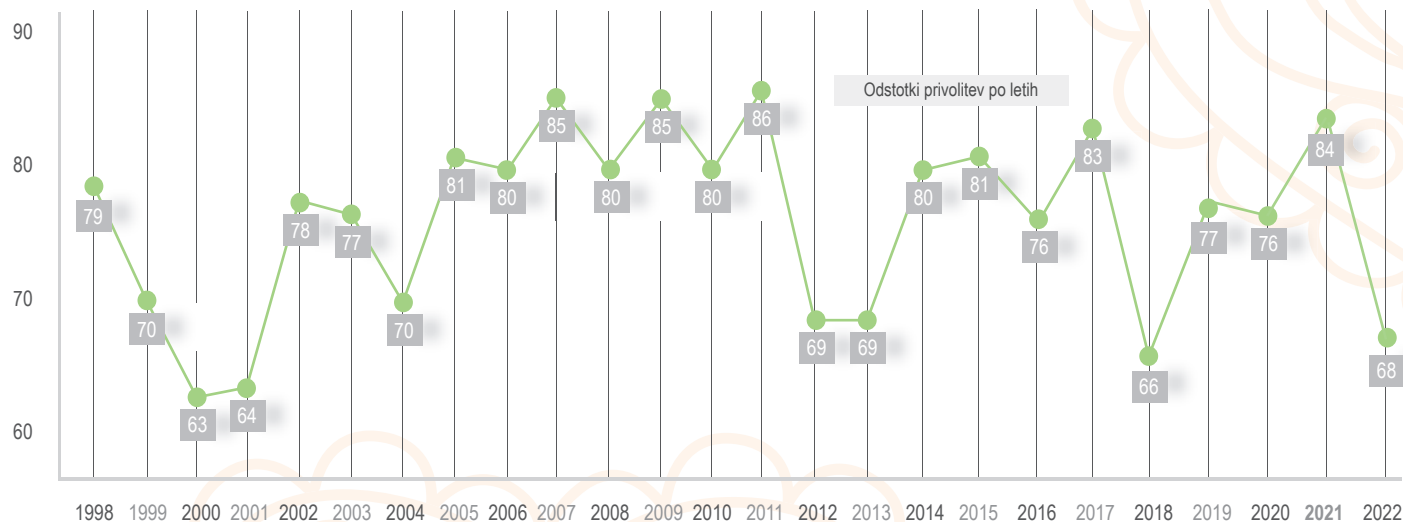
Če volja umrlega ni znana, glede darovanja odločajo svojci. Pogovor je v tem primeru za zdravstveno osebje in še posebej za svojce bistveno zahtevnejši. Vsi postopki so izvedeni z visoko stopnjo sočutja, razumevanja izjemno težkih čustvenih okoliščin ter v skladu z zakonodajnimi določbami in medicinsko doktrino. V letu 2022 je soglasje za odvzem organov po smrti bližnjega podalo 68 % svojcev.

Slovenija-transplant svojcem umrlih darovalcev nudi možnost posvetovanja ob žalovanju s strokovno usposobljenimi in izkušenimi strokovnjaki.

Odstotki privolitev za darovanje v obdobju od 1998 do 2022

Leto	%	Leto	%	Leto	%	Leto	%	Leto	%
1998	79	2003	77	2008	80	2013	69	2018	66
1999	70	2004	70	2009	85	2014	80	2019	77
2000	63	2005	81	2010	80	2015	81	2020	76
2001	64	2006	80	2011	86	2016	76	2021	84
2002	78	2007	85	2012	69	2017	83	2022	68

Odstotki privolitev za darovanje v obdobju od 1998 do 2022



DELOVANJE DONORSKIH BOLNIŠNIC

V slovenski donorski program je vključenih enajst donorskih bolnišnic oz. centrov: UKC Ljubljana in UKC Maribor ter splošne bolnišnice v Celju, Murski Soboti, Novi Gorici, Izoli, Novem mestu, Slovenj Gradcu, Brežicah, na Ptuju in Jesenicah.

V donorskih bolnišnicah izvajajo naslednje dejavnosti:

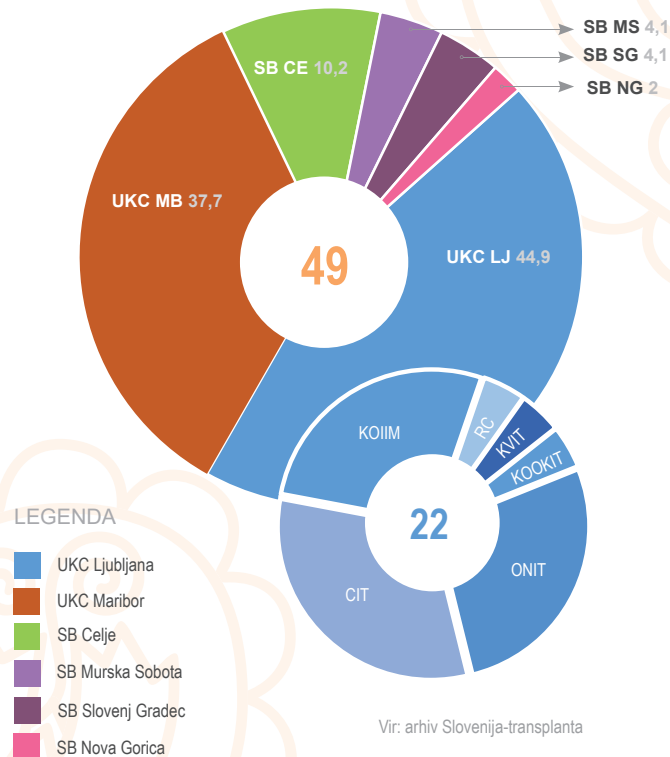
- prepoznavajo možne umrle darovalce,
- izvajajo diagnostiko možganske smrti,
- ugotavljajo primernost organov in tkiv za odvzem in presaditev,
- seznanjajo pokojnikove bližnje z možnostjo darovanja in pridobijo soglasje svojcev,
- ohranjajo delovanje organov mrtvih darovalcev – na oddelkih intenzivne medicine in med odvzemom organov,
- sodelujejo pri odvzemih organov in tkiv, ki jih izvajajo slovenske in tuje kirurške ekipe.

Največ darovalcev v Sloveniji pridobijo v UKC Ljubljana, kjer imajo največje skupno število postelj na oddelkih intenzivne medicine. V letu 2022 so pridobili 22 dejanskih umrlih darovalcev. Donorski program učinkovito izvajajo tudi v UKC Maribor, kjer so pridobili 17 dejanskih umrlih darovalcev, in v SB Celje s petimi pridobljenimi dejanskimi umrlimi darovalci. Po dva dejanska darovalca so imeli v SB Murska Sobota in SB Slovenj Gradec, enega pa v SB Nova Gorica.

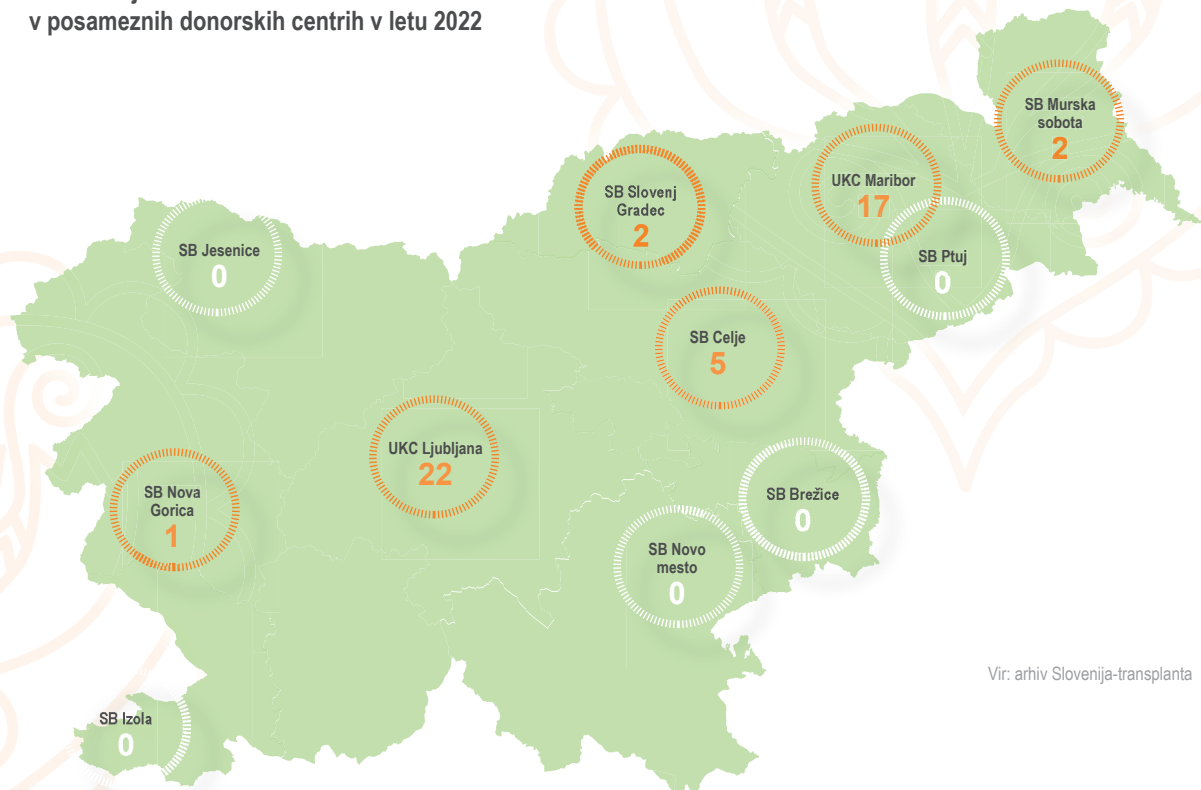
Število in delež dejanskih umrlih darovalcev v posameznih donorskih bolnišnicah (DC) v letu 2022

Donorska bolnišnica	Število MD	Delež v %
UKC Ljubljana skupaj	22	44,9
Od tega ONIT*	6	
Od tega CIT	7	
Od tega KOIIM	6	
Od tega KOOKIT	1	
Od tega KVVIT	1	
Od tega RC	1	
UKC Maribor	17	37,7
SB Celje	5	10,2
SB Murska Sobota	2	4,1
SB Slovenj Gradec	2	4,1
SB Nova Gorica	1	2
SB Ptuj	0	
SB Brežice	0	
SB Novo mesto	0	
SB Jesenice	0	
SKUPAJ	49	100

* ONIT – oddelek nevrološke intenzivne terapije, CIT – centralna intenzivna terapija, KOIIM – klinični oddelek interne intenzivne medicine, KOOKIT – klinični oddelek za otroško kirurgijo in intenzivno terapijo, KVVIT – kardiovaskulna intenzivna terapija, RC – respiratorni center



Število dejanskih umrlih darovalcev
v posameznih donorskih centrih v letu 2022



Vir: arhiv Slovenija-transplanta



17. marca 2022 smo slovesno razglasili rezultate I. nagrajnega natečaja Slovenija-transplanta za najboljše raziskovalno delo s področja donorske medicine/dejavnosti.

1. nagrada (800 €)

Veronika Prtenjak: Pravne dileme darovanja človeških organov – darovanje ali trgovanje?

2. nagrada (500 €)

Eneja Kovač: Človeško telo kot premoženje

3. nagrada (200 €)

Ana Sevšek: Doživljanje svojcev pri odločitvi o darovanju organov možgansko mrtvega družinskega člana

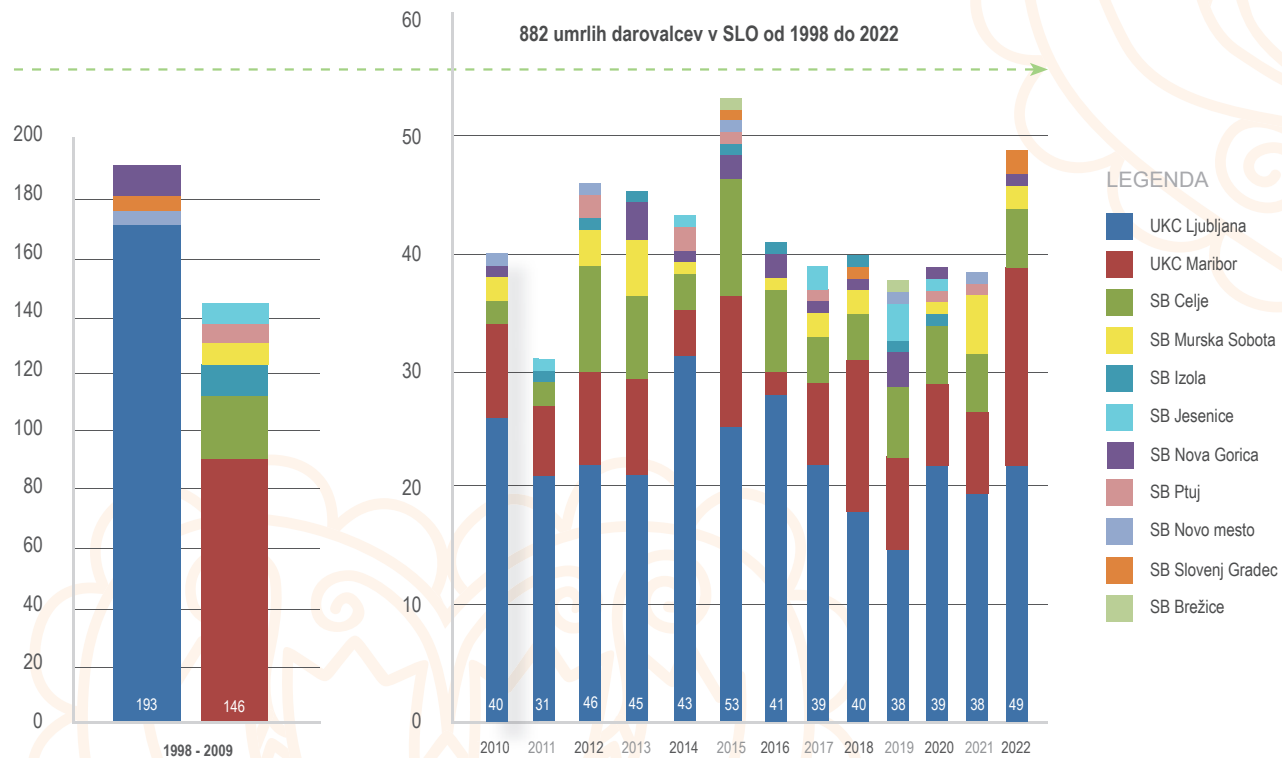


od 1998 do 2022

Vir: arhiv Slovenija-transplanta

Leto	UKC LJ	UKC MB	SB CE	SB MS	SB NG	SB Izola	SB Ptuj	SB JE	SB NM	SB SG	SB Brežice
1998-2009	176	95	22	7	10	9	7	6	3	4	
2010	26	8	2	2	1				1		
2011	21	6	2			1		1			
2012	22	8	9	3		1	2		1		
2013	21	8	7	5	3	1					
2014	31	4	3	1	1		2	1			
2015	25	11	10		2	1	1		1	1	1
2016	28	2	7	1	2	1					
2017	22	7	4	2	1		1	2			
2018	18	13	4	2	1	1				1	
2019	15	8	6		3	1		3	1		1
2020	22	7	5	1	1	1	1	1			
2021	20	7	5	5			1		1		
2022	22	17	5	2	1					2	
SKUPAJ	469	201	91	31	26	17	15	14	8	8	2

Število dejanskih umrlih darovalcev po donorskih centrih od 1998 do 2022



Potencial in realizacija v donorskih bolnišnicah za leto 2022

Potencial za darovanje za posamezno donorsko bolnišnico se izraža kot odstotek možgansko umrlih od vseh umrlih na oddelku za intenzivno medicino (OIM). Pove nam, pri koliko umrlih je bila do konca izpeljana diagnostika možganske smrti. Potencial je v neposredni povezavi z odkrivanjem primernih darovalcev na OIM.

Realizacija v procesu darovanja nam pove, koliko primernih darovalcev (dokazana možganska smrt) je postalo aktivnih darovalcev. Izraža se kot odstotek aktivnih darovalcev od vseh dokazanih možgansko umrlih na OIM.

Vir: arhiv Slovenija-transplanta

Donorska bolnišnica	Vse smrti v OIM	MD	PD	*Potencial (%)	Dosegljivi (%)	AD	Realizacija (%)	**Dosegljiva (%)
UKC Ljubljana	372	64	41	11	13,7	25	61	65
UKC Maribor	228	32	26	11.4	13.7	18	69	65
SB Celje	179	11	10	5.6	8.3	8	80	55
SB Murska Sobota	133	12	5	3.8	8.3	2	40	55
SB Novo mesto	96	2	1	1	8.3	0	/	55
SB Nova Gorica	84	1	1	1.2	8.3	1	100	55
SB Slovenj gradec	60	4	3	5	8.3	2	67	55
SB Izola	58	1	1	1.7	8.3	0	/	55
SB Ptuj	56	0	0	0	8.3	0	/	55
SB Jesenice	43	0	0	0	8.3	0	/	55
SB Brežice	22	1	1	4.5	8.3	0	/	55

OIM – oddelek za intenzivno medicino, **MD** – možni darovalec, **PD** – primerni darovalec (dokazana možganska smrt), **AD** – aktivni darovalec (privolitve svojcev, odvzem organov), **Potencial** - % možgansko umrlih od vseh umrlih na OIM = % PD/vse smrti na OIM.

Realizacija - % aktivnih darovalcev od vseh možgansko umrlih = % AD/PD

*Potencial za donorsko bolnišnico je pričakovano višji za bolnišnice, ki imajo lastno nevrokirurško enoto in lahko dosežejo potencial tudi do 13,7 % (dosegljivi potencial). V letu 2022 se je UKC Ljubljana približal svojemu potencialu, saj OIM po marcu niso bili več prezasedeni s kovidnimi pacienti. Tudi bolnišnični koordinatorji za transplantacije, ki pravočasno prepoznavajo možne darovalce, so se vrnili na svoja redna delovišča. UKC Maribor je v letu 2022 naredil izjemen korak naprej in po doseženem potencialu celo prehitel UKC Ljubljana. Razlogi za tak uspeh so enaki kot v Ljubljani, poleg tega pa je izjemna ekipa koordinatorjev, kot prva v celotni nacionalni donorski mreži, začela uvajati program po novih smernicah pri zdravljenju in oskrbi kritično bolnih v enotah intenzivne medicine in možnosti za darovanje organov in tkiv po smrti (program ICOD).

Za bolnišnice brez lastne nevrokirurške enote je dosegljivi potencial za darovanje do 8,3 %. Tej številki se je leta 2022 ponovno najbolj približala SB Celje; blizu so bile še SB Murska Sobota, SB Slovenj Gradec in SB Brežice, kjer pa ni bilo aktivnega darovalca zaradi odklonitve svojcev. Enega aktivnega darovalca je imela v letu 2022 SB Nova Gorica, v preostalih petih donorskih bolnišnicah pa ni bilo nobenega aktivnega darovalca, predvsem zaradi specifičnih lastnosti sprejetih bolnikov, pomanjkljive osveščenosti lečečih zdravnikov o detekciji možnih/primernih darovalcev in zaradi zavrnitve darovanja s strani svojcev.

**V letu 2022 je pet donorskih bolnišnic, v katerih je bil vsaj en aktivni darovalec, presešlo dosegljivo realizacijo, in to kljub zelo visoki stopnji odklonitve soglasja svojcev pri pogovoru o darovanju (UKC LJ 38 % in UKC MB 32 % odklonitev).

Rezultati na področju realizacije so tako dobri zaradi izjemnega dela, ki so ga v letu 2022 opravile ekipe, zadolžene za prepoznavanje darovalcev na oddelkih za intenzivno medicino, v primeru UKC Maribor pa tudi na Urgenci v sklopu prej omenjenega programa ICOD.

V SB Murska Sobota je bila realizacija le 40-odstotna, odklonitev svojcev za darovanje pa kar 60-odstotna. Pri nizkih vrednostih potenciala zasledimo tudi odstopanja, kot npr. v SB Nova Gorica, kjer so dosegli 100-odstotno realizacijo pri edinem primeru, pri katerem ni bilo medicinskih kontraindikacij za darovanje, prav tako pa so svojci v darovanje privolili. V takih primerih je večletna bilanca natančnejša in v skladu s pričakovanimi rezultati.

Pri bolnišnicah, v katerih leta 2022 ni bilo dokazanih možganskih smrti in ni bilo aktivnih darovalcev, sta potencial in realizacija prav tako 0 % oziroma nemerljiva (/).

Seznam odgovornih oseb (t. i. bolnišničnih transplantacijskih koordinatorjev), ki skrbijo za razvoj, potek ter delovanje donorskega programa v posameznih donorskih centrih za leto 2022

Donorski center	Odgovorne osebe
UKC Ljubljana	prim. asist. mag. Rade Stanić, dr. med.
UKC Maribor	Tanja Kuprivec (do septembra)/Natalija Krobe, dr. med.
SB Brežice	Nataša Pirc, dr. med.
SB Celje	Barbara Hudournik, dr. med.
SB Izola	Damjan Polh, dr. med.
SB Jesenice	Andraž Nastran, dr. med.
SB Murska Sobota	prim. Daniel Grabar, dr. med.
SB Nova gorica	Edyta Čerkini, dr. med.
SB Novo mesto	Matej Godnič, dr. med.
SB Ptuj	Mateja Prevolšek, dr. med.
SB Slovenj Gradec	Rok Popič, dr. med.



Izobraževanje: Osnove donorskega programa v Splošni bolnišnici Celje, 14. september 2022.

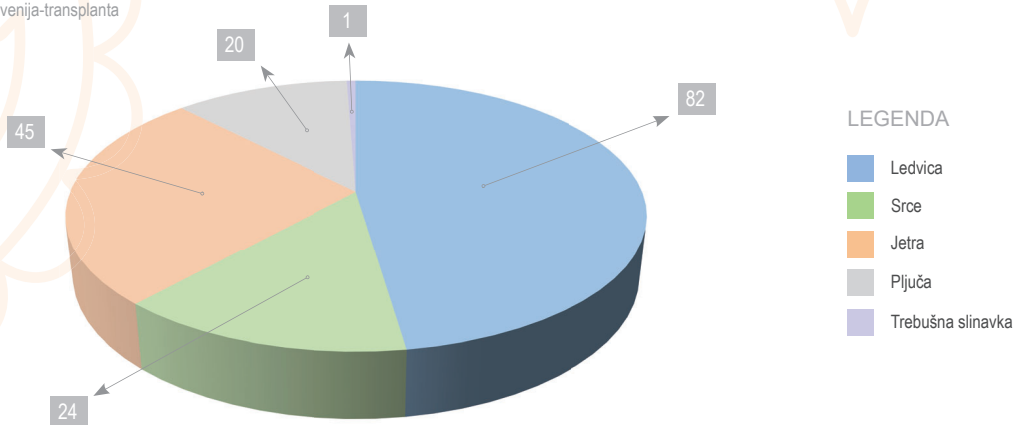
PRIDOBLENI ČVRSTI ORGANI ZA NAMEN ZDRAVLJENJA

Število pridobljenih organov je odvisno od števila pridobljenih umrlih darovalcev, od njihove starosti in medicinskih kontraindikacij ter od vzdrževanja primerne funkcije organov pri umrlem darovalcu po dokazani možganski smrti. V letu 2022 je bilo število umrlih darovalcev visoko in delo bolnišničnih transplantacijskih koordinatorjev (BTK) med vzdrževanjem primernega darovalca izjemno, posledično pa smo pridobili tudi več organov. Darovalci so podarili 172 organov, kar je najvišje število po letu 2013. V nadaljevanju so prikazani podatki za leto 2022 in primerjava s preteklimi leti.

Število pridobljenih organov slovenskih umrlih darovalcev v letu 2022

Ledvica	Srce	Jetra	Pljuča (obe pljučni krili)	Trebušna slinavka	SKUPAJ
82	24	45	20	1	172

Vir: arhiv Slovenija-transplanta



Pridobljeni organi slovenskih umrlih darovalcev od leta 2000 do 2022

Leto	Ledvica	Srce	Jetra	Pljuča (obe krili)	Trebušna slinavka	SKUPAJ
2000-2009	559	149	217	70,5	76	1.071,5
2010	80	20	37	13	8	158
2011	58	14	24	4	5	105
2012	89	25	39	8	5	166
2013	86	26	39	19	8	178
2014	80	16	38	11	2	147
2015	92	20	46	6	6	170
2016	68	13	39	13,5	2	135,5
2017	68	19	40	15	4	146
2018	79	17	34	9	3	142
2019	75	15	31	11	/	132
2020	68	17	34	13	4	136
2021	60	13	32	18	2	125
2022	82	24	45	20	1	172
SKUPAJ	1.544	388	695	231	126	2.984

Vir: arhiv Slovenija-transplanta

Pridobljeni organi slovenskih umrlih darovalcev od 2010 do 2022

1.915,5 pridobljenih organov umrlih darovalcev v SLO od 2010 do 2022



PRESAJENI ČVRSTI ORGANI

V Sloveniji imamo en transplantacijski center, to je Univerzitetni klinični center v Ljubljani, kjer se izvajajo programi za presaditve čvrstih organov. Sistem razporejanja organov zagotavlja enako dostopnost do zdravljenja s presaditvijo organov vsem državljanom Slovenije.

Naloge transplantacijskega centra so:

- priprava prejemnikov za uvrstitev na čakalni seznam,
- presaditev organov,
- vodenje bolnikov po presaditvi.

Center za transplantacijsko dejavnost (CTD) v UKC Ljubljana od leta 2014 vodi kardiovaskularni kirurg, doc. dr. Ivan Knežević, dr. med.

V letu 2022 je bilo opravljenih 111 presaditev organov, od tega je bilo 109 organov pridobljenih od umrlih darovalcev, dve ledvici pa od živih darovalcev. Največ je bilo presajenih ledvic. Po številu presajenih organov od umrlih darovalcev na milijon prebivalcev smo nekoliko nad povprečjem držav Eurotransplanta. Pomembno višje pa je število presaditev src na milijon prebivalcev, kjer smo v letu 2022 ponovno zasedli prvo mesto na svetu.

Pediatrične transplantacije delno opravljajo v UKC Ljubljana, za najmlajše otroke pa v bližnjih evropskih transplantacijskih centrih (ledvice v Gradcu, jetra v Bergamu). Za obravnavo in pripravo pred presaditvijo in zdravljenje ter sledenje bolnika po presaditvi organa poskrbijo na pristojnih oddelkih v UKC Ljubljana.

Presajeni čvrsti organi umrlih darovalcev v UKC Ljubljana v letu 2022 in primerjava z Eurotransplantom - absolutno število in število na milijon prebivalcev (NMP)

	Ledvica MD		Srce		Jetra		Pljuča		Trebušna slinavka		SKUPAJ	
	Št.	NMP	Št.	NMP	Št.	NMP	Št.	NMP	Št.	NMP	Št.	NMP
SLO	51	24,2	29	13,8	18	8,5	10	7,1	1	0,5	109	51,7
ET	2993	21,6	645	4,7	1456	10,9	604	4,4	114	0,9	5812	42,4

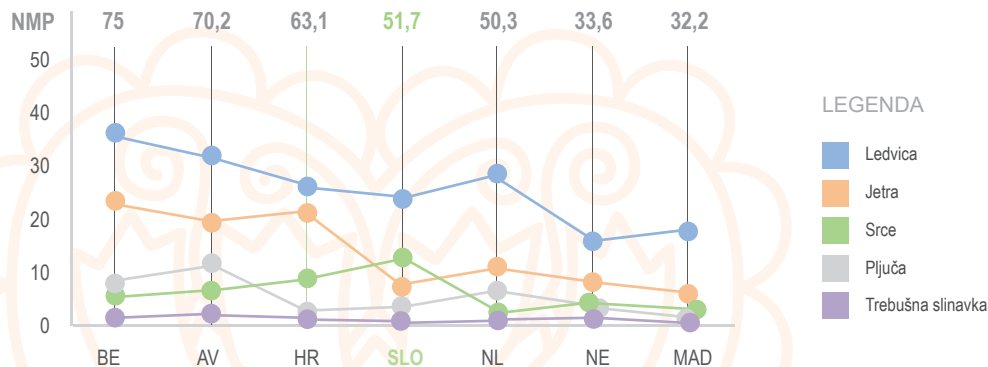
Vir: arhiv Slovenija-transplanta in <http://statistics.eurotransplant.org/>



Število presajenih čvrstih organov umrlih darovalcev na milijon prebivalcev (NMP) v Sloveniji leta 2022 in primerjava z državami Eurotransplanta

Država ET	Ledvica	Jetra	Srce	Pljuča	Trebušna slinavka	Število presaditev/NMP
1. Belgija (BE)	36,4	23,1	5,4	8,2	1,9	75
2. Avstrija (AV)	31,3	18,6	6,9	11,4	2	70,2
3. Hrvaška (HR)	26,3	22,9	9,8	2,6	1,5	63,1
4. Slovenija (SLO)	24,2	8,5	13,8	4,7	0,5	51,7
5. Nizozemska (NL)	28	10,5	2,9	6,9	2	50,3
6. Nemčija (NE)	17,2	8,5	4,3	3,1	0,5	33,6
7. Madžarska (MAD)	19,6	6,9	4,1	1,2	0,4	32,2

Vir: arhiv Slovenija-transplanta in <http://statistics.eurotransplant.org/>



Število presajenih čvrstih organov umrlih darovalcev v Sloveniji oz. slovenskim prejemnikom od leta 1970 do 2022

Leto	Ledvica	Srce	Jetra	Pljuča*	Trebušna slinavka	SKUPAJ
Od 1970 do 1985	1					1
1986	7					7
1987	18					18
1988	16					16
1989	14					14
1990	17	1			1	19
1991	11					11
1992	20					20
1993	4	1				5
1994	14	2				16
1995	10	3	1			14
1996	6	2				8
1997	19	6		1		26
1998	46	4	4			54
1999	37	7	9	3		56
2000	44	7	10	1		62
2001	47	4	9	1		61
2002	55	3	11			69
2003	43	3	9	2		57
2004	55	3	15			73

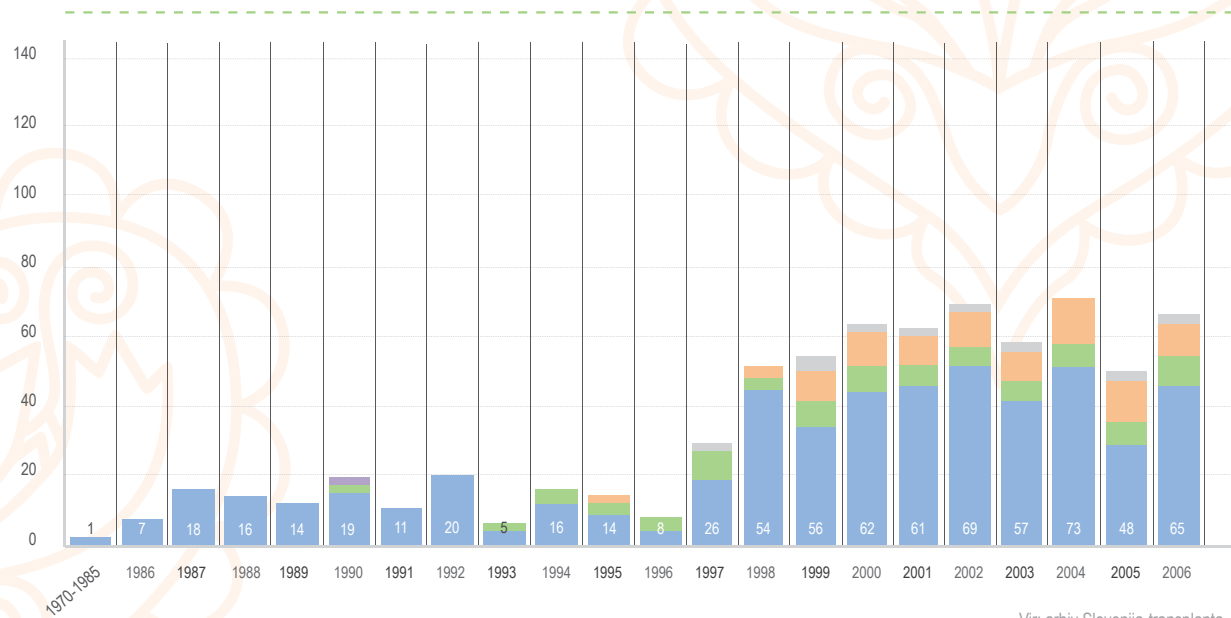
Leto	Ledvica	Srce	Jetra	Pljuča*	Trebušna slinavka	SKUPAJ
2005	28	5	13	2		48
2006	48	8**	8	2		66
2007	30	11	10	1		52
2008	52	6	22	4		84
2009	43	18	18	2	2	83
2010	61	19	23	3	1	107
2011	46	14	20	7	1	88
2012	62	29***	27	2		120
2013	60	30	21	8	4	123
2014	55	33	31	3		122
2015	64	24	24	7	5	124
2016	44	31	27	10	5	117
2017	46	24	23	8		101
2018	54	23	27	7	3	114
2019	38	22	24	11	1	96
2020	46	24	25	16	2	113
2021	51	17	21	15		104
2022	51	29	18	10	1	109
SKUPAJ	1.363	413	450	126	26	2.378

* Večina presaditev pljuč pri slovenskih prejemnikih je bila do vključno leta 2018 opravljena v AKH na Dunaju, z izjemo 2003 (1 presaditev v UKC LJ) in 2018 (2 presaditvi v UKC LJ). V letu 2019 je bilo v UKC Ljubljana opravljenih 10 presaditev pljuč in ena pediatrična presaditev v AKH Dunaj, v letu 2020 in 2021 so bile vse presaditve opravljene v UKC Ljubljana.

** Eno srce slovenskega darovalca je bilo p resajeno slovenskemu bolniku v Gradcu.

*** Eno srce je bilo skupaj s pljuči presajeno slovenskemu bolniku na Dunaju

Število presajenih čvrstih organov umrlih darovalcev v Sloveniji
oz. slovenskim prejemnikom od leta 1970 do 2006



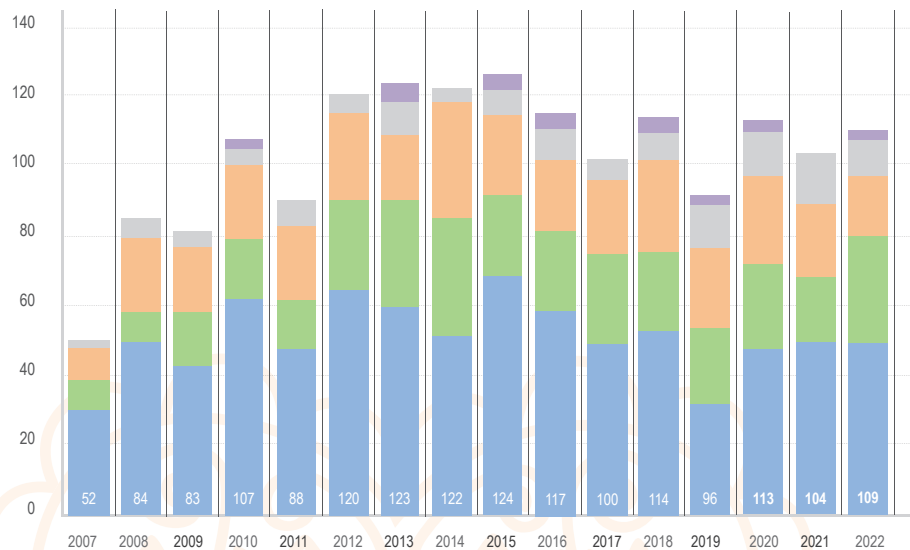
LEGENDA

■ Ledvica
 ■ Srce
 ■ Jetra
 ■ Pljuča
 ■ Trebušna slinavka

Vir: arhiv Slovenija-transplanta

Število presajenih čvrstih organov umrlih darovalcev v Sloveniji oz. slovenskim prejemnikom od leta 2007 do 2022

2.378 presajenih čvrstih organov umrlih darovalcev v SLO od 1970 do 2022



Vir: arhiv Slovenija-transplanta

LEGENDA

■ Ledvica

■ Srce

■ Jetra

■ Plijuča

■ Trebušna slinavka

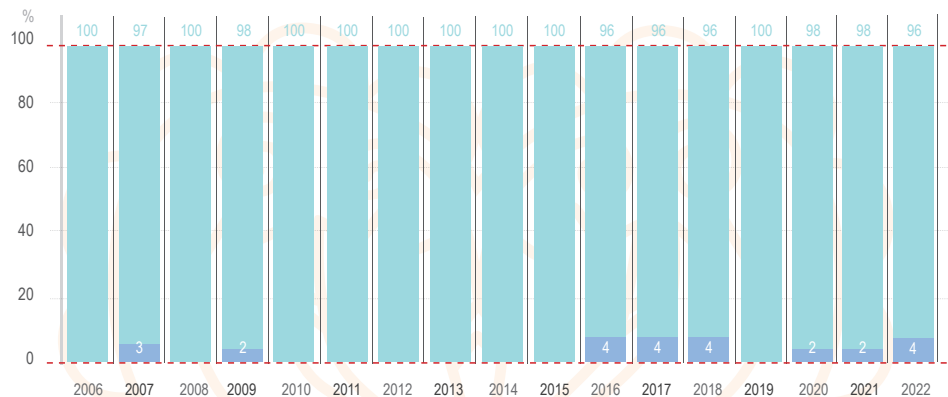
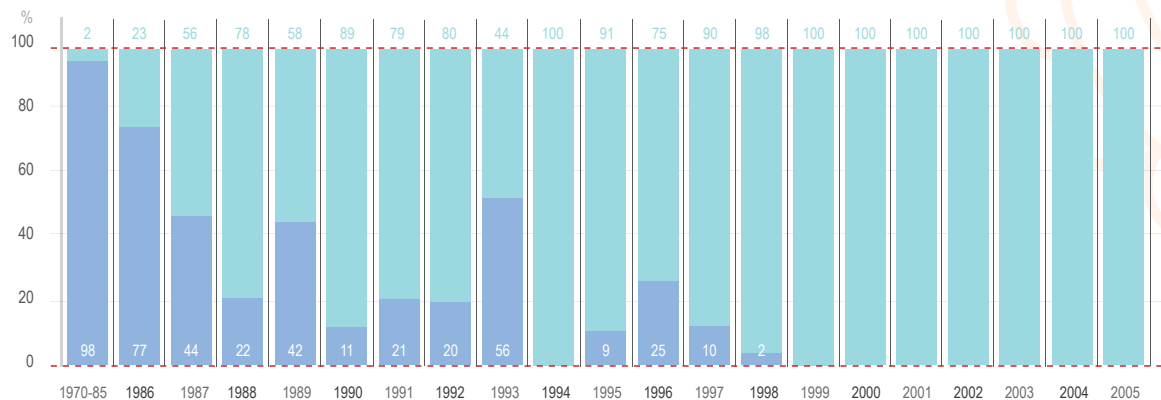
Število presajenih ledvic od živega darovalca

V Sloveniji je za časa življenja možno darovati ledvico le med sorodniki ali čustveno povezanimi osebami. Vsak primer presoja Etična komisija za presaditve, ob upoštevanju načela, da mora biti tveganje za zdravje darovalca sorazmerno pričakovani koristi za prejemnika. Ob začetku slovenskega transplantacijskega programa, od leta 1970 dalje, so sprva prevladovala presaditve ledvic od živih sorodnih darovalcev, od leta 1987 naprej pa je bila z razvojem nacionalnega donorskega programa večina organov za presaditev pridobljena od umrlih darovalcev. Programa presaditev ledvice živega darovalca nekaj let niso izvajali, od leta 2016 dalje pa v UKC Ljubljana opravijo 1–2 presaditvi na leto. V letu 2022 sta bili opravljeni dve tovrstni presaditvi.

Število presajenih ledvic od živega darovalca 1970 - 2022

Leto	Št.	Leto	Št.	Leto	Št.	Leto	Št.	Leto	Št.	Leto	Št.
1970-85	43	1992	5	1999	0	2006	0	2013	0	2020	1
1986	23	1993	5	2000	0	2007	1	2014	0	2021	1
1987	14	1994	0	2001	0	2008	0	2015	0	2022	2
1988	13	1995	1	2002	0	2009	1	2016	2		
1989	10	1996	2	2003	0	2010	0	2017	2		
1990	2	1997	2	2004	0	2011	0	2018	2		
1991	3	1998	1	2005	0	2012	0	2019	0		
SKUPAJ		136									

Deleži presajenih ledvic živih in umrlih darovalcev v % od 1970 do 2022



LEGENDA

- Delež presajenih ledvic živih darovalcev
= SKUPAJ 12,2 %
- Delež presajenih ledvic umrlih darovalcev
= SKUPAJ 87,8 %

REZULTATI PRI BOLNIKIH, ZDRAVLJENIH S PRESADITVIJO

Program za presaditev srca

Od leta 1990 do konca 2022 je bilo v UKC Ljubljana opravljenih 412 presaditev srca, v letu 2022 so presadili 29 src. Kar 26 bolnikov (93 %) je bilo transplantiranih urgentno, dva bolnika (7 %) pa redno. UKC Ljubljana s svojim programom za presaditve srca sodi med največje centre za presaditev srca v območju Eurotransplanta in se po številu opravljenih presaditev lahko primerja z največjimi centri v Nemčiji, Belgiji, na Madžarskem in v Avstriji. Na področju Eurotransplanta je skupaj 42 centrov, ki opravljajo presaditve srca.

Večletno povprečje (2009–2022) čakalne dobe za elektivno presaditev srca znaša okoli 250 dni, za urgentno presaditev srca pa približno 50 dni.

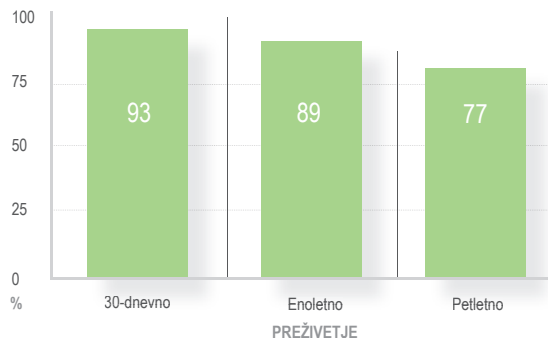
Najpogostejša vzroka za presaditev srca sta bila v letu 2022 dilatativna kardiomiopatija (48 %) in ishemična bolezen srca (31 %). Ostali vzroki so bili valvularna bolezen srca (7 %), aritmogena kardiomiopatija (7 %), hipertrofična kardiomiopatija (3,5 %) in kongenitalne hibe (3,5 %).

Rezultati preživetja bolnikov po presaditvi so primerljivi z rezultati iz mednarodnega referenčnega registra ISHLT (*The International Society for Heart & Lung Transplantation*).

Preživetje odraslih bolnikov po presaditvi srca v % (za obdobje 1990–2022, n = 412)

30-dnevno preživetje	Enoletno preživetje	Petletno preživetje
93 %	89 %	77 %

Vir: Poročilo o delovanju programa za napredovalo srčno popuščanje in presaditev srca za leto 2022 (KO za kardiologijo, UKC Ljubljana)



Program za presaditev ledvic

V Sloveniji je bilo v obdobju po priključitvi Eurotransplantu (1. 1. 2000–31. 12. 2022) presajenih 1.135 ledvic, od tega 1.123 ledvic, podarjenih od umrlih, in 12 ledvic od živih darovalcev. Nekaterim prejemnikom so ledvico presadili v kombinaciji z drugimi organi, in sicer petindvajsetim skupaj s trebušno slinavko, šestim skupaj s srcem in trem skupaj z jetri.

V letu 2022 je bilo presajenih skupaj 53 ledvic, od tega 51 od umrlega in dve od živega darovalca. V prvem letu po presaditvi so v obdobju 1. 1. 2000–31. 12. 2022 pri 12,7 % vseh bolnikov s presajenim organom zaznali klinično, z biopsijo dokazano akutno zavrnitev presadka; v letu 2022 se je to zgodilo pri 7,5 % vseh pacientov.

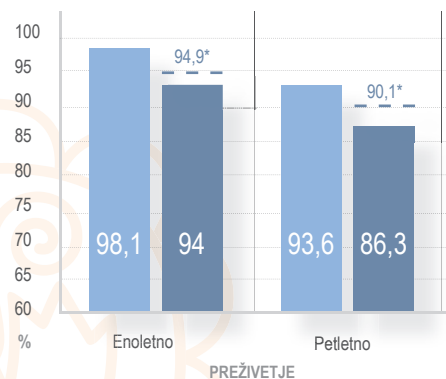
Mediani čas od uvrstitve na čakalni seznam do presaditve je približno 370 dni za obdobje 2010–2022. V letu 2022 je bil mediani čas od vključitve na čakalni seznam do presaditve 214 dni (v letu 2021 566 dni).

Vir: Kazalniki kakovosti Centra za transplantacijo ledvic (KO za nefrologijo, UKC Ljubljana)

* Zmanjšano za % bolnikov, ki so umrli z delujočim presadkom

Preživetje bolnikov in presadkov po presaditvi ledvice v % (za obdobje 2000–2022, n = 1.135)

Enoletno preživetje	Petletno preživetje
Bolniki	
98,1 %	93,6 %
Presadki	
94 %	86,3 %
94,9 %*	90,1 %*



LEGENDA % bolnikov % presadkov

Program za presaditev jeter

V obdobju od leta 1995 do 31. 12. 2022 je bilo v UKC Ljubljana skupaj opravljenih 450 presaditev jeter pri 406 bolnikih. 374 (92 %) presaditev je bilo rednih, zaradi zapletov jetrne ciroze oz. kroničnih jetrnih bolezni in jetrnih tumorjev, 32 (8 %) pa urgentnih, zaradi akutne jetrne odpovedi. Ponovno presaditev je potrebovalo 41 (10 %) bolnikov.

V letu 2022 so v UKC Ljubljana opravili 18 presaditev jeter pri 18 bolnikih, od tega devetim moškim in devetim ženskam. Pri 17 bolnikih je bila presaditev redna, zaradi zapletov kronične jetrne bolezni, ena presaditev pa je bila urgentna, zaradi akutne jetrne odpovedi.

Petim bolnikom (27,8 %, 3 moški in 2 ženski) so bila presajena jetra zaradi primarnega sklerozirajočega holangitisa (PSC), dvema moškima (11,1 %) zaradi kriptogene in dvema moškima (11,1 %) zaradi etilične jetrne ciroze. Dvema bolnicama (11,1 %) so jetra presadili zaradi primarnega biliarnega holangitisa (PBC) in dvema bolnicama (11,1 %) zaradi policistične bolezni jeter. Pri eni od slednjih je bila sočasno presajena tudi ledvica. Enemu bolniku so jetra presadili zaradi jetrne ciroze ob kroničnem hepatitisu B in enemu bolniku zaradi akutne jetrne odpovedi, do katere je prišlo po obsežni resekciji jeter zaradi hepatocelularnega karcinoma (HCC).

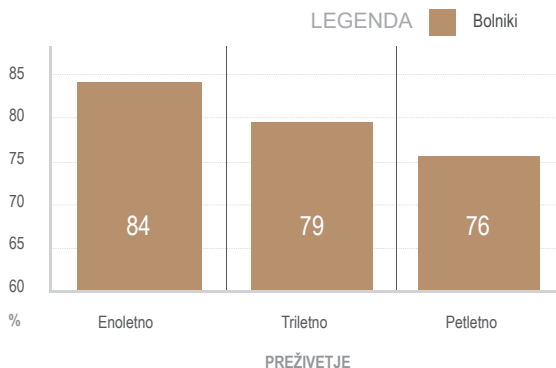
Po ena bolnica je imela presaditev jeter zaradi HCC, Abernethyjevega sindroma in zapletov jetrne ciroze, povzročene z avtoimunskim hepatitisom.

Povprečna čakalna doba za redno presaditev jeter je v letu 2022 znašala 67 dni (mediana 62 dni). V primeru urgentne presaditve jeter je ustrezen organ navadno na voljo v nekaj dneh.

Preživetje bolnikov po presaditvi jeter v % (za obdobje 1988–2022)

Enoletno preživetje	Triletno preživetje	Petletno preživetje
84 %	79 %	76 %

Vir: Poročilo o delovanju programa za presaditev jeter za leto 2022
(KO za gastroenterologijo, UKC Ljubljana)



Program za presaditev trebušne slinavke (sočasno z ledvico)

V obdobju od februarja 2009 do 31. 12. 2022 je bilo v Sloveniji opravljenih 25 sočasnih presaditev ledvice in trebušne slinavke. V letu 2022 je bila opravljena ena sočasna presaditev.

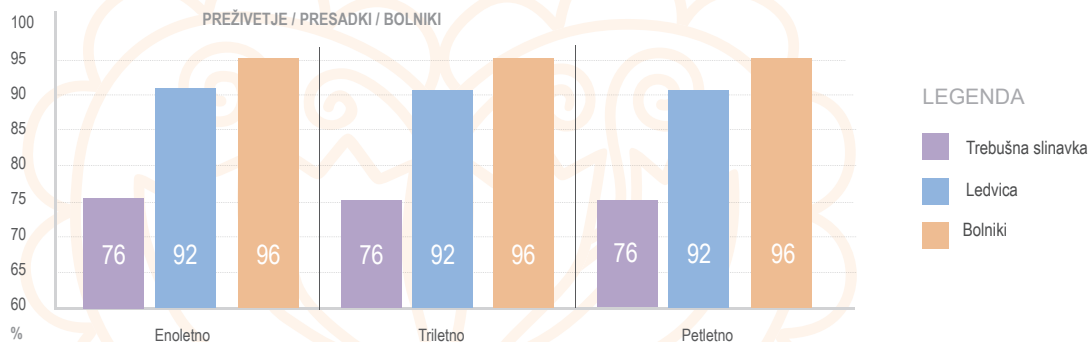
V celotnem obdobju od prve presaditve leta 2009 do 31. 12. 2022 je bilo pet trebušnih slinavk zaradi zapletov odstranjenih v zgodnjem potransplantacijskem obdobju. En bolnik je umrl v zgodnjem potransplantacijskem obdobju zaradi okužbe, trije bolniki pa v poznem potransplantacijskem obdobju. Konec leta 2022 je bilo v Sloveniji 16 bolnikov z delujočo presajeno trebušno

slinavko in ledvico. Vsi bolniki z delujočo trebušno slinavko so bili inzulinso neodvisni.

Preživetje bolnikov in presadkov po sočasni presaditvi trebušne slinavke in ledvice v % (za obdobje 2009–2022, n = 25 (bolniki) in n = 20 (presadki))

Enoletno preživetje		Triletno preživetje		Petletno preživetje	
Bolniki					
96 %		96 %		96 %	
Presadki					
T. slinavka	Ledvica	T. slinavka	Ledvica	T. slinavka	Ledvica
76 %	92 %	76 %	92 %	76 %	92 %

Vir: Poročilo – izr. prof. dr. Damjan Kovač, dr. med. (KO za nefrologijo, UKC Ljubljana)



Program za presaditev pljuč

V obdobju 1997–2022 je bilo pri slovenskih bolnikih opravljenih 126 presaditev pljuč. 72 presaditev je bilo opravljenih v bolnišnici AKH na Dunaju (do leta 2019), od tega ena ponovna presaditev ter ena kombinirana presaditev srca in pljuč. V letu 2022 so v UKC Ljubljana opravili 10 presaditev pljuč, pri devetih bolnikih je bila opravljena presaditev obeh pljučnih kril. V enem primeru je šlo za ponovno presaditev.

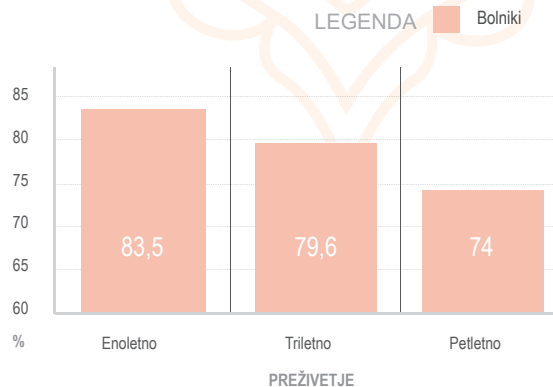
Najpogostejša vzroka za presaditev pljuč v UKC Ljubljana sta bili kronična obstruktivna pljučna bolezen (38 %) in pljučna fibroza (21 %). Presaditve pri bolnikih s cistično fibrozo so postale redke zaradi uvedbe zelo učinkovitih zdravil za to bolezen. Zadnja presaditev s to indikacijo je bila v letu 2020. V letu 2022 presaditev zaradi posledic bolezni covid-19 ni bilo.

Mediana čakalna doba za presaditev pljuč v obdobju 2018–2022 je bila 91 dni, za nujne presaditve pa sedem dni.

Vir: Poročilo o delovanju programa za presaditev pljuč (doc. dr. Matevž Harlander, dr. med., predstojnik KO za pljučne bolezni in alergologijo, UKC Ljubljana)

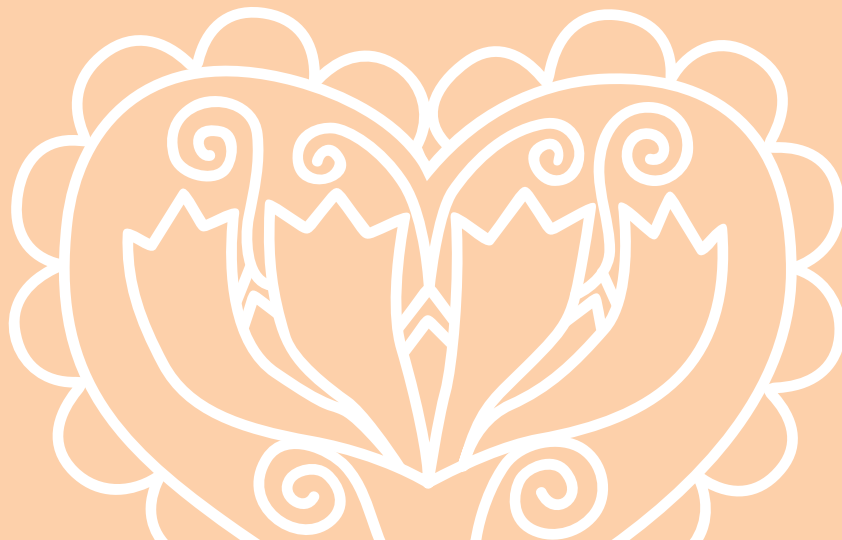
Preživetje bolnikov po presaditvi pljuč v % (za obdobje 1997–2022)*

Enoletno preživetje	Triletno preživetje	Petletno preživetje
Bolniki		
83,5 %	79,6 %	74 %



*Desetletno preživetje slovenskih bolnikov po presaditvi pljuč je 60,0 %. Pri bolnikih, ki so jim pljuča presadili v UKC Ljubljana, je bilo v obdobju 2018–2022 enoletno preživetje 83,9-odstotno in triletno preživetje 80,1-odstotno.

Tkiva in celice



PRESADITVE KRVOTVORNIH MATIČNIH CELIC

Presaditev krvotvornih matičnih celic (KMC) je najbolj razširjena oblika celičnega zdravljenja. Na ta način se zdravi več kot 70 malignih in nemalignih bolezni, pri določenih hematoloških obolenjih pa je presaditev glavna terapevtska in tudi edina možnost za ozdravitev. Sodoben način zdravljenja s KMC v optimalnih pogojih dosega več kot 90-odstotno uspešnost (<http://www.ztm.si>). Za takšen uspeh pa je potrebno dobro imunsko (HLA) ujemanje darovalca in prejemnika. Zato je Slovenija vključena v svetovni register *Bone Marrow Donors Worldwide* (BMWR), v katerem so vpisani prostovoljni darovalci, ki so tipizirani. V primeru skladnosti se izvedejo postopki za odvzem in presaditev.

V nekaterih primerih je za zdravljenje možno uporabiti lastne KMC, kar imenujemo **avtologno** darovanje. Pogostejše gre za darovanje na osnovi ustrezne tkivne skladnosti med sorodniki. Po slovenski zakonodaji se lahko izvedeta tudi odvzem in presaditev med nesorodnimi osebami, pri čemer se upošteva princip anonimnosti. Darovanje drugega darovalca imenujemo tudi **alogensko**, pri čemer iščemo darovalca najprej v Sloveniji in nato v tujini.

Register Slovenija Donor

V Sloveniji je bil leta 1991 ustanovljen register nesorodnih darovalcev Slovenija Donor, ki je naslednje leto postal polnopravni član svetovnega registra Bone Marrow Donors Worldwide (BMDW).

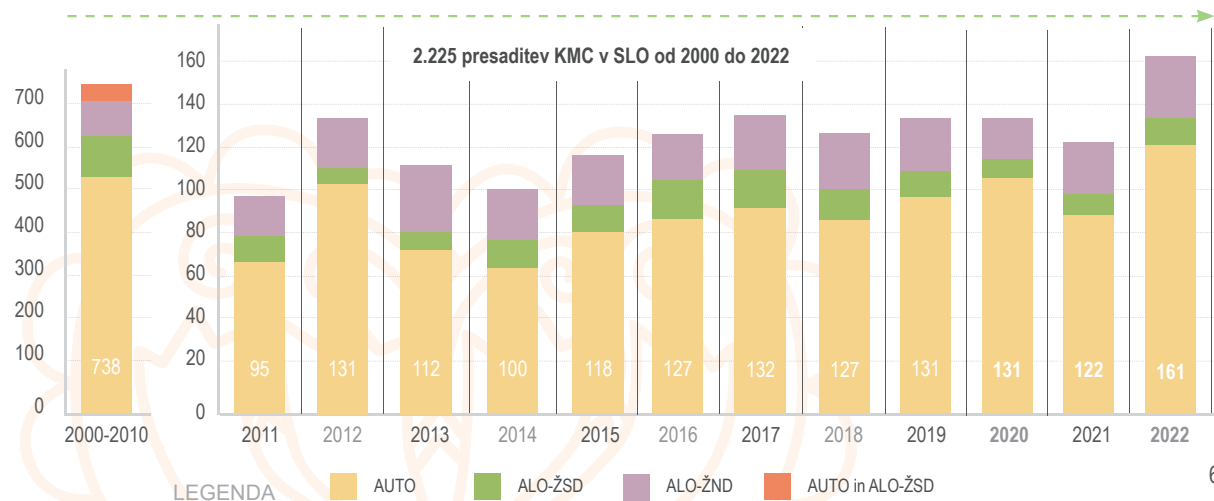
Na dan 31. 12. 2022 je bilo v register Slovenija Donor vpisanih 25.190 oseb, od tega jih je bilo v svetovni register BMDW vpisanih 21.727.

Presaditve KMC v Sloveniji od leta 2000 do 2022

Tip presaditve	2000-2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
AUTO	531	68	101	74	63	84	86	92	88	89	104	89	121
ALO-ŽSD	102	9	8	7	11	10	15	12	13	11	10	10	13
ALO-ŽND	84	18	22	31	26	24	26	28	26	31	17	23	27
AUTO in ALO-ŽSD	21												
SKUPAJ	738	95	131	112	100	118	127	132	127	131	131	122	161

AUTO – avtologne presaditve, **ALO** – alogenske presaditve, **ŽSD** – živi sorodni darovalec, **ŽND** – živi nesorodni darovalec

Vir: Letno poročilo ZTM – Slovenija donor, podatke mesečno zbiramo za arhiv Slovenija-transplanta.

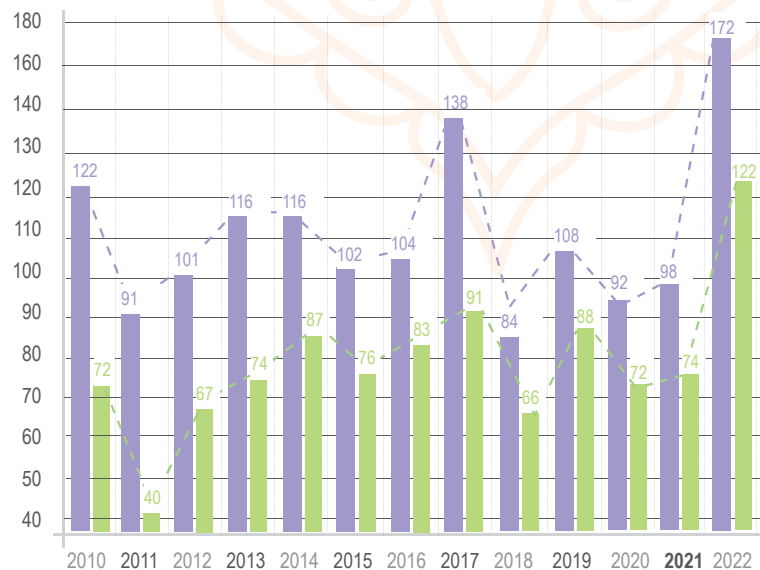


PROGRAM PRIDOBIVANJA IN PRESADITVE ROŽENIC

Zdravljenje s presaditvijo roženic je ena najpogostejših in tudi najuspešnejših presaditev tkiv pri nas in v svetu. Takšen način zdravljenja pogosto predstavlja edini način, s katerim izboljšamo vid zaradi predhodnega obolenja oz. poškodb.

Pridobljene in presajene roženice od leta 2010 do 2022

Leto	Št. pridobljenih roženic	*Št. presajenih roženic
2010	122	72
2011	91	40
2012	101	67
2013	116	74
2014	116	87
2015	102	76
2016	104	83
2017	138	91
2018	84	66
2019	108	88
2020	92	72
2021	98	74
2022	172	122

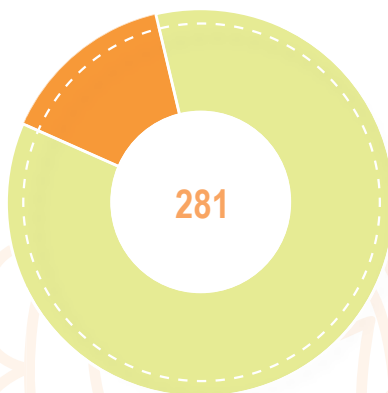


* Podatki o presaditvah na Očesni kliniki UKC Ljubljana v obdobju 2010–2017, od leta 2018 dalje pa so vključene tudi presaditve na Oddelku za očne bolezni UKC Maribor

■ SKUPAJ 1.444 pridobljenih od 2010-2022
■ SKUPAJ 1.012 presajenih od 2010-2022

V Sloveniji pridobivamo roženice od umrlih darovalcev po dokončni zaustavitvi srca ali po dokazani možganski smrti. Odvzem roženic je možen po predhodni privolitvi umrle osebe v času življenja oz. ob nenasprotovanju bližnjih. Poleg pridobljenega soglasja je potrebna še natančna ocena primernosti roženice za presaditev, ki jo sprejme prejemnikov zdravnik. Presaditev roženice izvajajo v dveh transplantacijskih centrih: na Očesni kliniki v UKC Ljubljana ter na Oddelku za očne bolezni v UKC Maribor.

Čakalni seznam bolnikov za presaditev roženice na Očesni kliniki v UKC Ljubljana (na dan 16. 1. 2023) in UKC Maribor (na dan 11. 1. 2023)



Vir: UKC Ljubljana, Očesna klinika;
UKC Maribor, Oddelek za očne bolezni

Diagnoza	Število bolnikov
Keratokonius	41
Ostale diagnoze	240
SKUPAJ	281

281 bolnikov (275 UKC Ljubljana, 6 UKC Maribor) (100%)

LEGENDA

- Keratokonus: **41 bolnikov (15 %)**
- Ostale diagnoze: **240 bolnikov (85 %)**
(poškodbe, degeneracija, retransplantacija, makule roženice, distrofija Fuchs, endotelna distrofija, cornea guttata, afaka in psevdofaka, keratopatija bullosa, vnetja, drugo)

OSTALA TKIVA IN CELICE

Sledljivost in transparentnost v programih presaditve oz. uporabe tkiv in celic za namen zdravljenja

Ustanove za tkiva in celice morajo imeti veljavno dovoljenje za delo, ki ga izda Javna agencija za zdravila in medicinske pripomočke (JAZMP). Zavod Slovenija-transplant je odgovoren za sledljivost in transparentnost, kar zagotavljamo z zbiranjem in pregledovanjem sprotnih poročil ustanov za tkiva in celice, ki nam na osnovi zakonskih zahtev in sklenjenih pogodb poročajo o darovanju, pridobivanju, procesiranju, shranjevanju, dodeljevanju, uporabi in uničenju tkiv in celic.

Po zaključku leta na osnovi letnih poročil posameznih ustanov za tkiva in celice v Slovenija-transplantu pripravimo zbirno letno poročilo. Prav tako smo pooblaščen za pripravo letnega zaključnega poročila o hudih neželenih dogodkih in reakcijah ter ga posredujemo JAZMP, ki nato poroča Evropski komisiji.

Ustanove za tkiva in celice ter zagotavljanje kakovosti in varnosti

V Sloveniji je na nacionalni ravni v dejavnost preskrbe in uporabe tkiv in celic za zdravljenje vključenih 27 ustanov. Od tega je v program vključenih 15 bolnišnic in znotraj teh 40 kliničnih oddelkov. Glede na status je 18 ustanov za tkiva in celice javnih in devet zasebnih. Zasebne ustanove imajo dovoljenje izključno za avtologno pridobivanje tkiv in celic.

Slovenija-transplant in JAZMP zagotavljata transparentno delovanje sistema ter sproti ugotavljata in obravnavata vse odklone, ki lahko vplivajo na kakovost in varnost tkiv in celic darovalcev, prejemnikov in osebja, ki je vključeno v posamezne procese.

Za pridobitev dovoljenja mora vsaka ustanova izpolnjevati stroge strokovne in zakonske pogoje. Vse ustanove imajo vzpostavljen sistem kakovosti, v katerem so opisani vsi postopki za zagotavljanje pogojev za kakovost tkiv in celic ter varnost prejemnikov. Vse ustanove redno nadzoruje JAZMP, v preverjanje podatkov pa je vključen tudi Slovenija-transplant.

Oploditev z biomedicinsko pomočjo in reproduktivne celice

V Sloveniji so registrirani 4 centri za dejavnost oploditve z biomedicinsko pomočjo parom, ki ne morejo zanositi po naravni poti: OBMP Ljubljana, OBMP Maribor, OBMP Postojna in ZC Dravlje. Obseg dejavnosti je razviden iz tabele o pridobljenih in uporabljenih tkivih in celicah. Omenjeno področje spada po številu izvedenih postopkov med najobsežnejše.

Pridobivanje in shranjevanje popkovnične krvi in popkovnice

V Sloveniji pridobivamo in shranjujemo za namen lastne uporabe tudi krvotvorne matične celice iz popkovnične krvi in popkovnice ter drugih tkiv (npr. mlečni zobje). Dovoljenje za delo imajo ena javna tkivna banka – Zavod za transfuzijsko medicino (ZTM) in tri zasebne ustanove (Izvirna celica, Biobanka in FH-S). Javna banka popkovnične krvi pri ZTM je s 1. 12. 2014 prenehala sprejemati vzorce popkovnične krvi, saj je bilo zbranih in shranjenih zadostno število vzorcev, da lahko zadostijo potrebam v Sloveniji. Ne glede na to potekajo pogovori o nadaljevanju zbiranja in shranjevanja ne le za lastno uporabo, pač pa tudi za vsakogar, ki bi takšne celice potreboval. Gre za alogensko darovanje, ki bi bilo omogočeno z javnim financiranjem.

Vir: <http://www.ztm.si/register-darovalcev/javna-banka-popkovnicne-krvi/>

Število pridobljenih tkiv in celic v obdobju od 2009 do 2022

Leto	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Koža*	28	45	22	36	85	89	52	57	32	22	24	10	46	63
Kosti*	38	123	108	67	93	82	147	74	80	78	71	59	256	87
Mehkokostni presadki*	22	39	/	3	11	3	9	/	12	/	/	/	0	0
Hrustanec*	37	21	4	12	11	11	12	/	/	/	/	/	0	0
Reproduktivne celice (št. celic)	15.854	43.472	8.640	27.479	41.929	37.542	39.769	26.191	36.338	13.778	26.813	28.209	24.736	25.721

*Enota: število odvzetih vzorcev

Število uporabljenih tkiv in celic v obdobju od 2009 do 2022

Leto	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Koža*	36	10	14	34	67	23	31	28	/	20	3	/	47	43
Kosti*	23	47	57	97	59	62	92	82	72	71	81	101	123	90
Mehkokostni presadki*	12	/	2	2	3	4	3	5	2	3	5	4	2	6
Hrustanec*	15	/	3	7	4	9	5	1	/	/	1	/	3	0
Reproduktivne celice*	1.450	2.018	29.651	23.330	23.506	27.271	31.127	26.620	31.817	12.110	5.109	14.255	27.547	28.194

*Enota: število uporabljenih vzorcev

Vir: arhiv Slovenija-transplanta

Število enot pridobljene popkovnične krvi v obdobju od 2015 do 2022

Ustanova / Leto	2015	2016	2017	2018	2019	2020	2021	2022
Izvirna celica	76	144	107	82	81	81	78	73
Biobanka	175	178	266	110	224	197	241	170
FH-S	8	45	101	169	192	206	245	293
Neocelica	238	0*	0*	0*	0*	0*	0*	0*

*Ustanova prenehala z delovanjem

Število enot pridobljene popkovnice v obdobju od 2015 do 2022

Ustanova / Leto	2015	2016	2017	2018	2019	2020	2021	2022
Izvirna celica	60	116	96	52	73	75	77	71
Biobanka	32	150	222	96	212	184	236	170
FH-S	8	42	96	114	196	213	247	301
Neocelica	198	0*	0*	0*	0*	0*	0*	0*

*Ustanova prenehala z delovanjem

Vir: arhiv Slovenija-transplanta

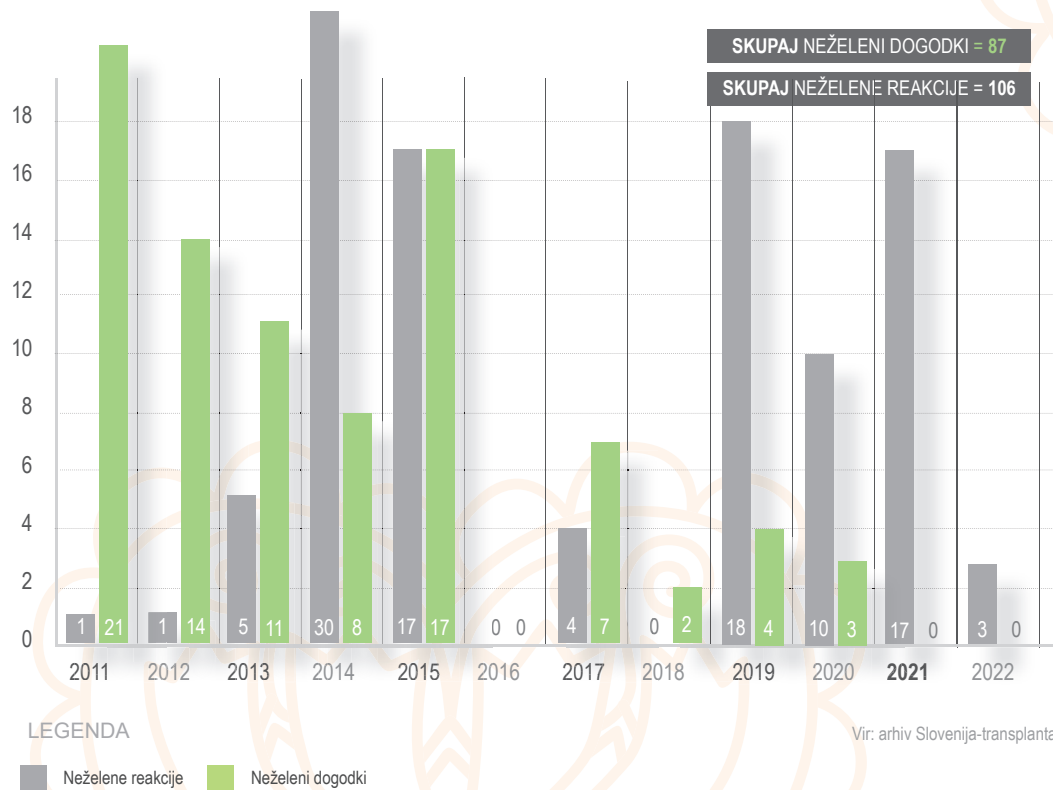
NEŽELENI DOGODKI IN REAKCIJE

Slovenija-transplant je odgovoren za obravnavo neželenih dogodkov in reakcij ter odklonov na področju preskrbe s tkivi in celicami zaradi presaditve, t. i. histovigilanco. Namen zbiranja poročil o neželenih dogodkih in reakcijah ali tudi postavitve suma nanje je zagotavljanje kakovosti izvajanja postopkov in s tem preprečevanja tveganja za zdravje pacientov, osebja, škode ali celo izgube tkiv in celic.

Poročanje poteka na predpisanih obrazcih, za posamezen primer je treba oddati začetno in končno poročilo. Oba obrazca sta prilogi Pravilnika o histovigilanci. Poročanje poteka v več fazah: zaznava odklona, natančna ocena in opis primera, sprejem ustreznih ukrepov za preprečitev škode na tkivih in celicah ter ljudeh, poročanje pristojnim inštitucijam in obveščanje vseh ustanov za tkiva in celice, ki so dobile tkiva in celice, pri katerih je prišlo do odklona.

Vsi podatki, ki se zbirajo v sistemu histovigilance, so anonimizirani, da se zagotovi zasebnost in na drugi strani upošteva t. i. kultura neobtoževanja, kar pomeni, da se spodbuja poročanje, iščejo se rešitve oz. izboljšave in ni obsojanja izvajalcev na osebni ravni.

Število neželenih dogodkov in reakcij od 2011 do 2022



IZOBRAŽEVANJE IN OBVEŠČANJE STROKOVNE JAVNOSTI

Izobraževanje in obveščanje zdravstvenih delavcev in delavk sta ključnega pomena za uspešen razvoj in delovanje donorske ter transplantacijske dejavnosti. V letu 2022 smo močno okrepili izobraževalne aktivnosti. Vse izobraževalne programe smo posodobili v skladu z novostmi in sodobnimi strokovnimi smernicami ter vključili oziroma okrepili predstavitev aktualnih tem, kot so darovanje organov po cirkulatorni smrti (DCD), možnosti aktivne detekcije možnih umrlih darovalcev, nove smernice pri zdravljenju in oskrbi kritično bolnih v enotah intenzivne medicine, možnosti za darovanje organov in tkiv po smrti (program ICOD) ter osnovna izhodišča preprečevanja trgovine z organi. Za obveščanje strokovne javnosti o novostih smo uvedli e-novičnik.

Izobraževanje »Osnove donorskega programa«

Osnovno izobraževanje izvajamo v vseh bolnišnicah, ki so vključene v donorsko dejavnost. Udeležencem predstavimo donorsko dejavnost, delovanje programa in rezultate. Izobraževanje smo v letu 2022 izvedli v šestih izbranih donorskih bolnišnicah: UKC Ljubljana (46 udeležencev), UKC Maribor (64 udeležencev), SB Celje (45 udeležencev), SB Murska Sobota (33 udeležencev), SB Izola (27 udeležencev) in SB Nova Gorica (24 udeležencev). Izobraževanj se je skupaj udeležilo 239 udeležencev, zdravnikov in medicinskih sester oz. zdravstvenikov, ki so vsa predavanja ocenili z visokimi ocenami.

Razširjeno izobraževanje in usposabljanje za zdravstvene delavce

Intenzivni tečaj s področja pridobivanja in presaditve organov (Intermediate Training Course in Transplant Coordination) po programu TPM izvajamo v sodelovanju s špansko organizacijo DTI. Cilj tečaja je razvoj donorskega programa ter poglobljeno izobraževanje zdravnikov in ostalih sodelavcev v enotah za intenzivno medicino iz vseh donorskih bolnišnic. V letu 2022 smo tečaj izjemoma izvedli preko spleta z uporabo platforme za avdio in video komuniciranje. Udeležilo se ga je 30 udeležencev iz vseh slovenskih donorskih bolnišnic in mladi transplantacijski koordinatorji iz Slovenija-transplanta. Predavanja in delavnice so izvedli predavatelji iz Slovenija-transplanta in UKC Ljubljana, španski

strokovnjaki pa so predstavili svetovne trende in novosti, s poudarkom na darovanju po cirkulatorni smrti (DCD), novih smernicah pri zdravljenju in oskrbi kritično bolnih v enotah intenzivne medicine ter možnostih za darovanje organov in tkiv po smrti (program ICOD).

Delavnica »Sporočanje slabe novice in pogovor o darovanju«

Glavni cilji delavnice so učenje komunikacijskih veščin in načinov sporočanja slabe novice, ustrezen odziv na žalovanje svojcev, izpeljava pogovora o darovanju organov in razumevanje vrednosti pomena odločitve za darovanje organov za žalujoče svojce. Delavnica je namenjena transplantacijskim koordinatorjem, zdravnikom in medicinskim sestram oz. zdravstvenikom, zaposlenim na oddelkih intenzivne medicine. V letu 2022 smo izvedli eno osnovno delavnico za šest novih sodelavcev v ekipi centralnih transplantacijskih koordinatorjev.

Delavnica o histovigilanci

Delavnica je namenjena odgovornim osebam ustanov za tkiva in celice (UTC), bolnišničnim in centralnim transplantacijskim koordinatorjem (BTK in CTK) ter vsem ostalim strokovnim delavcem, ki sodelujejo pri postopkih odvzema, presaditve in obdelave tkiv in celic za namen zdravljenja s presaditvijo. V letu 2022 smo izvedli dve delavnici, ki se ju je skupaj udeležilo 46 udeležencev.

Predstavili smo histovigilančni sistem v EU, sistem nacionalnega poročanja, uporabo orodja za vrednotenje histovigilančnih primerov in histovigilančne primere iz prakse. Sledila sta praktično delo v skupinah in diskusija.

Novičnik Slovenija-transplanta

Strokovne novice iz Slovenija-transplanta so namenjene strokovni javnosti in informiranju o novostih, dejavnostih zavoda, medijskih objavah, statističnih podatkih in izobraževanjih. Cilj komunikacijskega orodja je doseči dobro informirano, povezano in razvojno usmerjeno strokovno javnost. V letu 2022 smo izdali štiri številke novičnika, ki smo ga razposlali na več kot 500 e-naslovov.

MEDNARODNI PROJEKTI



BRAVEST – **B**uilding **R**esilience **A**gainst crisis: a systematic and global approach to ad**V**ance organ **S**afety and supply in **T**ransplantation

Trajanje: 1. 9. 2022–28. 2. 2025

Sofinanciranje: Program EU4HEALTH

Slovenija-transplant je partner v prestižnem projektu, ki ga vodi Evropsko združenje za transplantacijo organov (ESOT), zanj dr. Luciano Potena, dr. med. Člani vrhunske mednarodne interdisciplinarne ekipe bomo analizirali dejavnike, ki so vplivali na uspešnost donorske in transplantacijske dejavnosti pred izbruhom epidemije, med izbruhom in med epidemijo SARS-CoV-2. Na osnovi različnih izkušenj bomo identificirali dobre prakse (klinične primere, organizacijsko podporo, sistemske rešitve) ter razvili algoritem in paradigmo za boljšo odpornost nacionalnih sistemov ter njihovo neprekinjeno, uspešno in varno delovanje v času nepredvidljivih dogodkov in raznih kriz (npr. epidemija, ekološke nesreče, potres, vojna ...). V okviru projekta bo nastala zasnova za zbiranje podatkov v zvezi s transplantacijsko dejavnostjo in pridobivanjem organov v registre na evropski ravni.

Slovenija-transplant je član konzorcija in vodi 5. delovni sklop (trajnost rezultatov) ter je vključen v vse delovne sklope in aktivnosti projekta. V slovenski ekipi sodelujeta prim. Danica Avsec, dr. med., in dr. Jana Šimenc. Zagonsko projektno srečanje je potekalo v Bologni 19. in 20. oktobra 2022. Več informacij o projektu: <https://www.bravest-project.eu/>.



What is the BRAVEST project?

We are a group of 9 organisations and institutions in the EU, working to improve organ donation and transplantation for patients and providers.

We are researching the organisation and management of donation and transplantation during the COVID-19 pandemic, to learn from challenges and identify best solutions.



Learn more: bravest-project.eu



#WeAreBRAVEST

Where is BRAVEST based?



Eurotransplant



ORSZÁGOS
VERELLÁTÓ
SZOLGÁLAT

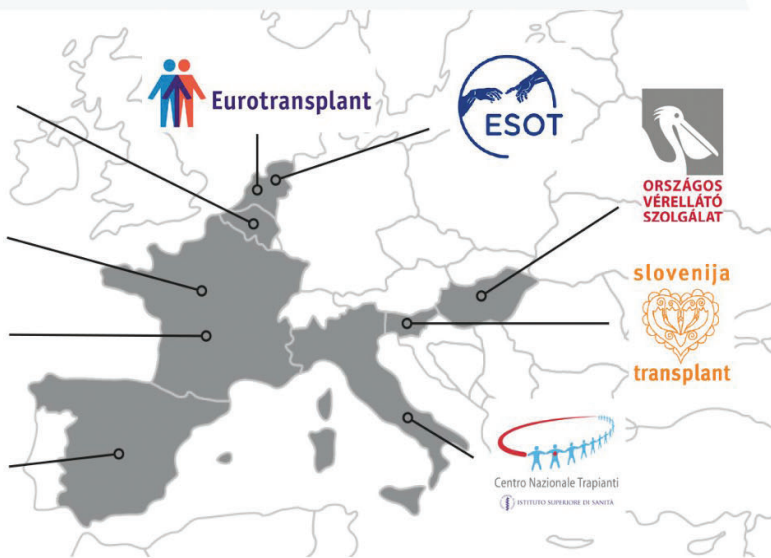
slovenija



transplant



Centro Nazionale Trapianti
ISTITUTO SUPERIORE DI SANITÀ



#WeAreBRAVEST

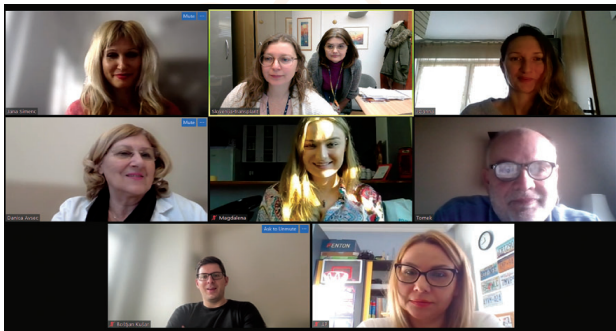
YOU HAVE MORE THAN ONE LIFE – ADULT EDUCATION FOR PROMOTION OF TRANSPLANTATION

Trajanje: 1. 11. 2022–31. 7. 2023

Financiranje: EU program ERASMUS+

Projekt »Vsi imamo več kot eno življenje« izvajamo v sodelovanju s poljsko partnersko organizacijo Fundacja Pasjonaci Życia, ki je tudi nosilka projekta. Projekt naslavlja področje ozaveščanja javnosti o pomenu darovanja organov. S partnerji bomo delili znanje, izdelali nabor dobrih praks s področja komuniciranja v t. i. brošuri znanja, na tridnevni delavnici izobrazili 15 oseb po presaditvi o javnem nastopanju ter posneli 15 kratkih videov z osebnimi izkušnjami in nagovori »ambasadorjev« k darovanju. Delavnice in partnerski obiski bodo potekali na Poljskem in v Sloveniji. Novo gradivo bo pomemben doprinos k sodobnemu komuniciranju Slovenija-transplanta.

Zagonski sestanek je potekal 14. decembra 2022 (prek spleta). Več informacij o projektu je na voljo na Facebook profilu Slovenija-transplanta.



VIRI

- Spletna stran Zavoda Slovenija-transplant: <http://www.slovenija-transplant.si/>.
- Spletna stran Zavoda RS za transfuzijsko medicino: <http://www.ztm.si/register-darovalcev/slovenija-donor/>.
- Zakon o pridobivanju in presaditvi delov človeškega telesa zaradi zdravljenja (ZPPDČT), Ur. l. RS, št. 56/2015.
- Council of Europe Convention against Trafficking in Human Organs (CM, 9. 7. 2014).
- Spletna stran Eurotransplanta: <http://www.eurotransplant.org/cms/>.
- Spletna stran European Directorate for the Quality of Medicines and Healthcare EDQM: <https://www.edqm.eu/>.
- Guide to the Quality and Safety of Organs for Transplantation. European Committee (Partial Agreement) on Organ Transplantation (CD-P-TO), European Directorate for the Quality of Medicines & Health Care, Strasbourg; 7th ed. 2018.
- Guide to the Quality and Safety of Tissues and Cells for human application. European Committee (Partial Agreement) on Organ Transplantation (CD-P-TO), European Directorate for the Quality of Medicines & Health Care, Strasbourg; 4th ed. 2019.
- The Madrid Resolution on Organ Donation and Transplantation: https://www.edqm.eu/sites/default/files/article_the_madrid_resolution_on_organ_donation_and_transplantation_transplantation_journal_june_2011.pdf
- Razvoj Transplantacijske medicine v Sloveniji: programi, smernice in perspektive. Urednici Danica Avsec in Zvonka Zupanič Slavec; ilustracije Radko Oketič. Ljubljana: Zavod RS za presaditve organov in tkiv Slovenija-transplant; Celje: Celjska Mohorjeva družba: Društvo Mohorjeva družba, 2016.
- Donorski program: Postopki za izvajanje v donorskih bolnišnicah. Avtorji: Andrej Gadžijev, Danica Avsec. Ljubljana: Zavod RS za presaditve organov in tkiv Slovenija-transplant. Ljubljana, 2018.
- Newsletter Transplant, International Figures on Donation and Transplantation 2021, EDQM. <https://freepub.edqm.eu/publications/PUBSD-87/detail>
- Kandus A, Bren F. B. (2016). Transplantacija ledvic v Sloveniji od 1970 do 2013. V Avsec D in Zupanič Slavec Z (ur.), Razvoj transplantacijske medicine v Sloveniji: programi, smernice in perspektive (str. 138). Ljubljana: Zavod RS za presaditve organov in tkiv Slovenija-transplant; Celje: Celjska Mohorjeva družba: Društvo Mohorjeva družba.
- Gadžijev A, Avsec D: Darovanje in presaditve organov in tkiv uspešno tudi v letu 2021. Isis, julij 2022: 43–46. Dostopno na <https://online.pubhtml5.com/agma/qmc/#p=43>.
- Šimenc J, Avsec D, Gadžijev A: Rezultati 1. nagradnega natečaja Slovenija-transplanta za najboljše raziskovalno delo s področja donorske medicine. Isis, maj 2022: 74–75. Dostopno na: <https://online.pubhtml5.com/agma/xtio/#p=74>.

VIRI PODATKOV

Donorski program:

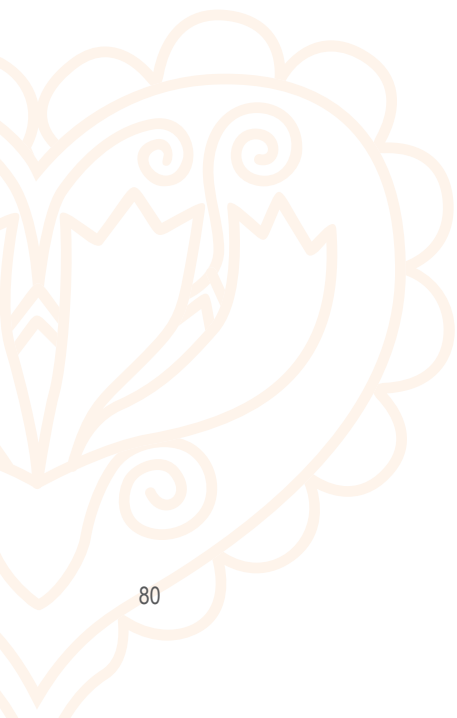
- Arhiv Slovenija-transplanta
- Eurotransplant Statistics Library: <https://statistics.eurotransplant.org/>
- Preliminary numbers 2022, IRODaT (International Registry in Organ Donation and Transplantation), www.irodatt.org.

Prejemniški program:

- Letna poročila prejemniških kliničnih oddelkov UKC Ljubljana

Donor and transplantation activity in Slovenia in 2022





Introductory words

Our annual publication “Give Life a Chance” presents statistical data and key highlights of donor and transplantation activity in 2022. The year 2022 was very successful for donor activity. It brought a number of surpluses, in which we invested a lot of effort on both the organisational and professional levels. We carried out several tasks that we were unable to complete during the pandemic and established new standards which we will seek to follow or even build on in the coming years.

In the donor programme, we significantly exceeded our plans, especially in the identification of eligible deceased donors. After several years, we once again exceeded the limit of 23 utilised donors per million inhabitants and ranked 3rd among Eurotransplant member states. Transplant coordinators conducted almost twice as many consent interviews with relatives of potential deceased donors as in 2021 and successfully coordinated 56 multi-organ removals from brain-dead donors in the national network of donor hospitals, with an average donation of 3.5 organs, making us one of the best performing countries in the world.

The UMC Maribor passed important professional milestones since in 2022 we started to actively implement the programme according to the new guidelines for the treatment and care of critically ill patients in intensive care units and the option for organ and tissue donation after death (ICOD programme). Part of this programme was also launched for the first time at the UMC Ljubljana.

Yet, behind all these successes are various people who, with their dedication, exceptional energy, enthusiasm, altruism and self-sacrifice, continue to make it possible for all Slovenian citizens to receive high-quality and safe organ and tissue transplantation treatment at such a crucial time in Slovenian healthcare as we are witnessing today. Thank you all sincerely.



Andrej Gadžijev, MD,

Director and physician responsible for donor activities

The Slovenija-transplant institute

Since 2002 the Institute of the Republic of Slovenia for the Transplantation of Organs and Tissues, Slovenija-transplant, has been the central national expert institution for connecting, co-ordinating, promoting and supervising donor and transplant activity in Slovenia. Established in 1998, Slovenija-transplant is the primary co-ordination office of the national transplantation network. This network consists of 11 donor hospitals across Slovenia, the Transplantation Centre at the Ljubljana University Medical Centre, and the Tissue Typing Centre within the Blood Transfusion Centre of Slovenia. It operates the donor and recipient programme, while also ensuring that medical treatment with a transplant is possible for all who need it. The national network operates continuously and its expert teams are in a state of readiness 24 hours a day, every day of the year.

Slovenia has been a member of Eurotransplant, a non-profit organisation for organ and tissue exchange, since 2000. After meeting the demanding entry criteria, it was the first country in the region to join the group of five successful countries in the area of transplant treatment, i.e., Germany, Austria, Belgium, Luxembourg and the Netherlands. In 2002, Slovenija-transplant signed a co-operation agreement with Eurotransplant. Today, Eurotransplant, with its registered seat in Leiden in the Netherlands, brings together 8 countries and over 137 million inhabitants. This membership is important for our patients because, upon joining Eurotransplant, the chances of their survival and transplant treatment outcomes have improved considerably, especially for life-threatening conditions like acute heart and liver failure and other special cases (e.g., children, hypersensitive patients). Thanks to our co-operation, the waiting lists have been shortened significantly, the national transplant programmes are fully operating and we have also introduced combined transplants. First and foremost, we have been able to ensure greater donor–recipient tissue compatibility. Tissue incompatibility can make finding an appropriate organ for certain patients impossible in Slovenia. In 2020, we celebrated the impressive 20th anniversary of our successful co-operation with Eurotransplant.

Since being established, the Institute has been constantly developing in line with international guidelines. We strive to create an educated and motivated professional public and, by way of multipronged communication, consistently increase the public's trust in transplantation medicine. Our membership in international professional committees and participation in European projects has given us an equal footing in the international arena, including as active co-creators of strategies, development and expert training in international donor and transplant activities. We continue to set an internationally recognised example of how a national donor programme should be organised and managed.

In its management and leadership of activities for procuring and using parts of the human body for medical treatment purposes, Slovenija-transplant consistently complies with the legislation, European directives and adopted international conventions. We also ensure that national legislation and expert protocols are promptly updated. Any changes we introduce are based on expert medical decisions and proposals, critical social considerations as well as the principles of medical ethics and deontology.

The key guidelines of our Institute's operations include: self-sufficiency | patient equality and safety | optimal effectiveness | quality | traceability | professionalism | non-commercial orientation | transparency | voluntary donation | prevention of abuse.

Slovenija-transplant is led by Andrej Gadžijev, MD, a specialist traumatologist and physician responsible for donation activity. Danica Avsec, MD, deputy director, is also appointed as a physician responsible for donation activity. In 2022, the Institute employed 9 full-time staff and was working with 86 people under contract in the donor programme. The Institute operates under the auspices of the Ministry of Health of the Republic of Slovenia.

www.slovenija-transplant.si



@SloTransplant

Outstanding achievements and highlights of 2022

- In the donor programme, we considerably outperformed our plan, especially in the number of eligible donors. With 23.24 utilised donors per million inhabitants, we rank 3rd among Eurotransplant member countries.
- We achieved outstanding results in the number of procured hearts and lungs, where we exceeded the plan by over 60%, and in the number of procured corneas – 51 more than the 120 planned.
- We created a Slovenian national tissue and cell code for the National Tissue and Cell Information System, representing unique and pioneering work on the EU level. A precise code ensures better traceability and transparency for institutions and donors, and for all tissues and cells.
- We improved the logistical processes and systemised protocols to ensure the exchange of organs and tissues with nearby airports in Munich, Graz and Vienna.
- We signed a cooperation agreement between the National Transplant Centre in Italy, Eurotransplant and Slovenija-transplant to perform liver transplants in young children. We found an innovative way to settle outstanding organ debts between Eurotransplant members and non-members through the European organ exchange platform FOEDUS.
- Central transplant coordinators successfully coordinated 56 deceased multi-organ removal procedures in the national network of donor hospitals.
- Transplant coordinators conducted 92 consent interviews with relatives, almost double the number in 2021. The percentage of consents to donate was slightly lower at 68%.

- Ratification of the International Convention against Trafficking in Human Organs became effective on 1 September 2022. With the amendments to the Criminal Code, ratification has become an important milestone for Slovenia as the Convention clearly defines the criminal offences related to abuses in transplantation medicine.
- We strengthened our educational activities for the professional public. Among others, we held six seminars on the basics of the donor programme, an intensive course on organ procurement, two workshops on histovigilance and one workshop on breaking bad news and talking about organ donation.
- We launched an e-newsletter to regularly inform and raise awareness among the professional public. Four issues of Expert News from Slovenija-transplant were sent to more than 500 e-mails.
- In cooperation with the patients' society, the Slovenian Transplant Society, we organised a media-hyped and well-received public exhibition "My Scar, My Life". It was opened in the lobby of the UMC Ljubljana on the occasion of the European Day of Donation. The exhibition of post-transplant artistic photos is travelling around Slovenia and is an excellent communication tool for encouraging people to donate their organs.
- The National Register of Designated Persons recorded the highest number of donation declarations on the annual level: 2,010 people formally expressed their decision to donate.
- We had above-average success in international tenders for projects. We won three new projects in cooperation with international partners, enabling further development in the areas of donor and transplant programme resilience (BRAVEST), innovative approaches to communication and public awareness (You have more than one life) and educating the professional public about new developments in donation (Speed-In).
- We successfully ran a competition for the best research work in donor medicine. First prize was awarded to Veronika Prtenjak for her thesis entitled Legal dilemmas of organ donation.

THE “MY SCAR, MY LIFE” EXHIBITION

The centrepiece of the European Day of Donation on 8 October 2022 was the opening of the aesthetically and conceptually outstanding exhibition “My Scar, My Life” in the lobby of the UMC Ljubljana. The exhibition of artistic photos, with accompanying statements and expert explanations, offers first-hand insights into organ and tissue donation and transplantation, where there are many good and successful stories of solidarity, medical excellence and healing victories. It is a collaboration between patient societies (Slovenian Transplant Society, Ditra Sport Society) and Slovenija-transplant. At Slovenija-transplant, the exhibition was co-created by Danica Avsec, Andrej Gadžijev, Jana Šimenc and Barbara Uštar. The photographer Miran Juršič took the superb artistic photographs.

The exhibition’s aim is to be able to talk about organ donation in different everyday spaces, breaking unnecessary taboos, and promoting donation. This also explains why organ transplant recipients, with a great deal of courage and positive energy, bared their scars, bodies and minds to express their gratitude and deliver the key message: become a donor and make life possible. As Anja Garbajs, one of the exhibition’s creators and a member of the Transplant patients' society, stated: “The thought that you can donate an organ to someone is bigger than life”.

The exhibition, which glows with life and gratitude, changes the way viewers look at life, at beginnings and endings. The photographs are complemented by panels with expert explanations, prompts to talk about donation, and clarifications of common misconceptions. In 2022, the exhibition will be held in the lobby of the UMC Ljubljana, in the lobby of the Division of Surgery at the UMC Maribor, and in the Murska Sobota Regional and Study Library. It was received extremely positively by the general and professional public and the media everywhere.

The exhibition also acts as an incentive for roundtables, talks and press conferences, which broadens the understanding of organ donation. Since the exhibition has been travelling around the country, we have seen a significant rise in the number of declarations in the national register. We also presented it in Poland where it has already been recognised as a model of outstanding, innovative and successful organ donation communication practice. In 2023, we are planning further visits to locations across Slovenia (including the Sevnica Community Healthcare Centre).

JANEZ, 56

Ko po čudežnem klicu stopiš na transplantacijsko pot, ki ti je podarjena, darovana v najtežjih, večinoma tragičnih trenutkih nesebično od neznanih oseb, čutiš, da ti je z medicinskim znanjem, s treznimi glavami in mirnimi rokami izvedena operacija rešila življenje. Ob podpori svojih najbližjih in vseh tistih, ki jim je mar zame, lahko rečem samo HVALA.

Vsaka iskrica, delec, atom čudežnega mozaika, ki je potreben za tovrsten uspeh, nosi na naših brazgotinah življenjski pomen in ponosni smo na to.

Sem prejemnik dveh organov, ki mi pomenita ŽIVLJENJE, s ponosom stopam po sveži poti novih priložnosti in svojo lepo zgodbo z nasmehom na obrazu širim tudi med vas.

JANEZ, 56

When, after a miraculous phone call, you are offered a transplant from a complete stranger, which is available to you under the most tragic circumstances, you realize that operation, performed by expert medical professionals has saved your life. With the support of my loved ones and all those who care about me, I can only say THANKYOU.

Every spark, particle, atom of the miraculous mosaic that is necessary for this kind of success carries a vital meaning on our skin and we are proud of it. I am the recipient of two organs that mean LIFE to me. I walk with pride towards new opportunities and spread my beautiful story with a smile on my face.

O DAROVANJU ORGANOV & STATISTIKA

Zdravljenje s presaditvijo organov in tkiv je med najnaprednejšimi metodami zdravljenja. Za bolnike s kronično ali akutno končno odpovedjo organa je to edina možnost za preživetje, le pri odpovedi delovanja ledvic obstaja še nadomestno zdravljenje (dializa).

Potrebe po zdravljenju s presaditvijo naraščajo, organov za vse bolne pa ni dovolj, zato več tisoč ljudi čaka in upa na presaditev organa.

ABOUT ORGAN DONATION & STATISTICS

Organ and tissue transplantation is one of the most advanced medical treatment methods. For patients with chronic or acute organ failure, transplantation is the only option for survival. Only in the case of kidney failure is there an alternative treatment (dialysis).

Demand for organ transplantation is increasing all over the world, but there are not enough organs available to meet the need. This shortage of organs is now the limiting factor in treating many patients with chronic organ failure and has led to high numbers of patients on waiting lists.

EVROPA
EUROPE

36.000

INCIDENTS & PRE-ELIGIBLE ORGAN PATIENTS RECEIVED A TRANSPLANT

41.000

BOLNIKI ČAKA NA ZDRAVLJENJE. NEW PATIENTS ARE REGISTERED ON WAITING LISTS

VSAKI UR JE
THAT IS NEARLY

5 PACIENTOV PRIŠTEČEN NA ČAKALNI SEZNAM. NEW PATIENTS ADDED TO A TRANSPLANT WAITING LIST EVERY HOUR

SLOVENIJA
SLOVENIA

OKOLI 120 ORGANOV PRESADIMO NA LETO. ABOUT 120 ORGANS ARE TRANSPLANTED EVERY YEAR

OKOLI 200 LJUDI ČAKA NA ZDRAVLJENJE. PATIENTS ARE REGISTERED ON WAITING LISTS

Umrli darovalci
Deceased donors

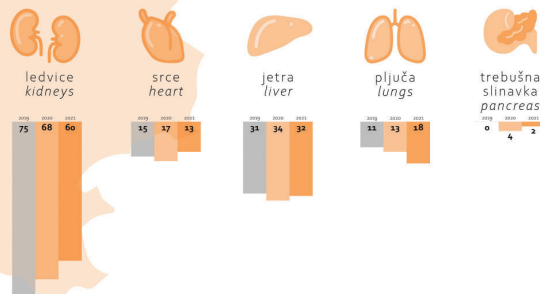


Umrli darovalci v letu 2021 po starostnih skupinah
Deceased donors in 2021 by age group



POURNOVA
STAROSTI LJUDI, KI
DAROVATELJE JE
OKOLI 51 LET.
THE AVERAGE AGE OF
DECEASED DONORS
IS 51 YEARS

Darovalci so v letu 2021 podarili 125 organov
Donors donated 125 organs for treatment in 2021



Zaradi kroničnega pomanjkanja ustreznih organov, vsi bolniki žal ne dočakajo zdravljenja. Z darovanjem lahko tragične usode ljudi spremenimo.

Due to chronic shortage of suitable organs and tissues for transplantation, not all patients receive treatment. In 2021, an average of 20 patients died every day while waiting for an organ transplant in Europe.



DECEASED
DONORS 56

Key statistics for 2022

DECEASED
DONORS IN 2022
BY AGE GROUPS

0<18 YEARS

3

18-59 YEARS

29

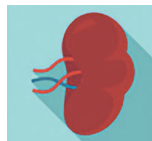
+60 YEARS

24

Average age was 54 years.

DECEASED DONORS
DONATED 172 ORGANS

2022



KIDNEY

82



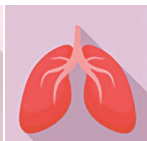
HEART

20



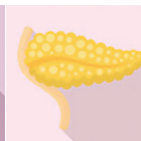
LIVER

45



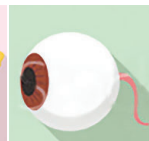
LUNG

20



PANCREAS

1



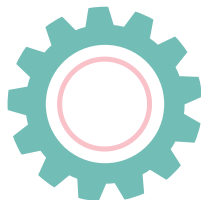
CORNEA

172

NATIONAL REGISTER OF DESIGNATED PERSONS ABOUT POST-MORTEM ORGAN AND TISSUE DONATION

Slovenia ranks among most successful countries in terms of the consent rate for donation.

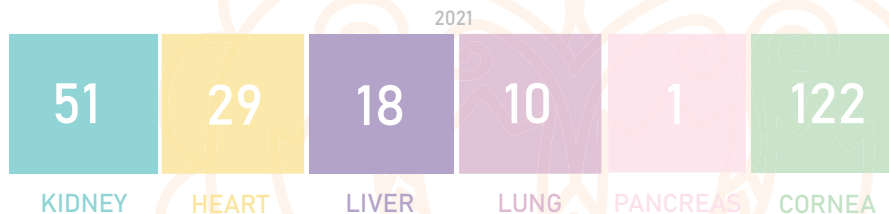
2.010
(54 against)
2022



Registered
13.579 people
of which 13.496 FOR,
and 83 against.

IN THE CENTRE FOR TRANSPLANTATION
ACTIVITY IN UKC LJUBLJANA
109 ORGANS WERE TRANSPLANTED

161 patients are
on the waiting list
for transplantation
(status on 31.12.2022)



CONSENT FOR
ORGAN AND TISSUE
DONATION

CONSENT RATE **68 %**

Transplant coordinators
performed 92 family interviews
with relatives
of the deceased.

AVERAGE WAITING
TIME (IN DAYS)

250

HEART

370

KIDNEY

91

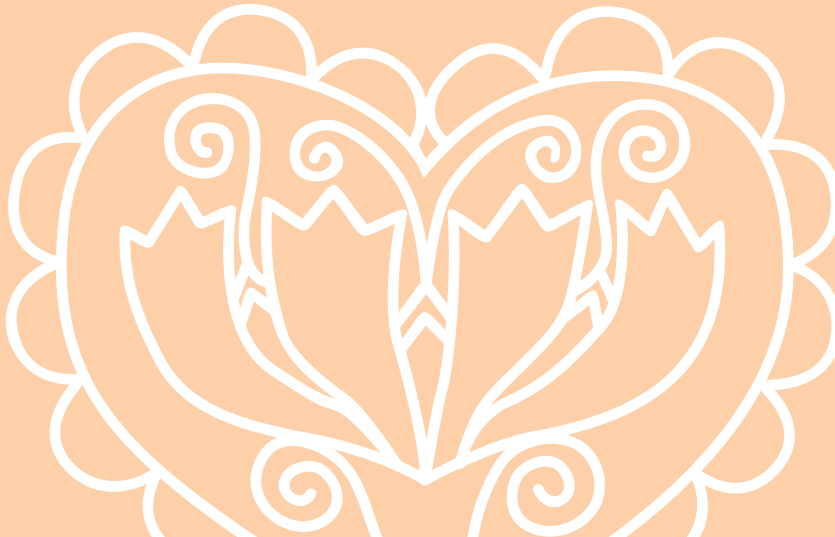
LUNG

67

LIVER



Solid organs



NATIONAL WAITING LIST FOR ORGAN TRANSPLANTATION

The waiting list is a list of patients needing a part of a human body for medical transplantation purposes. The indications for transplantation are specific to each organ/tissue/cell. All patients in the Republic of Slovenia have the same possibility of being included on the list of recipients and have equal access to this treatment. At the end of 2022, 161 patients were waiting for an organ transplant. The number was again lower compared to the previous year, especially for the kidney and liver waiting lists. The average waiting period for all organs is relatively short compared to other countries. On average, Slovenian patients wait for a heart, liver or kidney transplant for less than 1 year. For more information on average waiting periods for specific organs, please see the chapter The Results in Transplanted Patients.

In 2022, 114 Slovenian patients were included on the waiting list for the first time: 38 for a kidney (one in combination with a liver, three in combination with a heart and one in combination with a pancreas), 40 for a heart (three in combination with a kidney), 13 for a lung, 22 for a liver (one in combination with a kidney) and one for a pancreas transplant (in combination with a kidney).

Status of the national waiting list on 31.12.2022 (all patients)

Kidney	Heart***	Lung	Liver*	Pancreas**
82	60	5	16	3
TOTAL				161 patients

* 2 in combination with a kidney ** 2 in combination with a kidney ***1 in combination with a kidney

Source: <http://statistics.eurotransplant.org/>

Status of the national waiting list in the 2011-2022 period (as at 31.12., all patients)

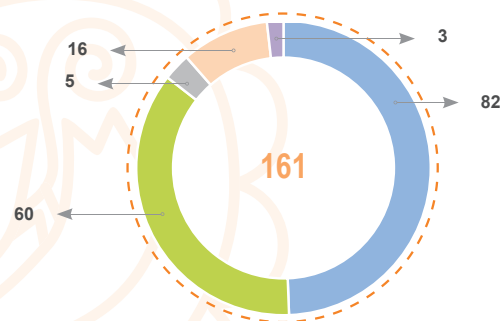
Year	Kidney	Heart	Lung*	Liver	Pancreas	TOTAL
2011	120	46		17		183
2012	113	38		18	2	169
2013	114	39		19	1	171
2014	136	31		21	11	188
2015	110	52		29	11	190
2016	95	58		28	7	181
2017	112	56		35	8	203
2018	135	65		35	6	234
2019	138	55		35	5	227
2020	115	53	5	32	4	204
2021	97	57	3	21	4	177
2022	82	60	5	16	3	161

* Before 2020, Slovenian patients, waiting for a lung transplant, were included on the Austrian waiting list

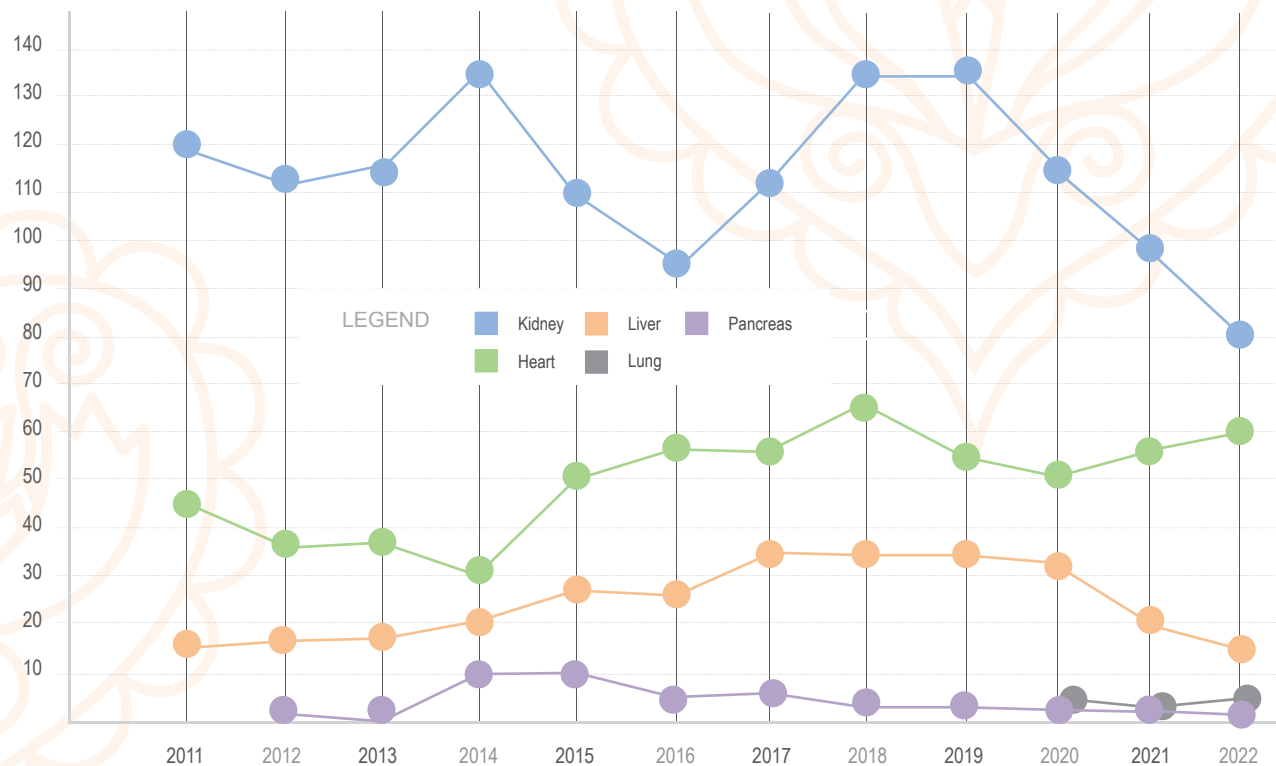
Source: <http://statistics.eurotransplant.org/>

A share of patients on the national waiting list by organ in 2022

LEGEND



Trends in patient numbers on the waiting list, by organ and total for the 2011-2022 period



Waiting list mortality for the 2011-2022 period

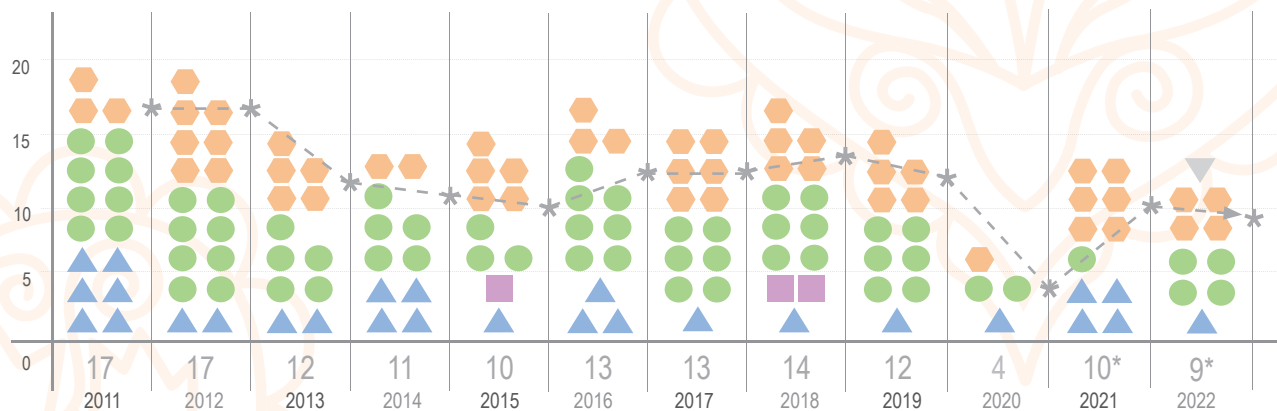
The following data show the number of patients who were included on the waiting list for an organ transplant and died during the waiting period. The cause of death was not always related to the failure of the organ for which they were waiting to be transplanted.

Year	Kidney	Kidney and pancreas	Heart	Lung	Liver	TOTAL
2011	6		8		3	17
2012	2		8		7	17
2013	2		5		5	12
2014	4		5		2	11
2015	1	1	3		5	10
2016	3		7		3	13
2017	1		6		6	13
2018	1	2	6		5	14
2019	1		6		5	12
2020	1		2		1	4
2021	4		1		6	10*
2022	1		4	1	4	9**

*/**One deceased patient was waiting for a combined kidney and liver transplant

Source: <http://statistics.eurotransplant.org/>

Trends in waiting list mortality for the 2011-2022 period



*One of the deceased patients waited for a combined kidney and liver transplant

Source: <http://statistics.eurotransplant.org/>

LEGEND

▲ Kidney

● Liver

■ Kidney and pancreas

● Heart

▼ Lung

✱ Trends

NUMBER OF DECEASED DONORS

In 2022, Slovenian donor hospitals acquired 56 actual deceased donors who were medically suitable and for whom consent had been obtained from their relatives. Data at the beginning show the number of actual deceased donors in Slovenia compared to selected countries around the world. Below are details on the number of utilised deceased donors, which means that at least one organ was transplanted from each donor. Compared to other Eurotransplant member countries, in 2022 Slovenia was ranked third in terms of the number of utilised deceased donors per million people, with this result being significantly higher than the Eurotransplant average.

Number of actual deceased donors (DD) per million people (PMP) in Slovenia in 2022 and a comparison with other countries*

Country	No.of DD/PMP 2022
1. Spain	46.03
2. USA	44.5
3. Portugal	30.8
4. Belgium	29.4
5. Czech Republic	28.34
6. Slovenia	26.54
7. Belarus	26.04
8. Italy	25.5
9. Austria	25.17

Country	No.of DD/PMP 2022
10. Croatia	24.4
11. Uruguay	22.7
12. United Kingdom	21.08
13. Canada	20.95
14. Switzerland	18.8
15. Estonia	18.77
16. Lithuania	17.96
17. Australia	17.48
18. Ireland	16.78

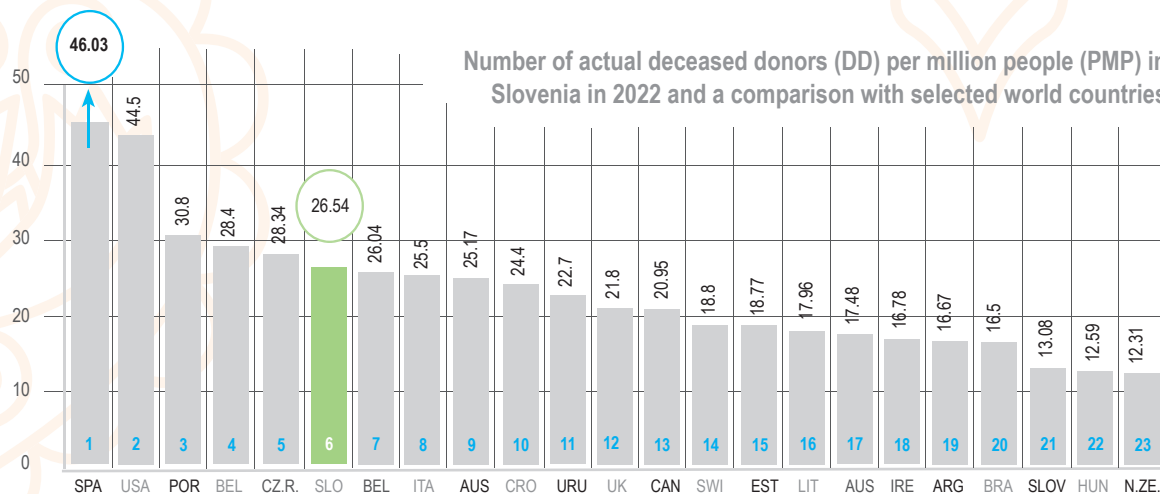
* we included all countries that submitted data for 2022 to Irodat by July 2023

SOLID ORGANS

Country	No. of DD/PMP 2022
19. Argentina	16.67
20. Brazil	16.5
21. Slovakia	13.08
22. Hungary	12.59
23. New Zealand	12.31
24. Iran	12.2
25. Poland	11.76

Country	No. of DD/PMP 2022
26. Israel	10.42
27. Germany	10.34
28. Kuwait	8
29. S. Korea	7.88
30. Greece	6.6
21. N. Macedonia	6
32. UAE	5.5

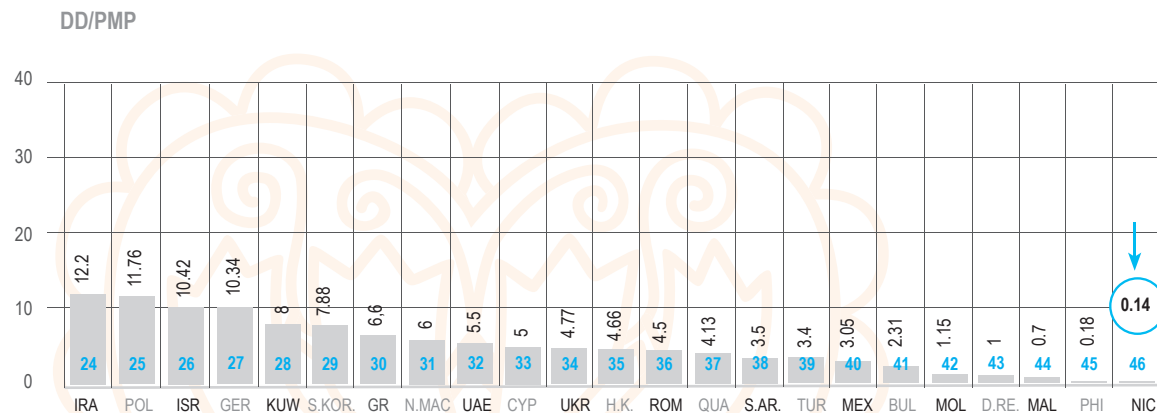
DD/PMP



Country	No. of DD/PMP 2022
33. Cyprus	5
34. Ukraine	44.77
35. Hong Kong	4.66
36. Romania	4.5
37. Qatar	4.13
38. Saudi Arabia	3.5
39. Turkey	3.4

Country	No. of DD/PMP 2022
40. Mexico	3.05
41. Bulgaria	2.31
42. Moldova	1.15
43. Dominican Republic	1
44. Malaysia	0.7
45. Philippines	0.18
46. Nicaragua	0.14

Source: Newsletter Transplant, International Figures on Donation and Transplantation 2022. Preliminary report, July 2023.



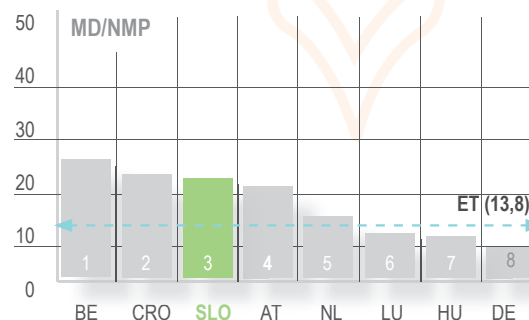
Number of utilised deceased donors (DD) per million people (PMP) in Slovenia in 2022 and a comparison with all Eurotransplant countries

Country	Slovenia	Eurotransplant
Number of DD	49	1938
DD/PMP	23.3	13.8

Source: <http://statistics.eurotransplant.org/>

Number of utilised deceased donors per million people (DD/PMP) and a comparison with other Eurotransplant countries in 2022

ET Country	Number of DD/PMP in 2022
1. Belgium (BE)	26.6
2. Croatia (CRO)	23.5
3. Slovenia (SLO)	23.3
4. Austria (AT)	22.1
5. Netherlands (NL)	16.2
6. Luxembourg (LU)	12.4
7. Hungary (HU)	12.3
8. Germany (DE)	10.1



Vir: <http://statistics.eurotransplant.org/>

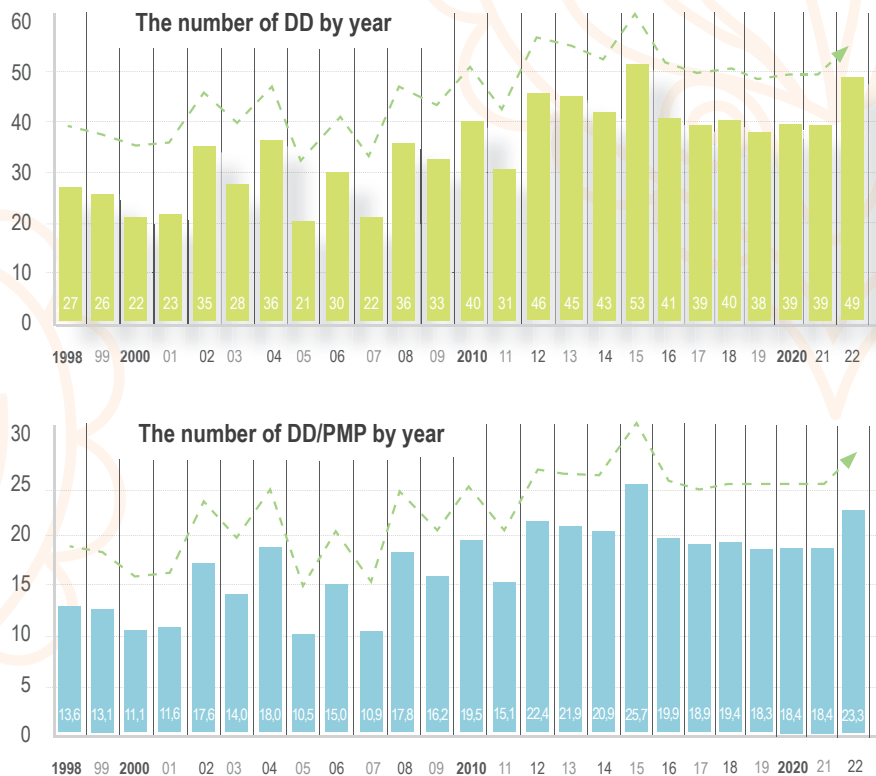
Number of utilised deceased donors (DD) and number of utilised deceased donors per million people (DD/PMP) in Slovenia in the 1998-2022 period

Year	Number DD	Number DD/PMP
1998	27	13.6
1999	26	13.1
2000	22	11.1
2001	23	11.6
2002	35	17.6
2003	28	14
2004	36	18
2005	21	10.5
2006	30	15
2007	22	10.9
2008	36	17.8
2009	33	16.2
2010	40	19.5

Year	Number DD	Number DD/PMP
2011	31	15.1
2012	46	22.4
2013	45	21.9
2014	43	20.9
2015	53	25.7
2016	41	19.9
2017	39	18.9
2018	40	19.4
2019	38	18.3
2020	39	18.5
2021	39	18.5
2022	49	23.3
TOTAL	882	17.3

Source: <http://statistics.eurotransplant.org/>

Number of utilised deceased donors (DD) and number of utilised deceased donors per million people (DD/PMP) in Slovenia in the 1998-2022 period



The critical Pathway for Organ Donation

POSSIBLE DECEASED ORGAN DONOR		
A patient with a devastating brain injury or lesion OR a patient with circulatory failure AND apparently medically suitable for organ donation		
Donation after Circulatory Death (DCD)	Treating physician to Identify/refer a potential donor	Donation after BrainDeath (DBD)
POTENTIAL DCD DONOR	Reasons why a potential donor does not become a utilized donor	POTENTIAL DBD DONOR
a. A person whose circulatory and respiratory functions have ceased and resuscitative measures are not to be attempted or continued. OR b. A person in whom the cessation of circulatory and respiratory functions is anticipated to occur within a time frame that will enable organ recovery.	SYSTEM - Failure to identify/refer a potential or eligible donor - Brain death diagnosis not confirmed (e.g. does not fulfil criteria) or completed (e.g. lack of tehcnical resources or clinician to make diagnosis or perform confirmatory tests) - Circulatory death not declared within the appropriate time frame - Logistical problems (e.g. no recovery team) - Lack of appropriate recipient (e.g. child, blood type, serology positive) DONOR/ORGAN - Medical unsuitability (e.g. serology positive, neoplasia) - Haemodynamic instability/unanticipated cardiac arrest - Anatomical, histological and/or functional abnormalities of organs - Organs damaged during recovery - Inadequate perfusion of organs or thrombosis PERMISSION - Expressed intent of deceased not to be donor - Relative's refusal of permission for organ donation - Refusal by coroner or other judical officer to allow donation for forensic reasons	A person whose clinical condition is suspected to fulfill brain death criteria.
ELIGIBLE DCD DONOR		ELIGIBLE DBD DONOR
A medically suitable person who has been declared dead based on the irreversible absence of circulatory and respiratory functions as stipulated by the law of the relevant jurisdiction within a time frame that enables organ recovery.		A medically suitable person who has been declared dead based on neurologic criteria as stipulated by the law of the relevant jurisdiction.
ACTUAL DCD DONOR		ACTUAL DBD DONOR
A consented eligible donor: a. In whom an operative incision was made with the intent of organ recovery for the purpose of transplantation. OR b. From whom at least one organ was recovered for the purpose of transplantation.		A consented eligible donor: a. In whom an operative incision was made with the intent of organ recovery for the prupose of transplantation. OR b. From whom at least one organ was recovered for the purpose of transplantation.
UTILIZED DCD DONOR		UTILIZED DBD DONOR
An actual donor from whom at least one organ was transplanted.		An actual donor from whom at least one organ was transplanted.
The »dead donor rule« must be respected. That is, patients may only become donors after death, and the recovery of organs must not cause a donor's death.		

Source: The Madrid Resolution on Organ Donation and Transplantation

REGISTER FOR DONATION DECLARATIONS

Every Slovenian citizen has the right and possibility during their lifetime to decide to donate their organs and tissues. This decision is formally confirmed when it is entered in the national register of designated persons, established back in 2004. The donor statement may be signed at many authorised donor registration points around Slovenia (a detailed list is published at www.slovenija-transplant.si) or electronically using a digital signature on the eAdministration ("eUprava") portal (<https://e-uprava.gov.si/>). Since June 2017, a declaration against making an organ donation is also possible.

In 2022, we collected the highest number of declarations so far in a single year. A total of 2,010 declarations was collected (1,956 FOR and 54 AGAINST). As at 31 December 2022, 13,579 declarations were entered on the register (13,496 FOR and 83 AGAINST). Since 2018, when the making of an electronic declaration was enabled, 4,183 individuals have used this option. In 2022, 80% of declarations were submitted electronically.

Number of declarations in the register, by year, in the 2004–2022 period

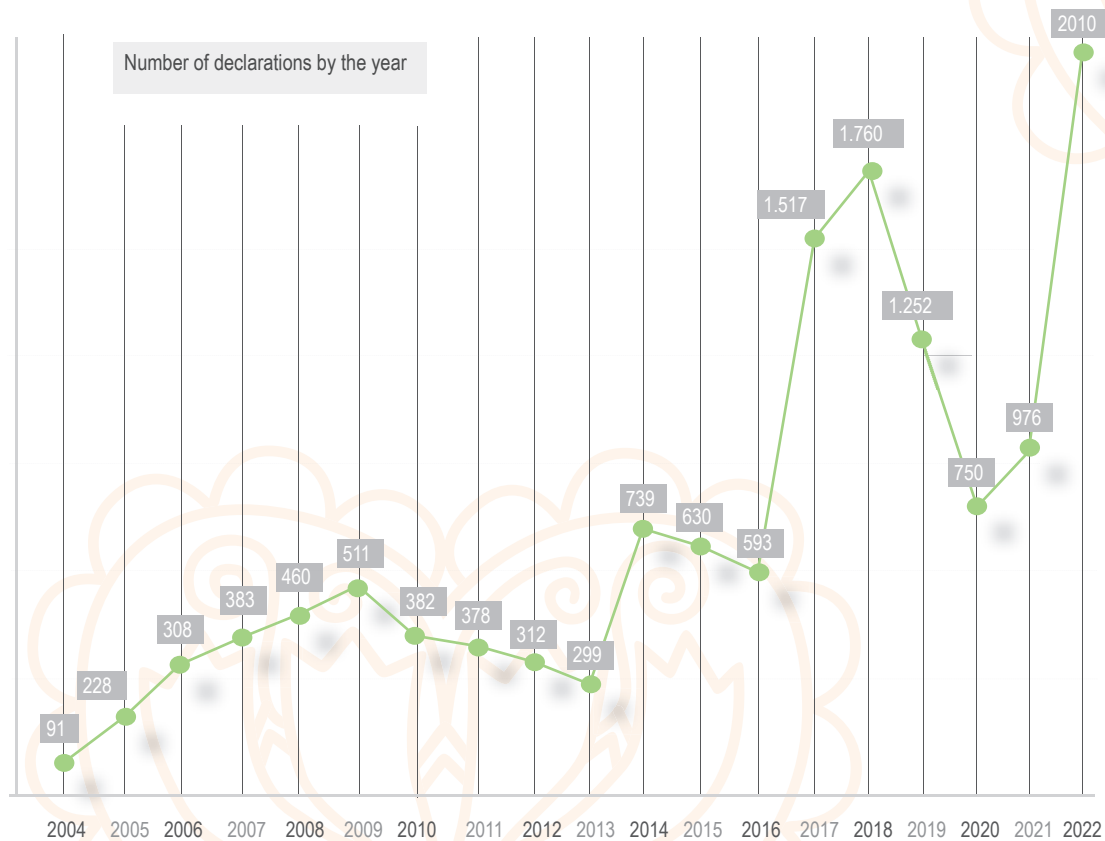
Source: archive of Slovenija-transplant

Year	No. of declarations
2004	91
2005	228
2006	308
2007	383
2008	460
2009	511
2010	382

Year	No. of declarations
2011	378
2012	312
2013	299
2014	739
2015	630
2016	593
2017	1517

Year	No. of declarations
2018	1760
2019	1252
2020	750
2021	976
2022	2010
TOTAL	13579

Number of declarations in the register, by year, in the 2004-2022 period



PERCENTAGE OF CONSENT FOR DONATION

A conversation about donation with the close relatives of a potential deceased donor is conducted in every case when the donation of organs for transplantation is feasible. It is only after the death has been confirmed and the time of death registered that the transplantation co-ordinator checks the register to see whether the deceased was a designated after-death donor. Despite knowing about the designation, a conversation with the deceased person's close relatives about donation is carried out. During this conversation, transplant coordinators try to determine what the deceased person's position was regarding after-death organ donation.

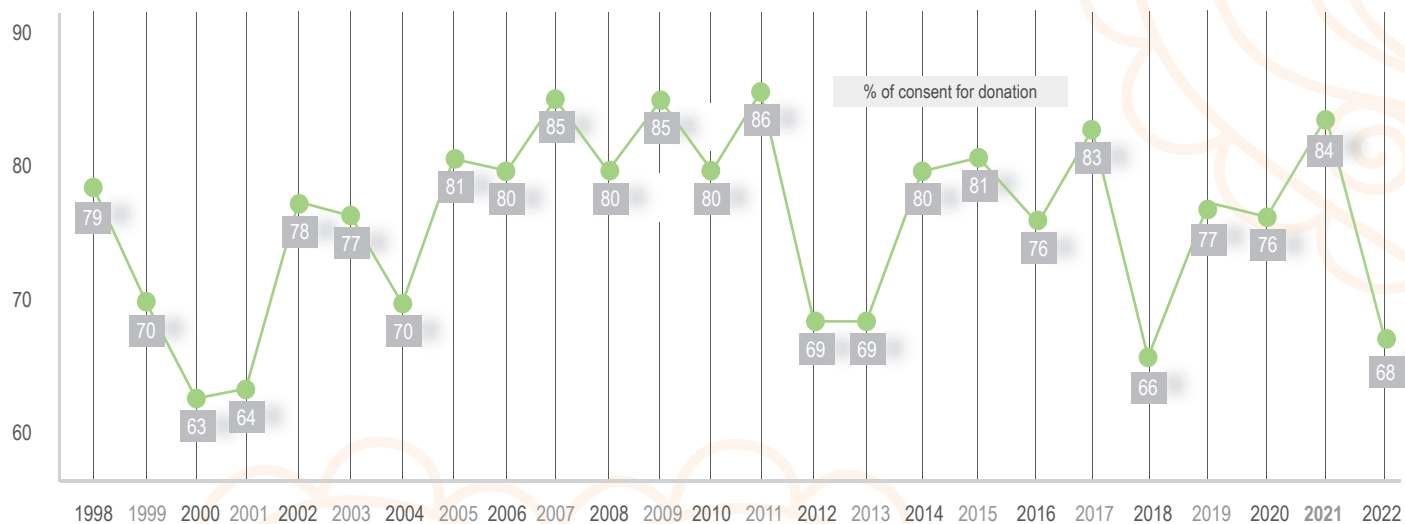
If their intention is unknown, the close relatives make the decision. In this case, the conversation is significantly more difficult for medical staff and especially for their family. All procedures are carried out with a high level of sensitivity, understanding of the extremely difficult emotional circumstances and in line with the legislative provisions and the medical doctrine. In 2022, consent for donation was given by 68% of relatives.

Slovenija-transplant offers the deceased donor's relatives an opportunity to be given grief counselling by professionally trained and experienced experts.

Percentage of consent for donation in the 1998-2022 period

Year	%	Year	%	Year	%	Year	%	Year	%
1998	79	2003	77	2008	80	2013	69	2018	66
1999	70	2004	70	2009	85	2014	80	2019	77
2000	63	2005	81	2010	80	2015	81	2020	76
2001	64	2006	80	2011	86	2016	76	2021	84
2002	78	2007	85	2012	69	2017	83	2022	68

Percentage of consent for donation in the 1998–2022 period



OPERATIONS OF THE DONOR CENTRES

Eleven donor hospitals or centres are active in the Slovenian donor programme: the Ljubljana UMC and Maribor UMC and the general hospitals in Celje, Murska Sobota, Nova Gorica, Izola, Ptuj, Novo mesto, Slovenj Gradec, Jesenice and Brežice.

The following activities are performed in a donor centre:

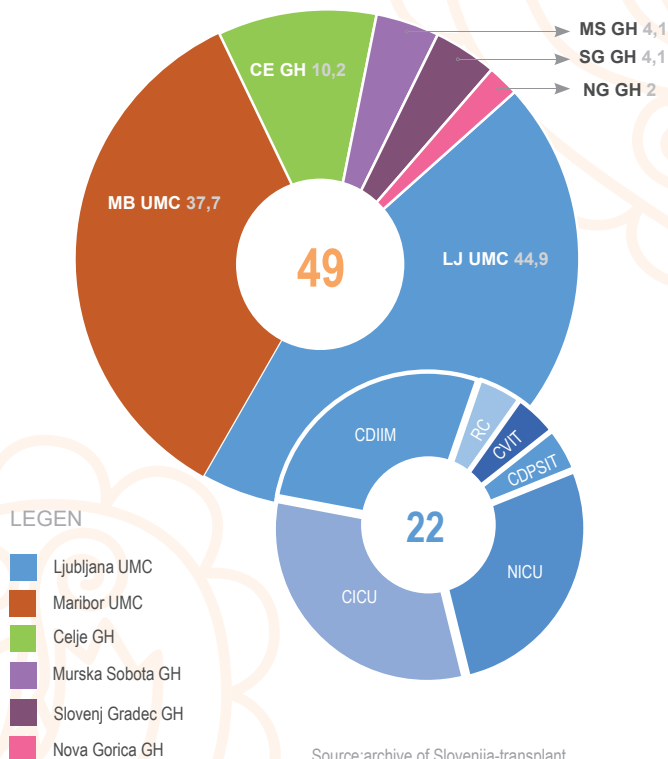
- identification of potential deceased donors;
- diagnostics of brain death;
- evaluation of the suitability of organs and tissues for removal and transplantation;
- communication with the relatives of the deceased about the possibility of organ donation;
- maintenance of the functioning of deceased donors' organs – in intensive care and during organ removal; and
- participation in organ- and tissue-removal procedures performed by Slovenian and foreign teams of surgeons.

The highest number of donors is provided by the Ljubljana UMC, where the largest intensive care units are in place. In 2022, 22 utilised deceased donors were procured there. Good results were also achieved by the UMC Maribor which in 2022 procured 17 utilised deceased donors, and by Celje GH with 5 utilised donors. Murska Sobota GH and Slovenj Gradec GH each procured 2 utilised deceased donors and Nova Gorica GH 1 utilised deceased donor.

Number and share of utilised deceased donors by individual donor centres (DC) in 2022

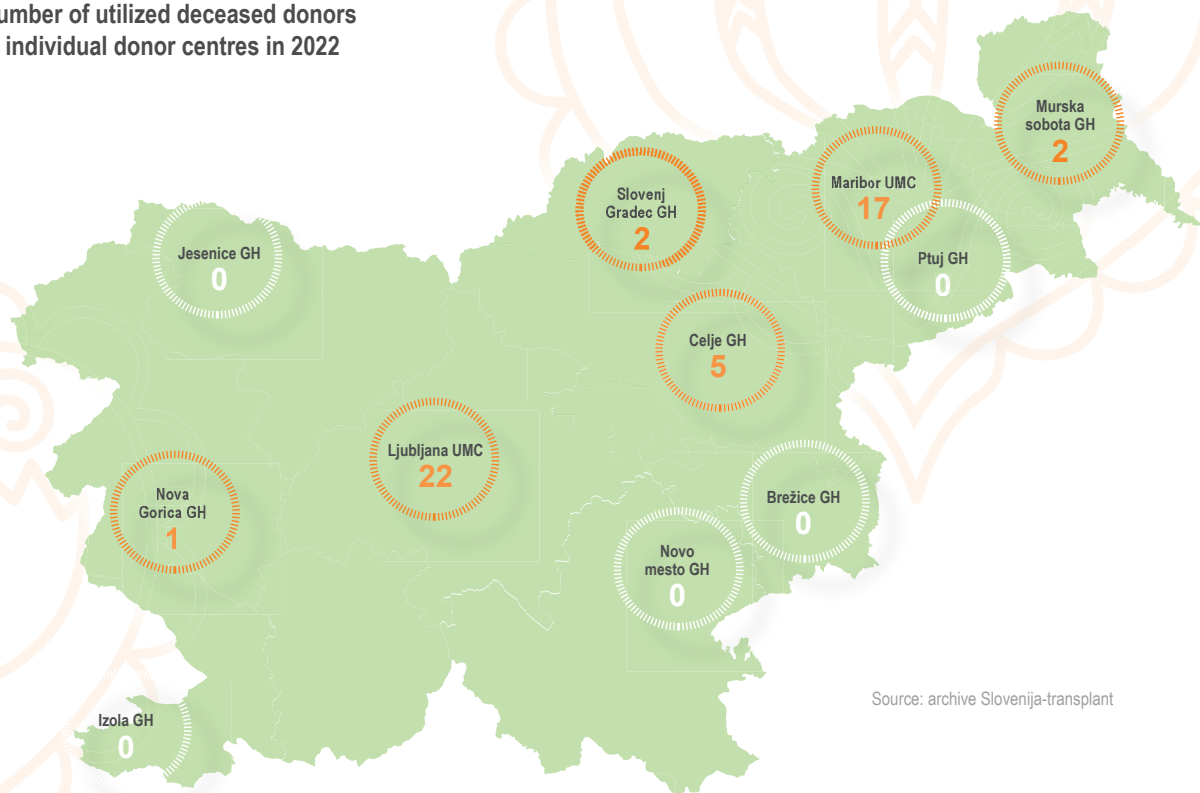
Donor centre	Number of DD	Share in%
Ljubljana UMC	22	44.9
Ljubljana total		
of which NICU*	6	
of which CICU	7	
of which CDIIM	6	
of which CDPSIT	1	
of which CVIT	1	
of which RC	1	
Maribor UMC	17	37.7
Celje GH	5	10.2
Murska Sobota GH	2	4.1
Slovenj Gradec GH	2	4.1
Nova Gorica GH	1	2
Jesenice GH	0	
Brežice GH	0	
Novo mesto GH	0	
Ptuj GH	0	
TOTAL	49	100

*NICU – Neurological Intensive Care Unit, CICU – Central Intensive Care Unit, CDIIM – Clinical Department of Internal Intensive Medicine, CDPSIT – Clinical Department of Paediatric Surgery and Intensive Therapy, CVICU – Cardiovascular Intensive Care Unit, RC – Respiratory Centre



Source: archive of Slovenija-transplant

Number of utilized deceased donors
in individual donor centres in 2022



Source: archive Slovenija-transplant

A photograph showing two people at a wooden table. On the left, a person wearing a denim jacket holds a small white card. On the right, a person with red nail polish holds a blue pen, ready to sign a form on the table. The form has a blue heart icon and some text. In the background, there is a white telephone and a small potted plant.

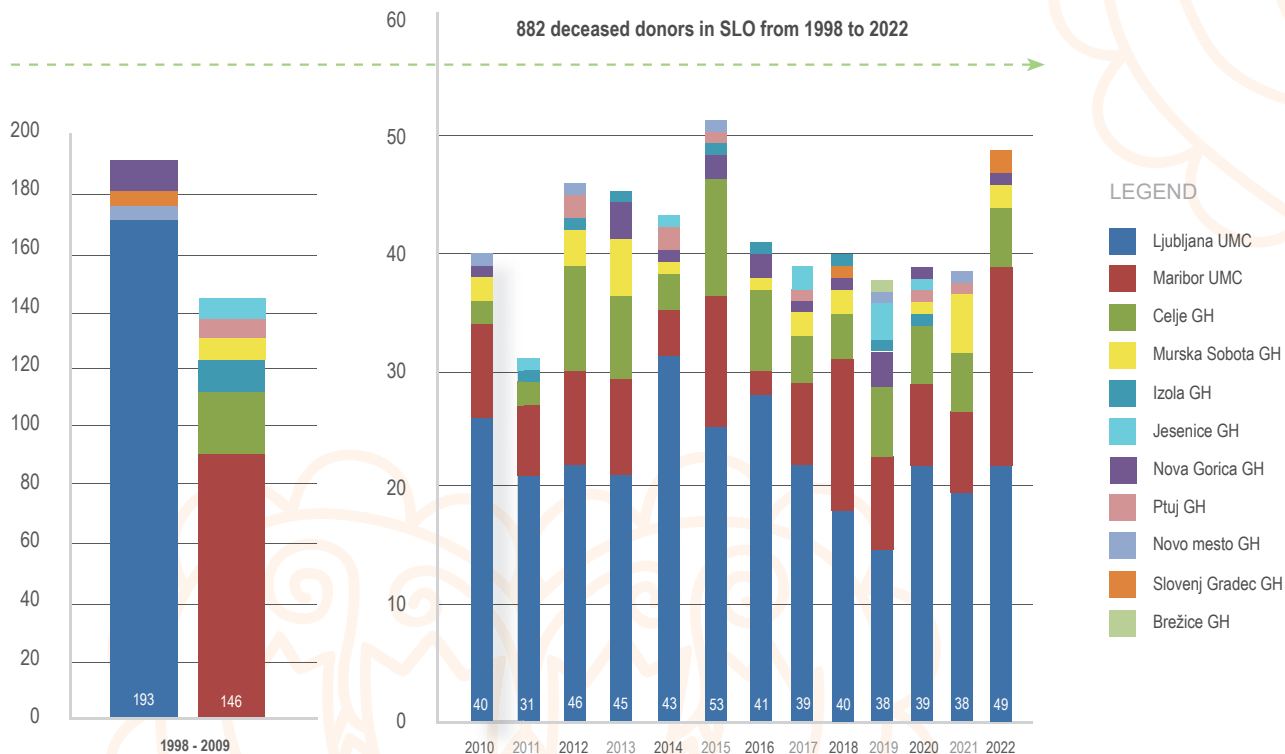
We recorded the highest
number of donation declarations
on the annual level: 2,010 people
formally expressed their
decision to donate.

Number of utilised deceased donors by donor centres in the 1998-2022 period

Year	LJ UMC	MB UMC	CE GH	MS GH	NG GH	Izola GH	Ptuj GH	Jesenice GH	NM GH	SG GH	Brežice GH
1998-2009	176	95	22	7	10	9	7	6	3	4	
2010	26	8	2	2	1				1		
2011	21	6	2			1		1			
2012	22	8	9	3		1	2		1		
2013	21	8	7	5	3	1					
2014	31	4	3	1	1		2	1			
2015	25	11	10		2	1	1		1	1	1
2016	28	2	7	1	2	1					
2017	22	7	4	2	1		1	2			
2018	18	13	4	2	1	1				1	
2019	15	8	6		3	1		3	1		1
2020	22	7	5	1	1	1	1	1			
2021	20	7	5	5			1		1		
2022	22	17	5	2	1					2	
TOTAL	469	201	91	31	26	17	15	14	8	8	2

Source: archive Slovenija-transplant

Number of utilized deceased donors by donor centres in the 1998–2022 period



Potential and realisation in donor hospitals

The donation potential of an individual donor hospital is expressed as the percentage share of brain-dead donors of the total number of deceased persons in the intensive care unit (ICU). It indicates the number of deaths where the diagnostic of brain death was completed. The potential is directly associated with the identification of eligible donors in ICUs.

Realisation in the donation process indicates the number of eligible donors (proven brain death) who became actual donors. It is expressed as the share of actual donors of the total number of deaths due to brain death in the ICUs.

Source: archive Slovenija-transplant

Donor hospital	All deaths in the ICU	PD	ED	*Potential (%)	Available (%)	AD	Realisation (%)	**Available (%)
Ljubljana UMC	372	64	41	11	13.7	25	61	65
Maribor UMC	228	32	26	11.4	13.7	18	69	65
Novo mesto GH	179	11	10	5.6	8.3	8	80	55
Celje GH	133	12	5	3.8	8.3	2	40	55
Nova Gorica GH	96	2	1	1	8.3	0	/	55
Ptuj GH	84	1	1	1.2	8.3	1	100	55
Murska Sobota GH	60	4	3	5	8.3	2	67	55
Izola GH	58	1	1	1.7	8.3	0	/	55
Slovenj Gradec GH	56	0	0	0	8.3	0	/	55
Jesenice GH	43	0	0	0	8.3	0	/	55
Brežice GH	22	1	1	4.5	8.3	0	/	55

ICU – intensive care unit, PD – potential donor, ED – eligible donor (proven brain death), AD – actual donor (relatives' consent, organ removal)

Potential – % of brain-dead patients in total number of deceased persons in the ICU = % ED/total deaths in the ICU

Realisation – % of actual donors in total number of brain-dead patients = % AD/ED

*As expected, a donor hospital's potential is higher among hospitals which operate their own neurosurgical unit and can even reach up to 13.7% (available potential). UMC Ljubljana came close to its potential in 2022 as the intensive care units were not overloaded with COVID patients after March. In 2022, Maribor UMC took an extraordinary step forward, even surpassing Ljubljana UMC in terms of potential achieved. The reasons for this success are the same as in Ljubljana, and in addition, the exceptional team of coordinators was the first in the entire national donor network to start implementing a programme based on new guidelines for the treatment and care of critically ill patients in intensive care units and the possibility of organ and tissue donation after death (ICOD programme). In hospitals without their own neurosurgical unit, the available donation potential reaches up to 8.3%. This figure was again closely approached by the Celje GH. Also close were Murska Sobota GH, Slovenj Gradec GH and Brežice GH, where there was no active donor due to family refusal. Nova Gorica GH had one actual deceased donor in 2022, while in the remaining five donor hospitals there were no actual deceased donors, which is mainly due to the lack of awareness of the treating physicians and family refusals.

** In 2022, the available realisation was exceeded by all five donor hospitals with at least one actual donor, despite the very high family refusal rate (refusal rates at Ljubljana UMC of 38% and Maribor UMC of 32%).

The results in the area of realisation are so good because the teams responsible for identifying donors in the intensive care units and, in the case of UKC Maribor, also in the emergency department as part of the above-mentioned ICOD programme, did an excellent job in 2022.

In SB Murska Sobota, the realisation rate was only 40%, and the refusal of relatives to donate was as high as 60%.

Some deviations were found in low values of the potential, e.g., in Nova Gorica GH where 100% realisation was achieved in one case – there were no medical contraindications for donation and the relatives gave their consent. In such cases, the situation over a 2-year time frame is more accurate and in line with the expected results.

In hospitals where there were no proven brain deaths in 2021 and no actual donors, the potential and the realisation were both 0% or un-measurable (/).

List of authorised persons (hospital transplantation coordinators) in charge of the development, implementation and functioning of the donor programme in individual donor centres in 2022:

Donor centre	Transplantation coordinators
Ljubljana UMC	Chief Phys. Rade Stanič, MD, MSc
Maribor UMC	Tanja Kuprivec, MD (until September)/Natalija Krope, MD
Brežice GH	Nataša Pirc, MD
Celje GH	Barbara Hudournik, MD
Izola GH	Damjan Polh, MD
Jesenice GH	Andraž Nastran, MD
Murska Sobota GH	Chief Phys. Daniel Grabar, MD
Nova gorica GH	Edyta Čerkini, MD
Novo mesto GH	Matej Godnič, MD
Ptuj GH	Mateja Prevolšek, MD
Slovenj Gradec GH	Rok Popič, MD



Transplant coordinators conducted 92 consent interviews with relatives, almost double the number in 2021.

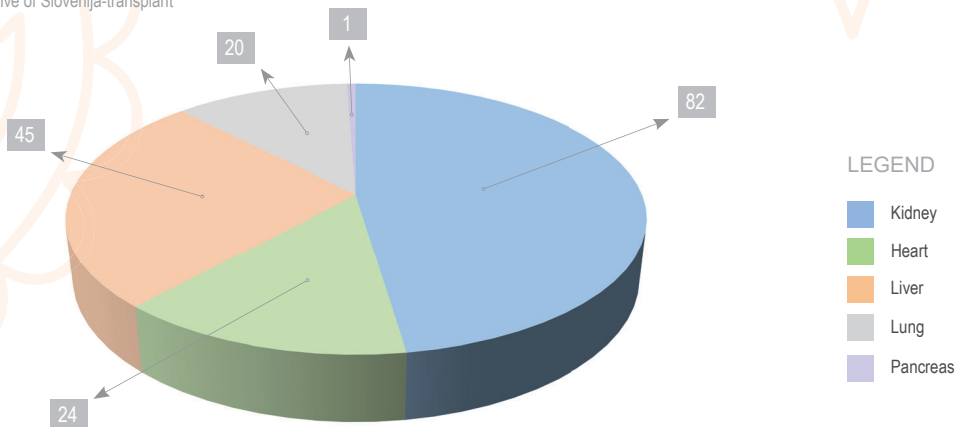
SOLID ORGANS PROCURED FOR THE PURPOSE OF MEDICAL TREATMENT

The number of procured organs depends on the number of procured deceased donors, along with the age, any medical contraindications, and appropriate brain-dead donor maintenance. In 2022, the number of deceased donors was high, and the work of the hospital transplant coordinators during the maintenance of a suitable donor was exceptional, which meant we also procured more organs. Deceased donors donated 172 organs, namely, the highest number since 2013. Data for 2022 and a comparison with previous years are given below.

Number of procured organs of Slovenian deceased donors in 2022

Kidney	Heart	Liver	Lung (both lobes)	Pancreas	TOTAL
82	24	45	20	1	172

Source: archive of Slovenija-transplant



Procured organs of Slovenian deceased donors in the 2000-2022 period

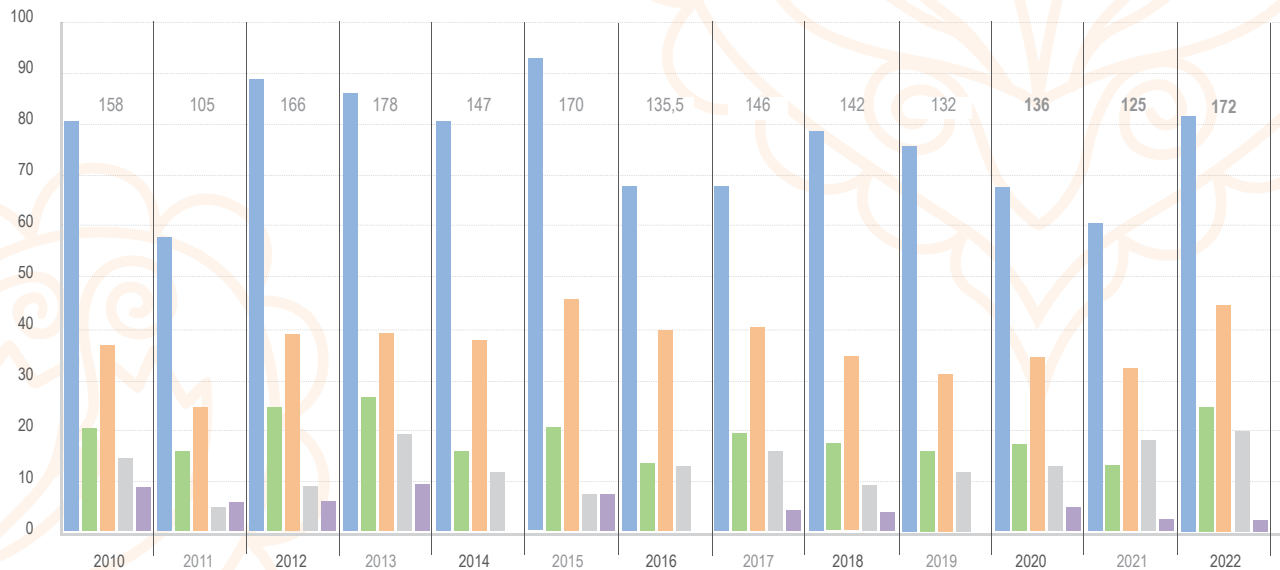
Year	Kidney	Heart	Liver	Lung (both lobes)	Pancreas	TOTAL
2000-2009	559	149	217	70,5	76	1071,5
2010	80	20	37	13	8	158
2011	58	14	24	4	5	105
2012	89	25	39	8	5	166
2013	86	26	39	19	8	178
2014	80	16	38	11	2	147
2015	92	20	46	6	6	170
2016	68	13	39	13,5	2	135,5
2017	68	19	40	15	4	146
2018	79	17	34	9	3	142
2019	75	15	31	11	/	132
2020	68	17	34	13	4	136
2021	60	13	32	18	2	125
2022	82	24	45	20	1	172
TOTAL	1544	388	695	231	126	2984

Source: archive of Slovenija-transplant

SOLID ORGANS

Procured organs of Slovenian deceased donors in the 2010–2022 period

1.915,5 procured organs of deceased donors in Slovenia in the 2010–2022 period



Source: archive of Slovenija-transplant

LEGEND

■ Kidney
 ■ Heart
 ■ Liver
 ■ Lung
 ■ Pancreas

TRANSPLANTED SOLID ORGANS

There is one transplantation centre in Slovenia – the Ljubljana University Medical Centre – at which programmes for organ transplantation are carried out. The organ distribution system ensures equal access to medical treatment with organ transplantation for all Slovenian citizens. The tasks of the transplantation centre include:

- preparing recipients for inclusion on the waiting list;
- organ transplantation; and
- guiding patients after transplantation.

Since 2014, the transplantation centre has been managed by the cardiovascular surgeon Dr Ivan Knežević, MD.

In 2022, 111 organs were transplanted, 109 from deceased donors and two kidneys from living donors. The most transplanted organ is the kidneys and we slightly exceed the average of Eurotransplant countries in terms of the number of all transplants from deceased donors per million people. Considerably higher is the number of transplanted hearts per million people, where in 2022 we were again the world's most successful country. In the last 2 years, Slovenia has been one of the most successful countries in the world also in terms of the lung transplant programme.

Paediatric transplantations are partly performed in the Ljubljana UMC and for younger children in nearby European transplantation centres (kidneys in Graz, liver in Bergamo). The relevant departments in the Ljubljana UMC are in charge of treatment and preparation before organ transplantation as well as medical treatment and monitoring of the patient after transplantation.

**Transplanted solid organs from deceased donors in the Ljubljana UMC in 2022
and a comparison with Eurotransplant – absolute number and per million people (PMP)**

	Kidney DD		Heart		Liver		Lung		Pancreas		TOTAL	
	No.	PMP	No.	PMP	No.	PMP	No.	PMP	No.	PMP	No.	PMP
SLO	51	24.2	29	13.8	18	8.5	10	7.1	1	0.5	109	51.7
ET	2993	21.6	645	4.7	1456	10.9	604	4.4	114	0.9	5812	42.4

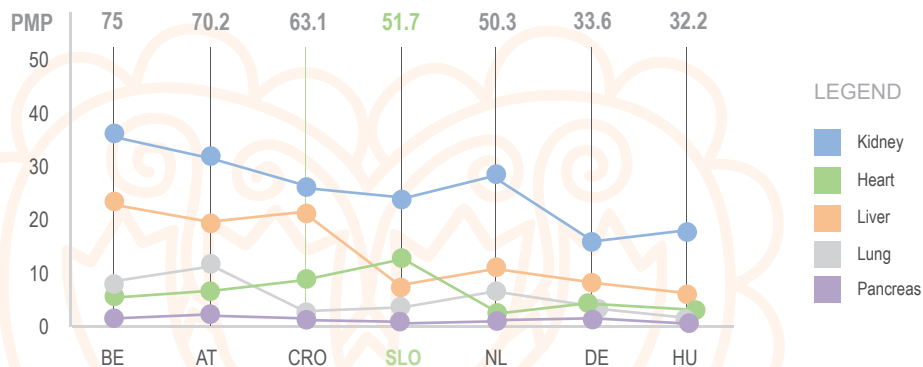
Source: <http://statistics.eurotransplant.org/>



Number of transplanted solid organs from deceased donors per million people (PMP) in Slovenia in 2022 and a comparison with the Eurotransplant countries

ET country	Kidney	Liver	Heart	Lung	Pancreas	Number of transplantations/ PMP in 2022
1. Belgium (BE)	36.4	23.1	5.4	8.2	1.9	75
2. Austria (AT)	31.3	18.6	6.9	11.4	2	70.2
3. Croatia (CRO)	26.3	22.9	9.8	2.6	1.5	63.1
4. Slovenia (SLO)	24.2	8.5	13.8	4.7	0.5	51.7
5. Netherlands (NL)	28	10.5	2.9	6.9	2	50.3
6. Germany (DE)	17.2	8.5	4.3	3.1	0.5	33.6
7. Hungary (HU)	19.6	6.9	4.1	1.2	0.4	32.2

Source: <http://statistics.eurotransplant.org/>



Number of transplanted solid organs from deceased donors in Slovenia in the 1970-2022 period

Year	Kidney	Heart	Liver	Lung*	Pancreas	TOTAL
1970 - 1985	1					1
1986	7					7
1987	18					18
1988	16					16
1989	14					14
1990	17	1			1	19
1991	11					11
1992	20					20
1993	4	1				5
1994	14	2				16
1995	10	3	1			14
1996	6	2				8
1997	19	6		1		26
1998	46	4	4			54
1999	37	7	9	3		56
2000	44	7	10	1		62
2001	47	4	9	1		61
2002	55	3	11			69
2003	43	3	9	2		57
2004	55	3	15			73

Source: archive of Slovenija-transplant

Year	Kidney	Heart	Liver	Lung*	Pancreas	TOTAL
2005	28	5	13	2		48
2006	48	8**	8	2		66
2007	30	11	10	1		52
2008	52	6	22	4		84
2009	43	18	18	2	2	83
2010	61	19	23	3	1	107
2011	46	14	20	7	1	88
2012	62	29***	27	2		120
2013	60	30	21	8	4	123
2014	55	33	31	3		122
2015	64	24	24	7	5	124
2016	44	31	27	10	5	117
2017	46	24	23	8		101
2018	54	23	27	7	3	114
2019	38	22	24	11	1	96
2020	46	24	25	16	2	113
2021	51	17	21	15		104
2022	51	29	18	10	1	109
TOTAL	1363	413	450	126	26	2378

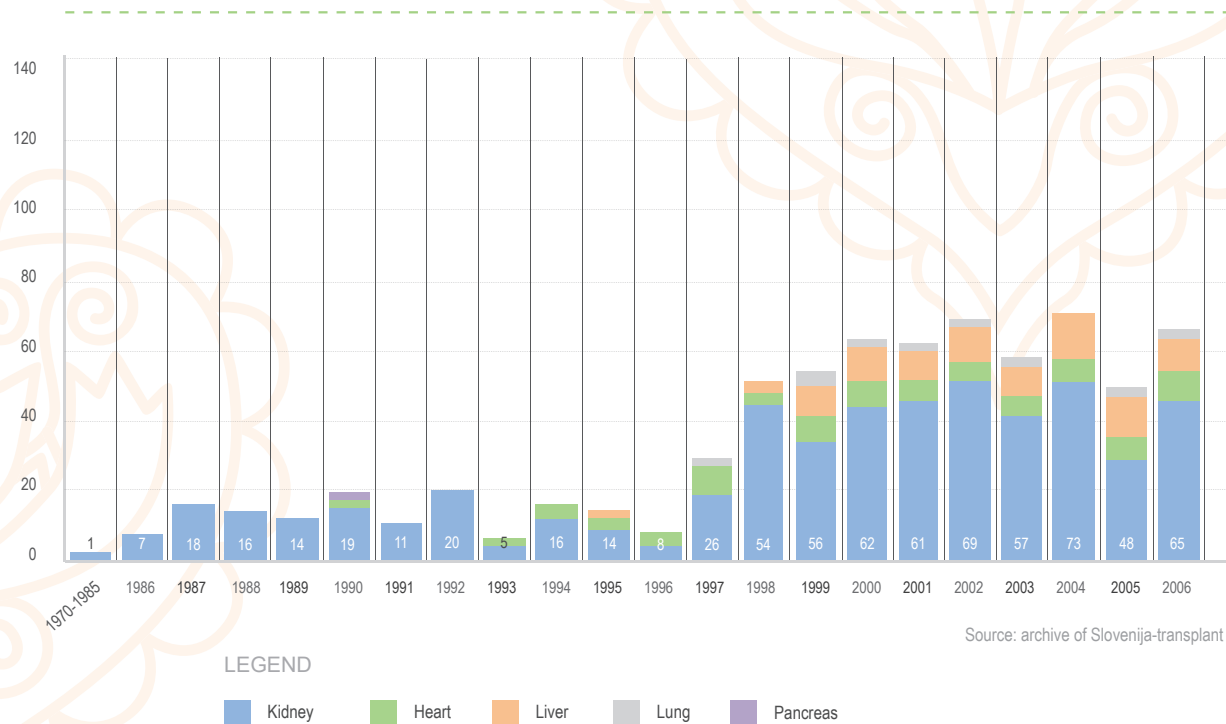
* All lung transplants for Slovenian patients were performed in AKH Vienna with the exception of 2003 (1 transplant performed in Ljubljana UMC) and 2018 (2 transplants performed in Ljubljana UMC). In 2019, 10 transplantations of both lung lobes were performed in the Ljubljana UMC and 1 paediatric lung transplantation in the University Hospital in Vienna (AKH). Since 2020, all lung transplants have been performed in UMC Ljubljana.

** 1 heart from a Slovenian donor was transplanted to a Slovenian patient in Graz

*** 1 heart was transplanted, together with lungs, to a Slovenian patient in Vienna

SOLID ORGANS

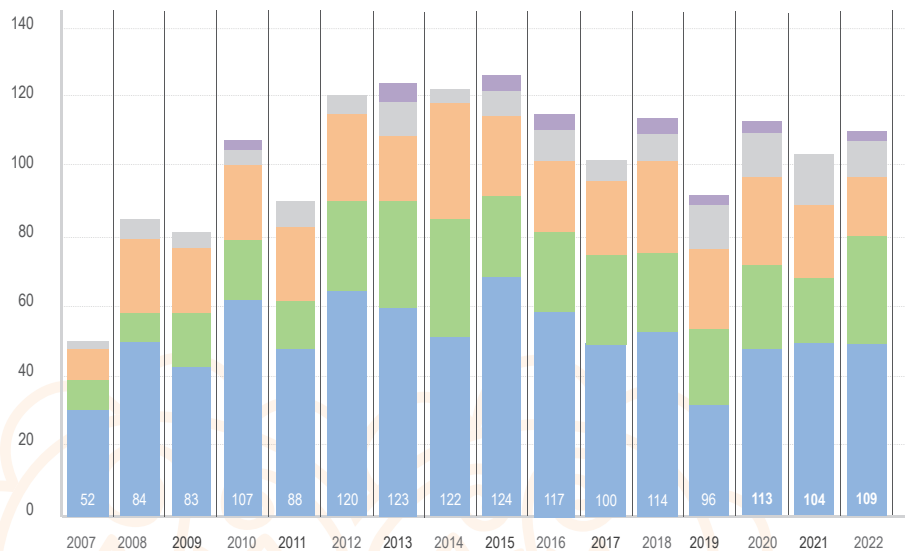
Number of transplanted solid organs of deceased donors in Slovenia in the 1970–2006 period



Source: archive of Slovenija-transplant

Number of transplanted solid organs of deceased donors in Slovenia in the 2007–2022 period

2.378 transplanted solid organs of deceased donors in SLO in the 1970–2022 period



Source: archive of Slovenija-transplant

LEGEND

Kidney

Heart

Liver

Lung

Pancreas

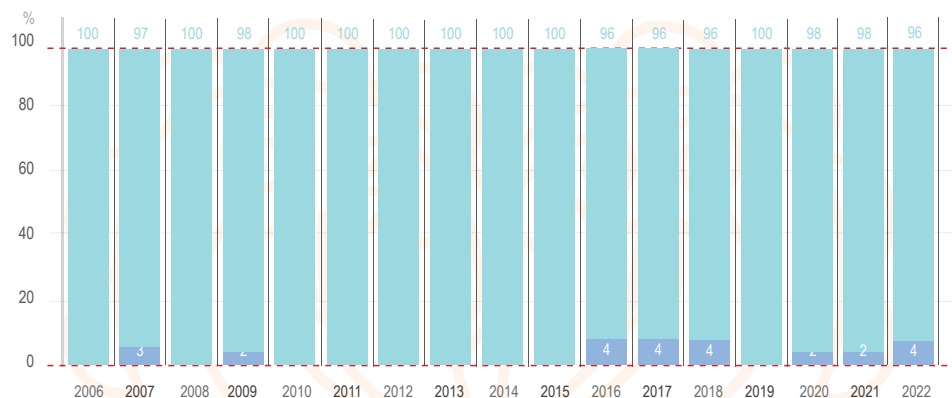
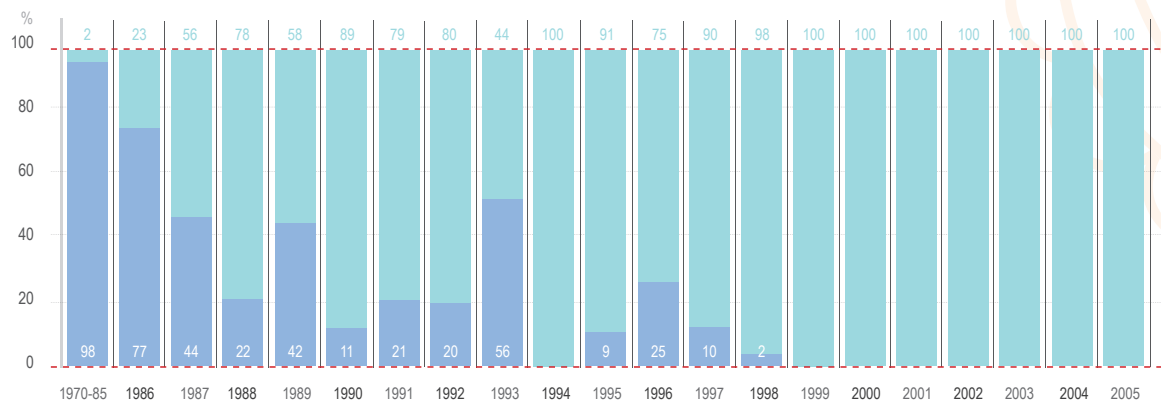
Number of kidneys transplanted from living donors in Slovenija

A living kidney donation in Slovenia is only possible for genetically or emotionally related recipients. Each case of living donation is always reviewed and approved by the Transplant Ethics Committee. The risk to the donor's health must not be disproportionate to the expected benefit to the recipient. At the start of the transplantation programme in Slovenia in 1970, living kidney donation was predominant. From 1986 on, with the establishment of the national donor programme, most organs were retrieved from deceased donors. After a few years break, the living kidney donation programme was revived in 2016 with 1–2 living kidney transplants performed yearly in UMC Ljubljana. Two such transplants were performed in 2022.

Number of kidneys transplanted from living donors (LD) in Slovenija in the 1970–2022 period

Year	Nr.	Year	Nr.	Year	Nr.	Year	Nr.	Year	Nr.	Year	Nr.
1970-85	43	1992	5	1999	0	2006	0	2013	0	2020	1
1986	23	1993	5	2000	0	2007	1	2014	0	2021	1
1987	14	1994	0	2001	0	2008	0	2015	0	2022	2
1988	13	1995	1	2002	0	2009	1	2016	2		
1989	10	1996	2	2003	0	2010	0	2017	2		
1990	2	1997	2	2004	0	2011	0	2018	2		
1991	3	1998	1	2005	0	2012	0	2019	0		
TOTAL		136									

Shares of transplanted kidneys from living and deceased donors in the 1970 – 2022 period



LEGEND

- Shares of transplanted kidneys from living donors
= TOTAL 12,2 %
- Shares of transplanted kidneys from deceased donors
= TOTAL 87,7 %

THE RESULTS IN TRANSPLANTED PATIENTS

Heart transplant programme

From 1990 to the end of 2022, the Ljubljana UMC performed 412 heart transplants, with 29 of those occurring in 2022. Twenty-six (93%) patients had an urgent and two (7%) an elective transplant. The Ljubljana UMC is ranked among largest heart transplant centres in the Eurotransplant area and may be compared by number of transplants with the biggest centres in Germany, Belgium, Hungary and Austria. There is a total of 42 heart transplant centres in the Eurotransplant area.

The multi-year average (2009–2022) waiting period for an elective heart transplant was approximately 250 days and for an urgent heart transplant about 50 days.

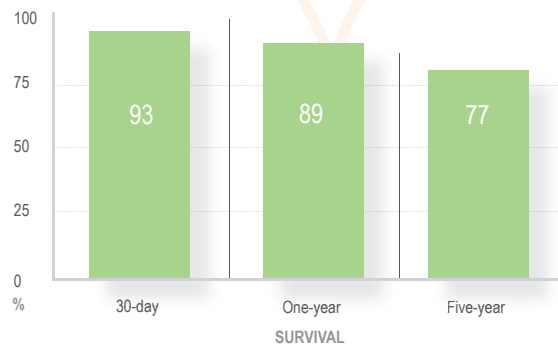
Of all patients with a heart transplant in 2022, 48% needed the procedure due to dilated cardiomyopathy and 31% due to ischemic heart disease. Other reasons for the transplant included valvular heart disease (7%), arrhythmogenic cardiomyopathy (7%), hypertrophic cardiomyopathy (3.5%) and

congenital heart defects (3.5%).

The patient survival rates are comparable with those from the international reference register kept by the International Society for Heart and Lung Transplantation (ISHLT).

Survival of adult heart transplant recipients in %
(1990–2022, n = 412)

30-day survival	One-year survival	Five-year survival
93 %	89 %	77 %



Source: Report on implementation of the programme for advanced heart failure and heart transplantation for 2022 (Cardiology Department, Ljubljana University Medical Centre)

Kidney transplant programme

In the period in which Slovenija-transplant has been a member of Eurotransplant (1 January 2000–31 December 2022), 1,135 kidneys of deceased donors (1,123) and living donors (12) have been transplanted. Some recipients had a kidney transplanted in combination with other organs, including 25 with pancreas, 6 with heart and 3 with liver.

In the first post-transplantation year, the clinical, biopsy-proven acute rejection of the transplant was reported in 12.7% of all patients (1 January 2000–31 December 2022), and in 7.5% of all patients in 2022.

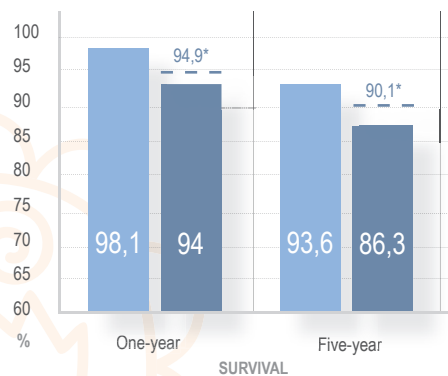
In the 2010–2022 period, the median waiting time until transplantation was 370 days. In 2022, the median waiting time until transplantation was 214 days (in 2021 it was 566 days).

Source: Quality indicators of the Kidney Transplantation Centre (Department of Nephrology,

*Censored for patient death with a functioning kidney graft

Survival of kidney transplant recipients and transplanted organs in % (2000–2022, n = 1135)

One-year survival	Five-year survival
Patients	
98.1 %	93.6 %
Transplanted organs	
94.1 %	87.1 %
95 %*	90.6 %*



LEGEND

■ Patients ■ Transplanted organs

Liver transplant programme

Between 1995 and 31 December 2022, the University Medical Centre Ljubljana performed 450 liver transplants in 406 patients: 374 (92%) patients had elective liver transplantation due to cirrhosis of the liver, chronic liver diseases and liver tumours; 32 (8%) had urgent liver transplantation due to acute liver failure.

In 2022, 18 liver transplants were performed in 18 patients (9 men and 9 women) at the UMC Ljubljana: 17 patients had elective liver transplantation and 1 had urgent liver transplantation.

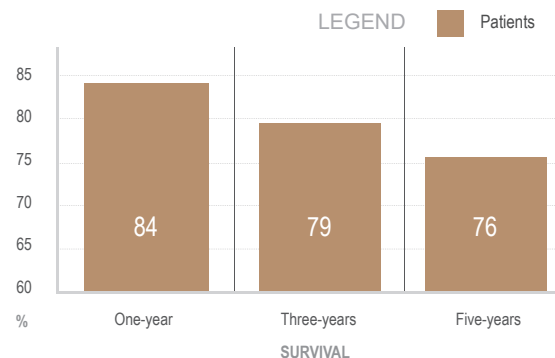
Five patients (27.8%, 3 men and 2 women) needed the procedure due to primary sclerosing cholangitis, 2 male patients (11.1%) due to cryptogenic cirrhosis and 2 male patients (11.1%) due to etilic cirrhosis of the liver. Two female patients (11.1%) had a liver transplant due to primary biliary cholangitis and 2 female patients (11.1%) due to polycystic liver disease. One of these patients had a liver transplanted in combination with a kidney. One male patient had a liver transplantation because of cirrhosis of the liver with chronic hepatitis B and one patient

because of acute liver failure after extensive resection of liver due to hepatocellular carcinoma (HCC). One patient each had liver transplantation for HCC, Abernethy syndrome, and complications of liver cirrhosis caused by autoimmune hepatitis.

The average waiting time for liver transplantation in 2022 was 67 days, with a median of 62 days. In cases of great urgency, a suitable organ was usually available within a few days.

Survival of liver transplant recipients and transplanted organs in % (1988–2022)

One-year survival	Three-year survival	Five-year survival
84 %	79 %	76 %



Pancreas transplant programme (in combination with kidney)

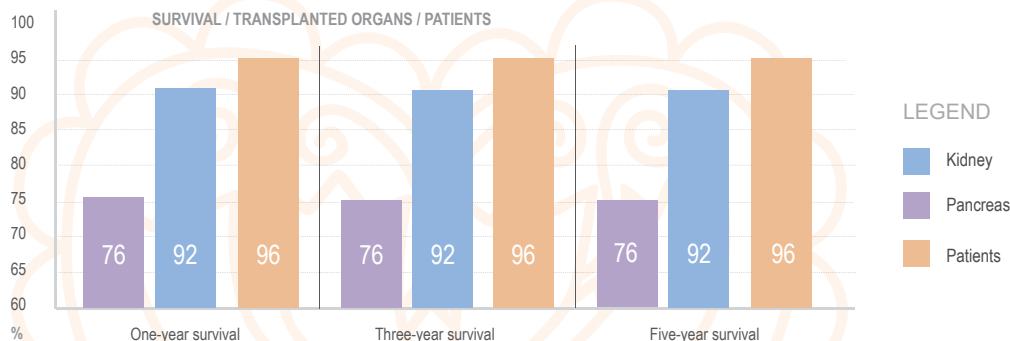
In the period from February 2009 to 31 December 2022, 25 pancreas transplants were carried out, all concurrently with kidney. One pancreas and kidney transplantation was performed in 2022.

In the period from February 2009 to 31 December 2022, five pancreases were removed in the early post-transplant period. One recipient died in the early post-transplant period due to infection. On 31 December 2022, there were 16 patients with a functioning pancreas and kidney.

Survival of combined pancreas-kidney transplant recipients and transplanted organs in % (2009–2022, n=25 (patients) in n=20 (transplanted organs))

One-year survival		Three-year survival		Five-year survival	
Patients					
96 %		96 %		96 %	
Transplanted organs					
Pancreas	Kidney	Pancreas	Kidney	Pancreas	Kidney
76 %	92 %	76 %	92 %	76 %	92 %

Source: Report on implementation of the programme for pancreas transplantation for 2022
Associate Professor Dr Damjan Kovač (Department of Nephrology, UMC Ljubljana)



Lung transplant programme

In the period from 1997 to 2022, 126 lung transplants were performed in Slovenian patients: 72 transplants were performed at AKH Vienna (until 2019), including 1 re-transplantation and 1 combined lung-heart transplantation. In 2022, 10 lung transplants were performed at UMC Ljubljana, 9 of them were of both lung lobes, in 1 case a lung re-transplantation was required.

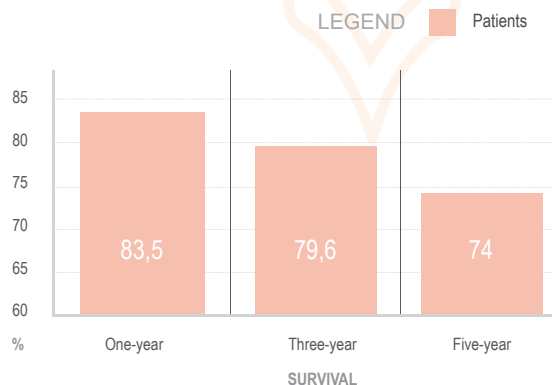
The most common indications for lung transplantation at the UMC Ljubljana were chronic obstructive pulmonary disease (38%) and pulmonary fibrosis (21%). Transplants in patients with cystic fibrosis have become rare due to the introduction of highly effective drugs for this disease. The last transplant with this indication was in 2020. There were no transplants in 2022 due to the consequences of the COVID-19 disease.

The median waiting time for elective lung transplantation in the period 2018–2022 was 91 days, for urgent transplantations 7 days.

Survival of lung transplant recipients in % (1997–2022)*

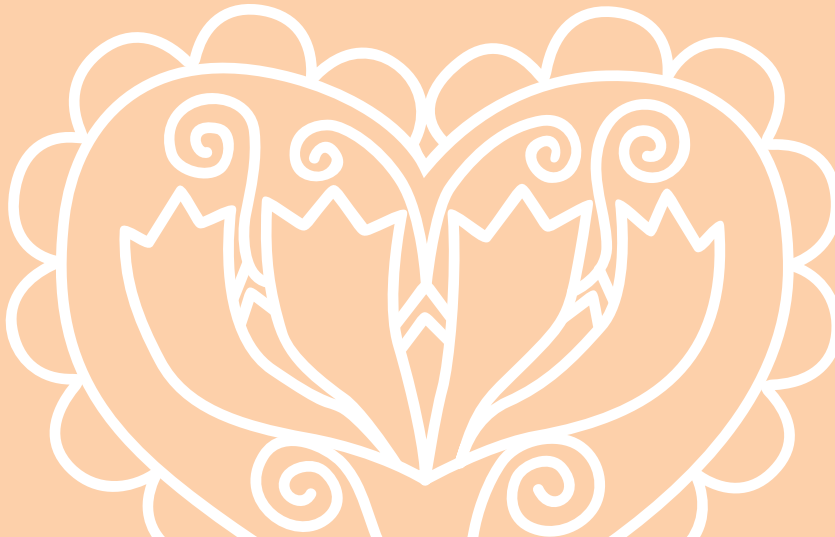
One-year survival	Three-year survival	Five-year survival
Patients		
83.5 %	79.6 %	74 %

Source: Report on implementation of the programme for lung transplantation for 2022, Doc. Dr. Matevž Harlander, MD (Department of Pulmonology and Allergology, University Medical Centre Ljubljana)



*Ten-year survival of Slovenian patients after lung transplantation is 60.0%. In the period 2018–2022, the 1-year survival rate was 83.9% and the 3-year survival rate was 80.1% for patients who underwent a lung transplant at the Ljubljana UMC.

Tissues and cells



TRANSPLANTATION OF HAEMATOPOIETIC STEM CELLS

The transplantation of haematopoietic stem cells (HSCs) is the dominant type of cell treatment since over 70 malignant and non-malignant diseases can be treated in this way, whereas for specific haematological diseases this is the main and only therapeutic possibility for a patient's recovery. The modern method of medical treatment using HSCs is more than 90% successful in optimal conditions (<http://www.ztm.si>). For such success, good donor-recipient immunological (HLA) matching is required. Therefore, Slovenia has been included in the World Registry (BMWR), where voluntary donors are registered and typed, and where collection and transplantation procedures are performed if a match is found.

In some cases, it is possible to use a patient's own HSCs, this is called an autologous donation. More often a donation is based on match between relatives. According to Slovenian legislation, collection and transplantation can also be performed between unrelated persons, while respecting the principle of anonymity. Donation by another donor is called allogeneic and a donor is sought both in Slovenia and abroad.

The Slovenija Donor register

In Slovenia a register of non-related donors, Slovenia Donor, was established in 1991 and in the following year it became a full member of the world register Bone Marrow Donors Worldwide (BMDW).

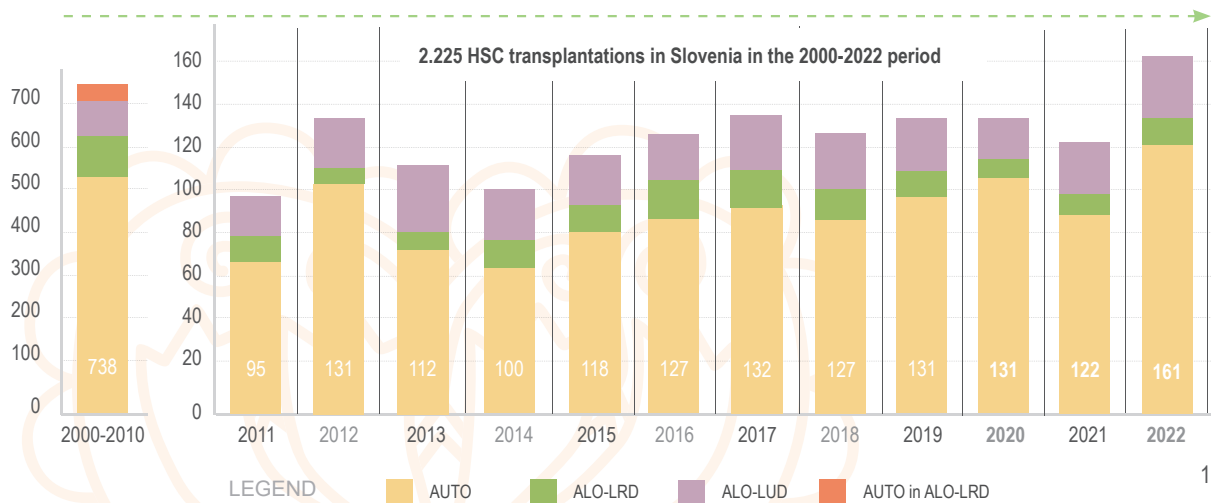
On 31 December 2022, the Slovenia Donor register included 25,190 people, of whom 21,727 were entered on the BMDW register.

HSC transplantations in Slovenia in the 2000-2022 period

Transplantation type	2000-2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
AUTO	531	68	101	74	63	84	86	92	88	89	104	89	121
ALO-LRD	102	9	8	7	11	10	15	12	13	11	10	10	13
ALO-LUD	84	18	22	31	26	24	26	28	26	31	17	23	27
AUTO and ALO-LRD	21												
TOTAL	738	95	131	112	100	118	127	132	127	131	131	122	161

AUTO – autologous transplantations, **ALO** – allogeneic transplantations, **LRD** – living related donor, **LUD** – living unrelated donor

Source: Yearly report of ZTM – Slovenija donor, data collected monthly for Slovenija-transplant archives



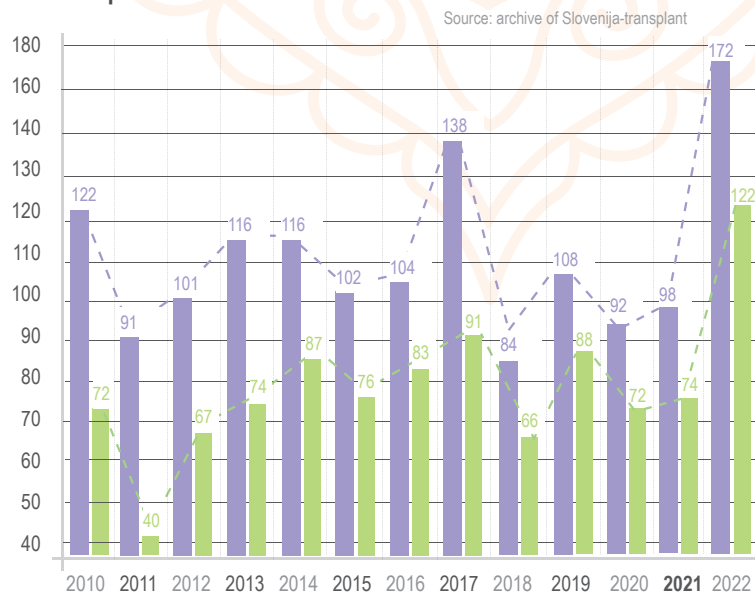
CORNEA PROCUREMENT AND TRANSPLANTATION PROGRAMME

Cornea transplantation is one of the most frequent and most successful tissue transplantations in Slovenia and in the world. This medical treatment is often the only method that can improve sight after a disease or injury. In Slovenia, corneas are procured from deceased donors after a

Procured and transplanted corneas in the 2010–2022 period

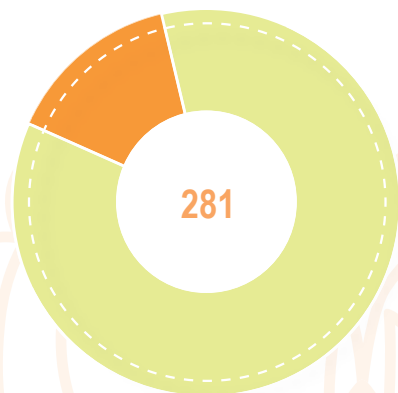
Year	No. of procured corneas	*No. of transplanted corneas
2010	122	72
2011	91	40
2012	101	67
2013	116	74
2014	116	87
2015	102	76
2016	104	83
2017	138	91
2018	84	66
2019	108	88
2020	92	72
2021	98	74
2022	172	122

Source: Archive of Slovenija-transplant
 * 2010–2017 – cornea transplants performed in Ljubljana UMC only; from 2018 on, cornea transplants performed in Ljubljana UMC and Maribor UMC



cardiovascular death or a brain death. The removal of corneas is possible following consent given by the deceased person before their death or if their close relatives do not object. In addition to the consent obtained, a detailed assessment of the suitability of the cornea for transplantation by the physician responsible for the recipient is required. Corneas are transplanted in two transplantation centres: the Department of Ophthalmology in the Ljubljana UMC and the Department of Ophthalmology in the Maribor UMC.

Waiting list of patients seeking a cornea transplant at the Department of Ophthalmology in the Ljubljana UMC (on 16 January 2023) and Maribor UMC (on 11 January 2023)



Diagnosis	Number of patients
Keratoconus	41
Other diagnoses	240
TOTAL	281

Total: 281 patients (275 Ljubljana UMC, 6 Maribor UMC) (100%)

LEGEND

- Diagnosis of keratoconus: **41 patients (15%)**
- Other diagnoses: **240 patients (85%)**
(injuries, degeneration, retransplantation, corneal macula, Fuchs dystrophy, endothelial dystrophy, cornea guttata, aphakia and pseudophakia, bullous keratopathy, infections, other)

Source: Ljubljana UMC, Department of Ophthalmology,
UMC Maribor Department of Ophthalmology

OTHER TISSUES AND CELLS

Traceability and transparency in transplant programmes or tissue and cell use programmes for treatment purposes

Tissue and cell institutions must hold a valid permit issued by the Agency for Medicinal Products and Medical Devices of the Republic of Slovenia (hereinafter: JAZMP). Slovenija-transplant ensures traceability and transparency by promptly collecting and reviewing reports written by the institutions for tissues and cells which present the donation, procurement, processing, storing, allocation, use and disposal of tissues and cells.

At the end of the year, Slovenija-transplant compiles an aggregate annual report based on annual reports issued by individual tissue and cell institutions. We are also authorised to compile an annual final report on serious adverse events and reactions and submit it to the JAZMP, which then reports about this to the European Commission.

Tissue and cell institutions along with quality and safety assurance

In Slovenia, 27 institutions are involved in the activity of procuring and using tissues and cells on the national level. Fifteen hospitals are included in the programme and, within these, 40 clinical departments. In terms of their status, 18 tissue and cell institutions are public and 9 privately-owned. Private institutions hold a permit exclusively for the autologous procurement of tissues and cells.

Slovenija-transplant and the JAZMP ensure that the system functions transparently and promptly identify and discuss any deviations that could affect the quality and safety of the tissues and cells of donors, recipients as well as the staff involved in the processes.

To obtain a permit, every institution must comply with strict expert and legal terms and provisions. All institutions have set up a quality assurance system where all the procedures for ensuring the conditions for tissue and cell quality and recipient safety are defined. They are regularly supervised by the JAZMP, whereas Slovenija-transplant also performs verification of the data reported.

Artificial insemination with biomedical assistance and reproductive cells

Four centres are registered in Slovenia for the activity of artificial insemination with biomedical assistance for couples; namely, the Ljubljana AIBA Centre, the Maribor AIBA Centre, the Postojna AIBA Centre, and the Dravljje Health Centre.

The scope of their activities is evident from the table showing the procured and used tissues and cells. This is the most comprehensive area in terms of the number of procedures conducted.

Procuring and storing umbilical cord blood and the umbilical cord

In Slovenia we also procure haematopoietic stem cells from umbilical cord blood and the umbilical cord as well as other tissues (e.g., milk teeth). One public tissue bank, i.e., the Blood Transfusion Centre of Slovenia (hereinafter: BTCS), and three privately-owned institutions (Izborna celica, Biobanka and FH-S) hold a permit for this activity. The public umbilical cord blood bank within the BTCS has stopped accepting samples of umbilical cord blood because a sufficient number of samples had been collected and stored to cater to the needs of Slovenia. However, discussions are underway to continue collecting and storing not only for autologous use, but also for anyone who would need such cells. We are talking about an allogeneic donation that would be made possible by public funds.

Number of procured tissues and cells in the 2009–2022 period

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Skin*	28	45	22	36	85	89	52	57	32	22	24	10	46	63
Bones*	38	123	108	67	93	82	147	74	80	78	71	59	256	87
Soft bone grafts*	22	39	/	3	11	3	9	/	12	/	/	/	0	0
Cartilage*	37	21	4	12	11	11	12	/	/	/	/	/	0	0
Reproductive cells (no. of cells)	15854	43472	8640	27479	41929	37542	39769	26191	36338	13778	26813	28209	24736	25721

* Unit: number of samples taken

Number of tissues and cells used in the 2009–2022 period

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Skin*	36	10	14	34	67	23	31	28	/	20	3	/	47	43
Bones*	23	47	57	97	59	62	92	82	72	71	81	101	123	90
Soft bone grafts*	12	/	2	2	3	4	3	5	2	3	5	4	2	6
Cartilage*	15	/	3	7	4	9	5	1	/	/	1	/	3	0
Reproductive cells	1450	2018	29651	23330	23506	27271	31127	26620	31817	12110	5109	14255	27547	28194

* Unit: number of samples used

Source: Archive of Slovenija-transplant

Number of procured umbilical cord blood units in the period 2015–2022

Institution / Year	2015	2016	2017	2018	2019	2020	2021	2022
Izborna celica	76	144	107	82	81	81	78	73
Biobanka	175	178	266	110	224	197	241	170
FH-S	8	45	101	169	192	206	245	293
Neocelica	238	0*	0*	0*	0*	0*	0*	0*

* this institution stopped operating

Number of procured umbilical cord units in the period 2015–2022

Institution / Year	2015	2016	2017	2018	2019	2020	2021	2022
Izborna celica	60	116	96	52	73	75	77	71
Biobanka	32	150	222	96	212	184	236	170
FH-S	8	42	96	114	196	213	247	301
Neocelica	198	0*	0*	0*	0*	0*	0*	0*

* this institution stopped operating

Source: Archive of Slovenija-transplant

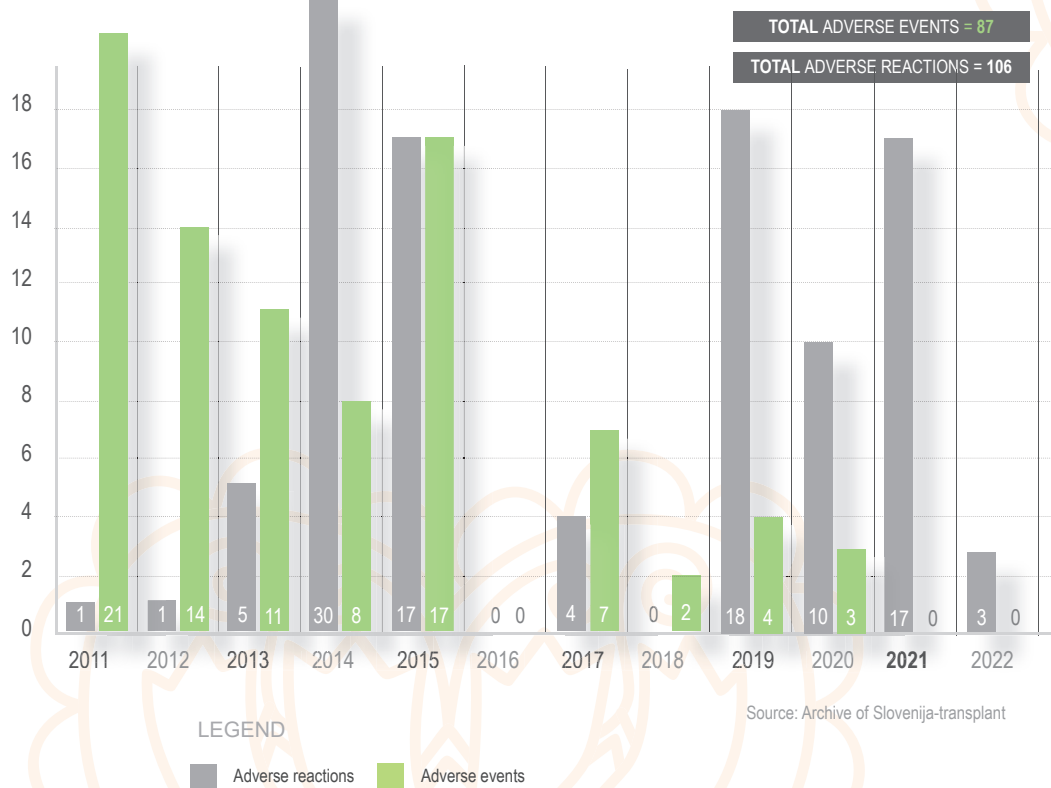
ADVERSE EVENTS AND REACTIONS

Slovenija-transplant is responsible for monitoring adverse events and reactions as well as deviations in the area of the procurement of tissues and cells for transplantation and/or tissue vigilance. The aim of collecting reports on adverse events and reactions or even raising doubts about them is to assure the quality of procedures and thus prevent the damage or even loss of tissues and cells.

Reporting takes place using prescribed forms, whereby initial and final reports must be submitted for each case. Both forms are attached to the Rules on Tissue Vigilance. Reporting entails several phases: identification of deviation, detailed assessment and description of the case, adoption of appropriate measures for preventing damage to tissues and cells as well as people, reporting the case to relevant institutions, and notification of all tissue and cell institutions which were provided with tissues and cells in which deviations were identified.

All data collected in the tissue vigilance system are anonymised so as to ensure privacy and, on the other hand, comply with the so-called culture of non-judgement, which means encouraging reporting along with searching for solutions and improvements, while not judging implementers on a personal level.

Number of adverse events and reactions in the 2012-2022 period



EDUCATING AND INFORMING THE PROFESSIONAL PUBLIC

Educating and informing healthcare professionals is vital for the successful development and functioning of the donor and transplantation activities. In 2022, we significantly stepped up our educational activities. All educational programmes were updated in line with new developments and modern professional guidelines and included or strengthened the presentation of topical issues like donation after circulatory death (DCD), options for the active detection of possible deceased donors, new guidelines for the treatment and care of critically ill patients in intensive care units, options for organ and tissue donation after death (ICOD programme) and the basics of preventing organ trafficking. An e-newsletter was launched to keep the professional public informed of new developments.

“Basics of the Donor Programme” training

Basic training is provided in all hospitals involved in donor activities. Participants are given an overview of the donor programme, its activities and results. In 2022, we delivered the training in six selected donor hospitals: UMC Ljubljana (46 participants), UMC Maribor (64 participants), Celje GH (45 participants), Murska Sobota GH (33 participants), Izola GH (27 participants) and Nova Gorica GH (24 participants). A total of 239 participants, doctors and nurses, attended the training sessions and rated all the lectures highly.

Expanded education and training for health professionals

The Intermediate Training Course in Transplant Procurement Management according to the TPM programme is delivered in collaboration with the Spanish organisation DTI. The aim of the course is to develop the donor programme and provide in-depth training for doctors and other staff in intensive care units from all donor hospitals. In 2022, as an exception we delivered the course online using an audio and video communication platform. It was attended by 30 participants from all Slovenian donor hospitals and young transplant coordinators from Slovenija-transplant. Lectures and workshops were given by lecturers from Slovenija-transplant and UMC Ljubljana, while Spanish experts presented global

trends and innovations, with a focus on donation after circulatory death (DCD), new guidelines in the treatment and care of critically ill patients in intensive care units, and options for organ and tissue donation after death (Intensive Care Organ Donation - ICOD programme).

“Breaking the bad news and talking about donation” workshop

The workshop's main objectives are to teach communication skills and ways to communicate bad news, to respond appropriately to bereaved relatives, to have a conversation about organ donation and to understand the value of the decision to donate organs for bereaved relatives. The workshop is intended for transplant coordinators, doctors and nurses working in intensive care units. In 2022, one basic workshop was held for six new colleagues in the team of central transplant coordinators.

Histovigilance workshop

This workshop is aimed at responsible persons at tissue and cell institutes, hospital and central transplant coordinators and all other professionals involved in the procurement, transplantation and processing of tissues and cells for transplantation therapy. Two workshops were held in 2022, attended by a total of 46 participants.

We presented the EU histovigilance system, the national reporting system, use of the histovigilance case evaluation tool and histovigilance cases from practice. This was followed by practical group work and a discussion.

Slovenija-transplant e-newsletter

The professional news from Slovenija-transplant is targeted at the professional public, informing them about novelties, activities of the institute, media publications, statistics and training. The aim of this communication tool is to reach a well-informed, connected and development-oriented professional public. In 2022, we published four issues of the newsletter, as sent out to more than 500 email addresses.

INTERNATIONAL PROJECTS



Funded by
the European Union

BRAVEST – **B**uilding **R**esilience **A**gainst crisis: a systematic and global approach to ad**V**ance organ Safety and supply in Transpla ntation

Duration: 1 September 2022 – 28 February 2025

Co-financing: EU4HEALTH Programme

Slovenija-transplant is a partner in a prestigious project led by the European Society for Organ Transplantation (ESOT) for which Dr Luciano Potena, MD, PhD, is responsible. Members of a top international interdisciplinary team will analyse the factors that influenced the success of donation and transplantation activities before, during and after the SARS-CoV-2 outbreak. Based on different experiences, we will identify good practices (clinical cases, organisational support, system solutions) and develop an algorithm and paradigm to improve the resilience of national systems and their continuous, successful and safe operation in times of unpredictable events and various crises (e.g., epidemic, ecological disasters, earthquake, war etc.). The project will develop a design for the collection of data related to transplantation activities and organ procurement in registers on the European level.

Slovenija-transplant is a member of the consortium, leads Work Stream 5 (Sustainability of results) and is involved in all work streams and activities of the project. The Slovenian team includes Chief Phys. Danica Avsec, MD, PhD, and Jana Šimenc, MD. The project kick-off meeting took place in Bologna on 19 and 20 October 2022. More information about the project: <https://www.bravest-project.eu/>.



What is the BRAVEST project?

We are a group of 9 organisations and institutions in the EU, working to improve organ donation and transplantation for patients and providers.

We are researching the organisation and management of donation and transplantation during the COVID-19 pandemic, to learn from challenges and identify best solutions.



Learn more: bravest-project.eu



#WeAreBRAVEST

Where is BRAVEST based?



Eurotransplant



ORSZÁGOS
VÉRELLÁTÓ
SZOLGÁLAT

slovenija



transplant



Centro Nazionale Trapianti

ISTITUTO SUPERIORE DI SANITÀ

#WeAreBRAVEST

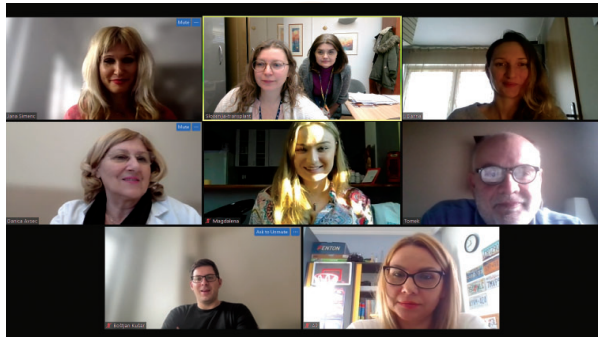
YOU HAVE MORE THAN ONE LIFE – ADULT EDUCATION FOR PROMOTION OF TRANSPLANTATION

Duration: 1 November 2022 – 31 July 2023

Financing: ERASMUS+ EU Programme

The project “You have more than one life” is implemented in cooperation with the Polish partner organisation Fundacja Pasjonaci Życia, which is also the project’s promoter. The project addresses the area of raising public awareness about the importance of organ donation. We will share knowledge with our partners, produce a set of good practices in the field of communication in a “knowledge brochure”, train 15 post-transplant people in public speaking during a 3-day workshop and make 15 short videos with personal experiences and appeals from ‘ambassadors’ to donate. The workshops and partner visits will take place in Poland and Slovenia. The new material will make an important contribution to the modern communication of Slovenija-transplant.

The launch meeting took place on 14 December 2022 (online). More information about the project is available on the Facebook profile of Slovenija-transplant.



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Donor programme:

- Archive of Slovenija-transplant
- Eurotransplant Statistics Library: <https://statistics.eurotransplant.org/>
- Preliminary numbers 2022, IRODaT (International Registry in Organ Donation and Transplantation), www.irodat.org.

Transplant programmes:

- Reports on implementation of the transplant programmes of Ljubljana UMC for 2022

slovenija



transplant

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