

ON BEHALF OF THOSE WHO WAIT

The current state of transplantation in Georgia

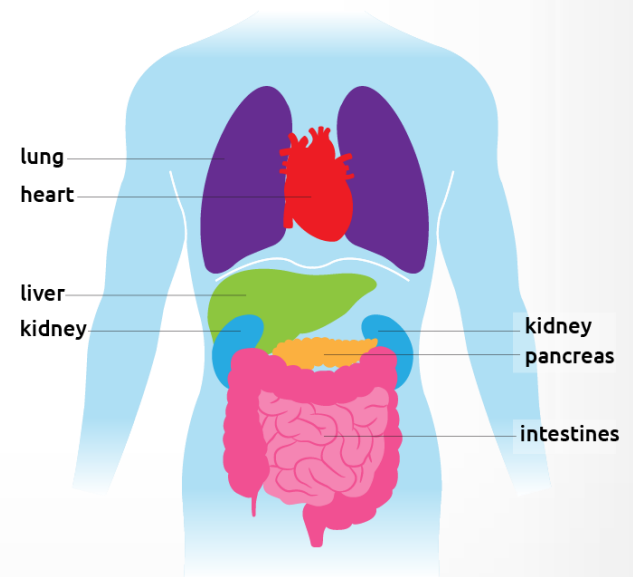
Jon Hundley, MD
Piedmont Transplant Institute



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1. Piedmont Transplant Institute
2. Georgia's need:
 - a) Abdominal transplantation
 - b) Thoracic Transplantation
3. Organ allocation
4. Donation after brain death
5. Donation after cardiac death



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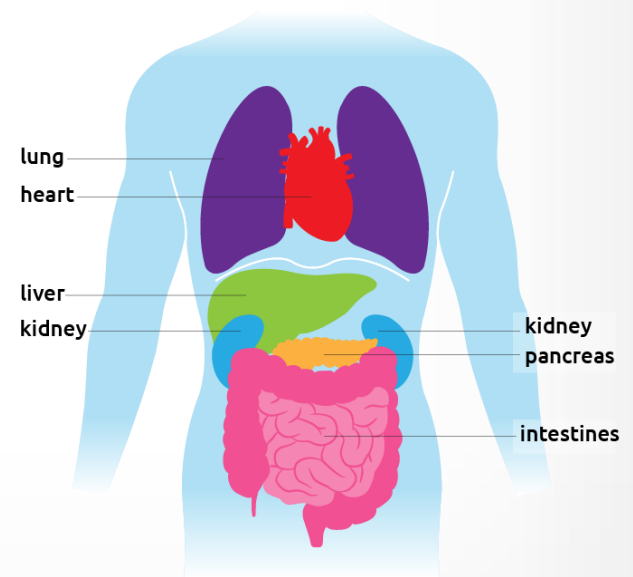
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PTI: abdominal transplantation and advanced surgical oncology

- Established in 1986 with our first kidney transplant
- First liver transplant April 15, 2005
- **2019**
 - 9th largest liver transplant program in the country (134)
 - only living donor liver transplant program in the southeast
 - 18th largest kidney/pancreas transplant program (250)
 - 633 advanced cancer operations performed

Our Team:

- Eight transplant hepatologists
- Five transplant nephrologists
- Nine surgeons (6 transplant, 3 surgical oncologists)
- 203 total staff

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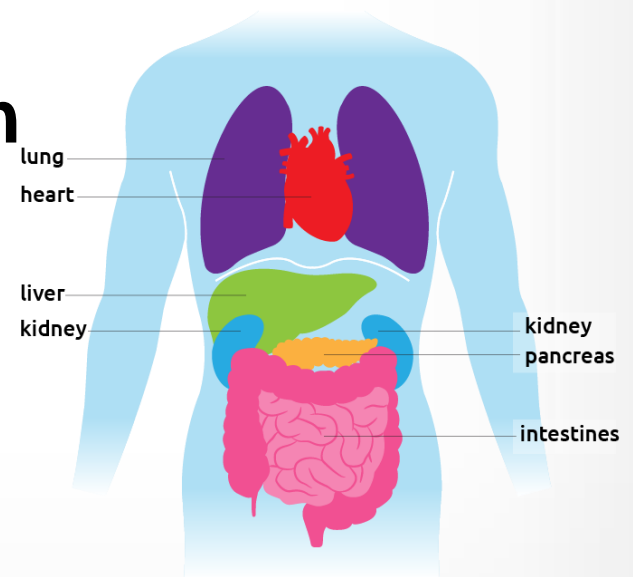
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KIDNEY TRANSPLANT BENEFIT

50 yo Georgian goes on dialysis....

- Life expectancy without transplant?
- Life expectancy with transplant?
- Waiting time in Georgia for a deceased donor kidney transplant?

TRANSPLANT BENEFIT

50 yo Georgian goes on dialysis....

- Life expectancy without transplant?

7.6 years

- Life expectancy with transplant?

21.6 years

- Waiting time in Georgia for a deceased donor kidney transplant?

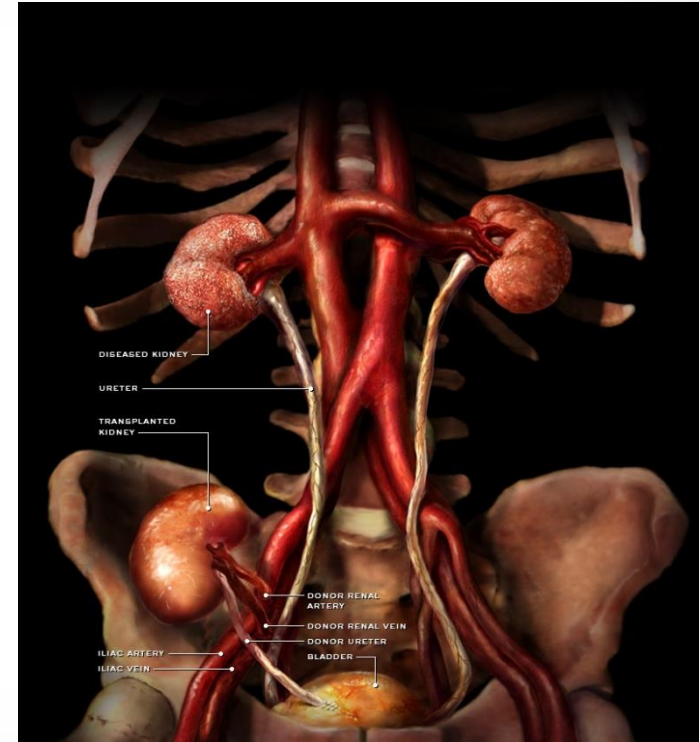
9 years: 65% mortality at 7.6 yrs

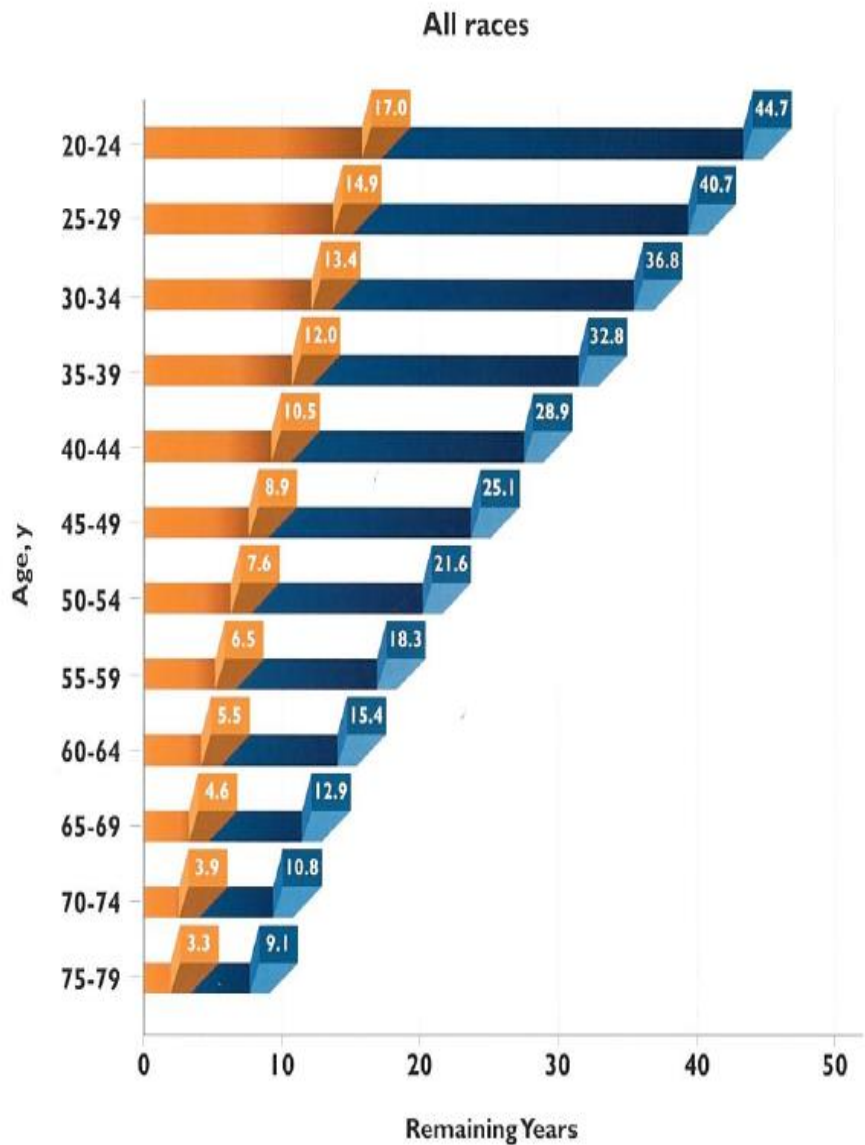
Kidney Transplantation in GA

“Kidney transplants aren’t life-saving procedures since we have dialysis”.

A kidney transplant actually confers more survival advantage than any other transplant.

Almost 5000 Georgians are waiting for this life saving transplant.





Waiting Times in Georgia

O = 10 yrs

A = 10 yrs

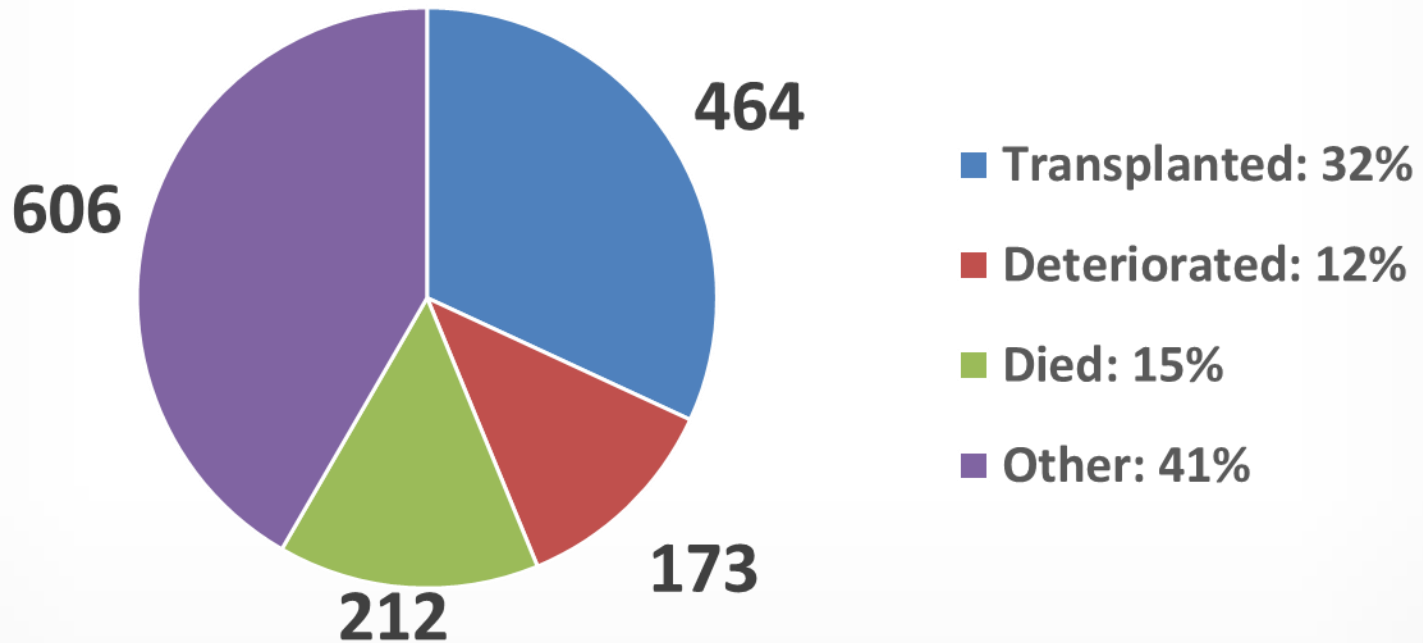
B = 8 yrs

AB = 6 yrs



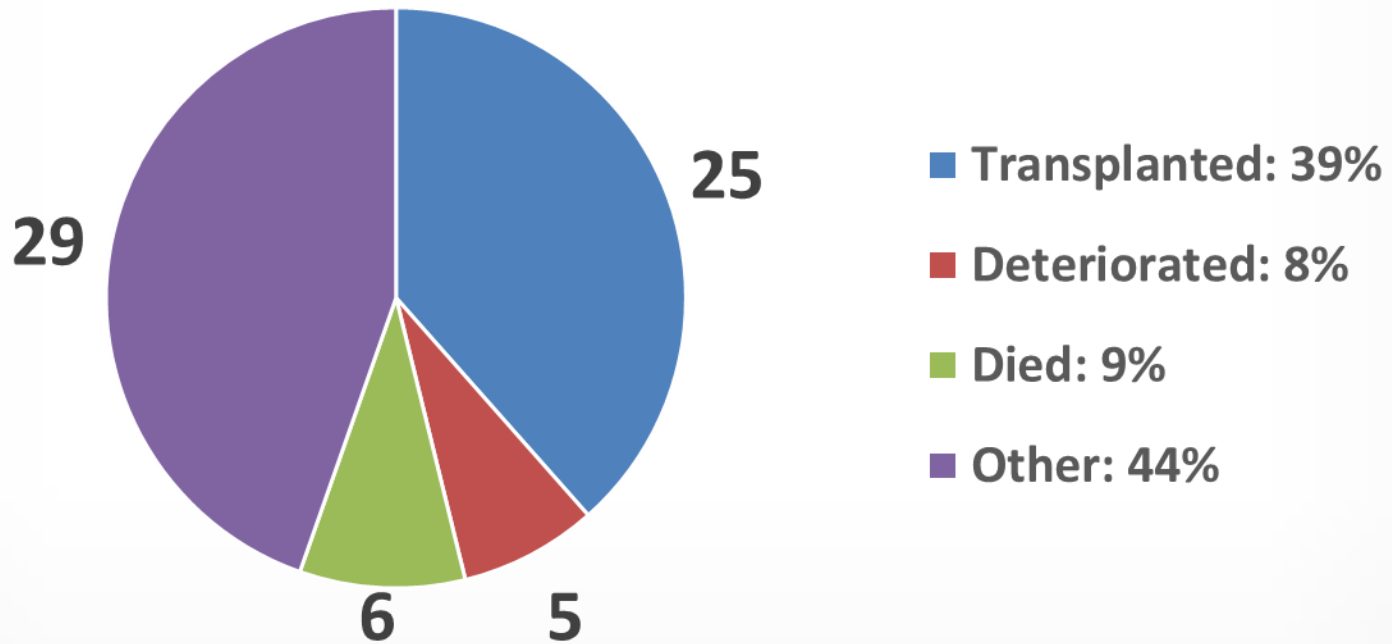
Kidney Transplantation in GA, 2017

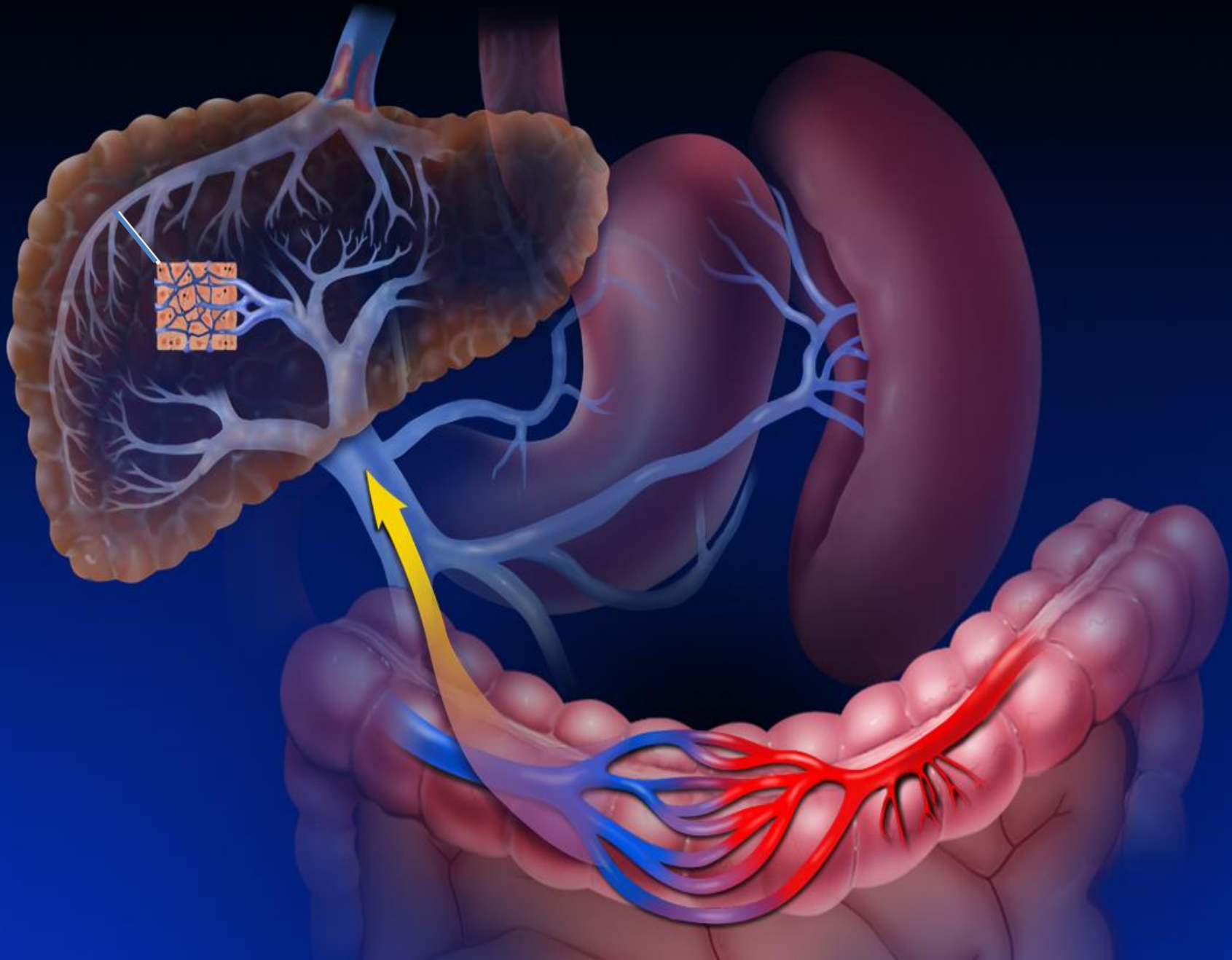
Adults Removed From Georgia's Kidney Transplant Waiting List



KP/Pancreas Transplantation in GA, 2017

Adults Removed From Georgia's KP/Pancreas Transplant Waiting List





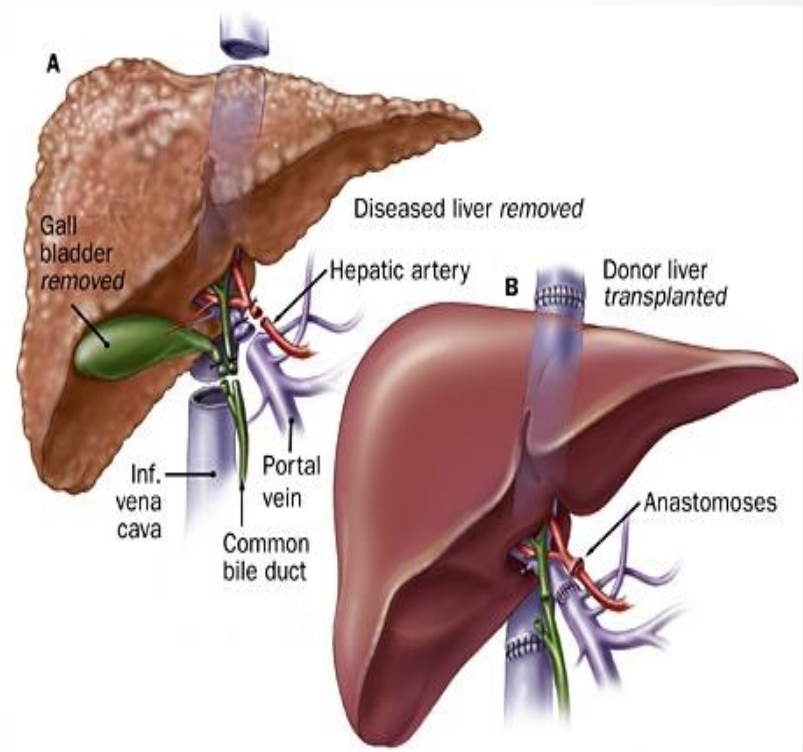


MELD SCORE (Model for End stage Liver Disease)

INR, Cr, Tot Bilirubin, Na

- MELD 6: 97% one year survival without transplant
- MELD 28: median survival 3 months
- MELD 40: median survival 12 days

**Liver Transplantation:
median survival 12 years**



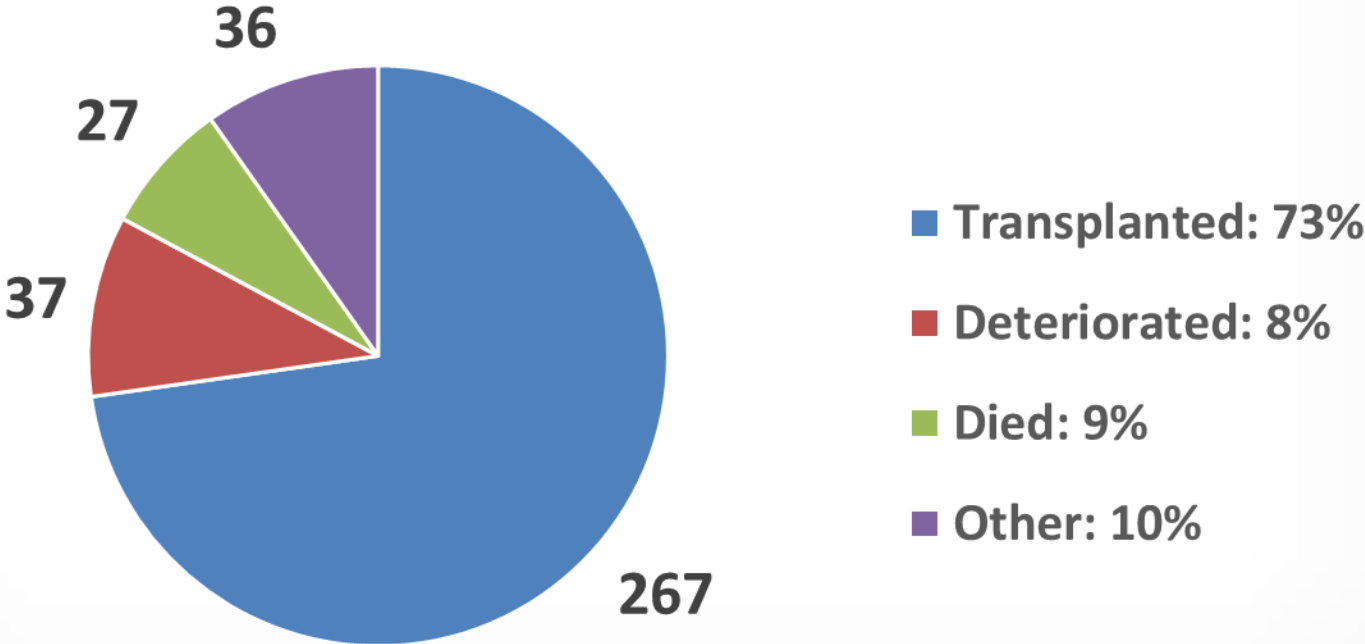


12 months
later.....



Liver Transplantation in GA, 2017

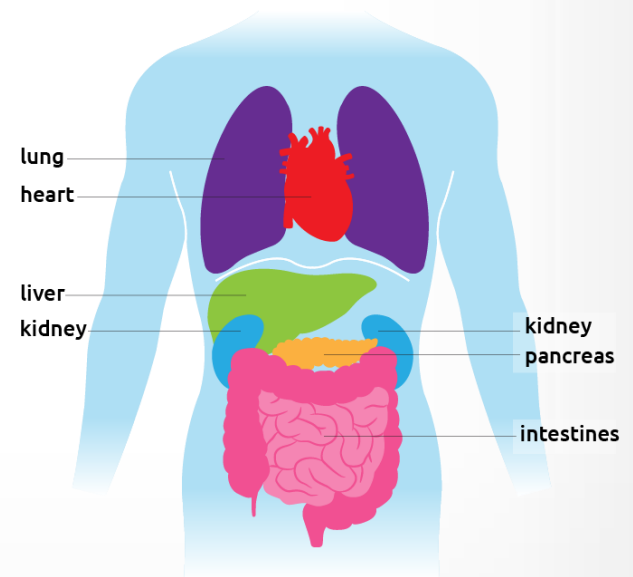
Adults Removed From Georgia's Liver Transplant Waiting List



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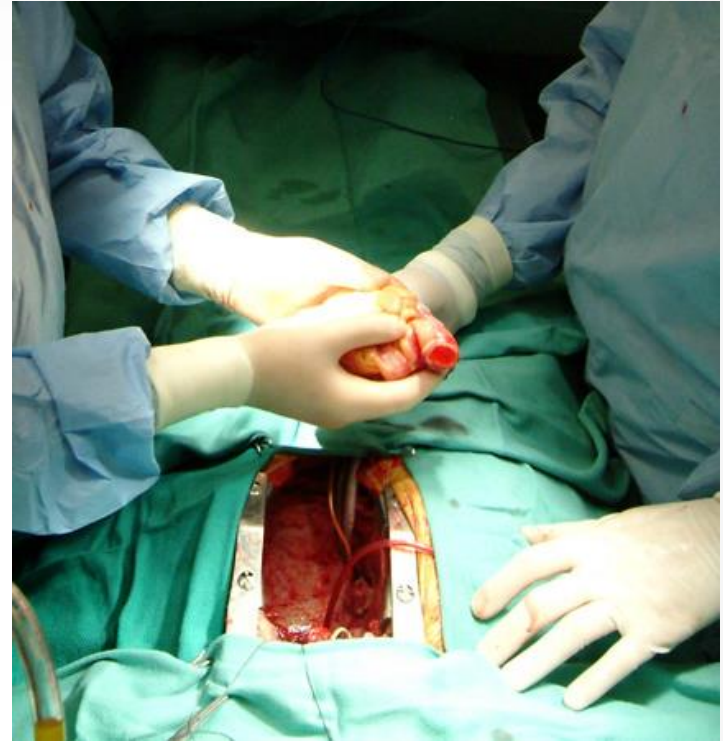
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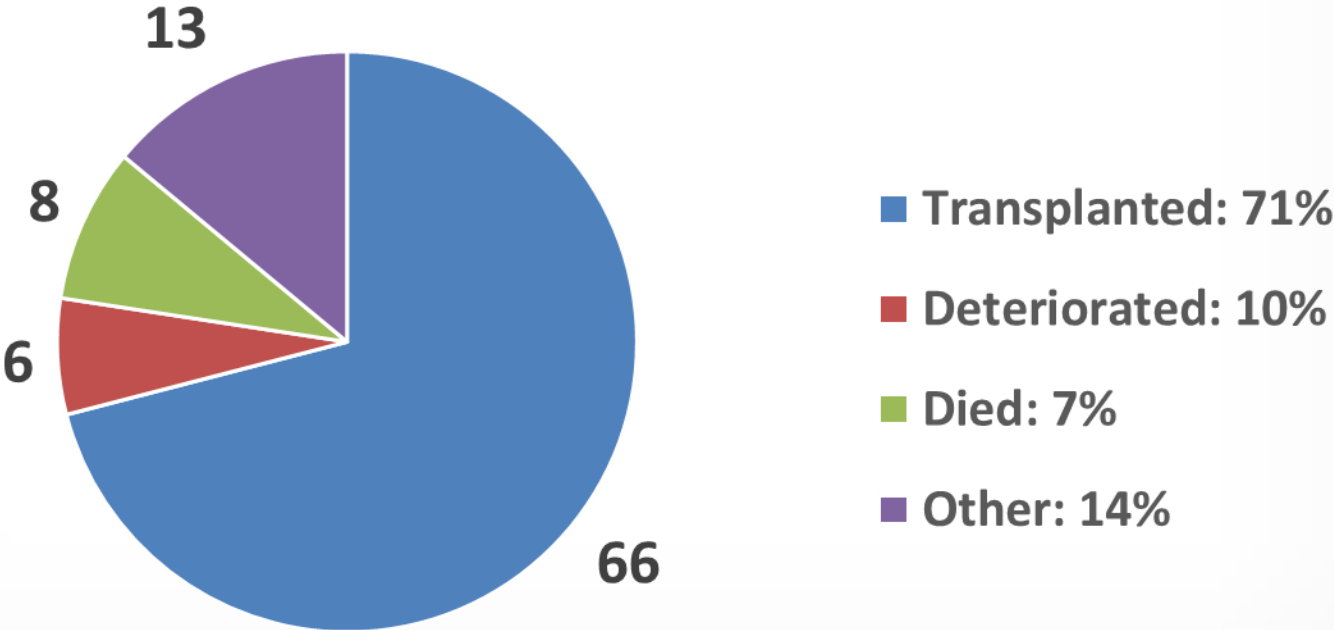
Heart Transplantation Benefit

- This is a moving target thanks to rapid improvement in VAD techniques.
- 84.5% one year survival
- 74% three year survival
- Median survival: 12 years
- 21% twenty year survival



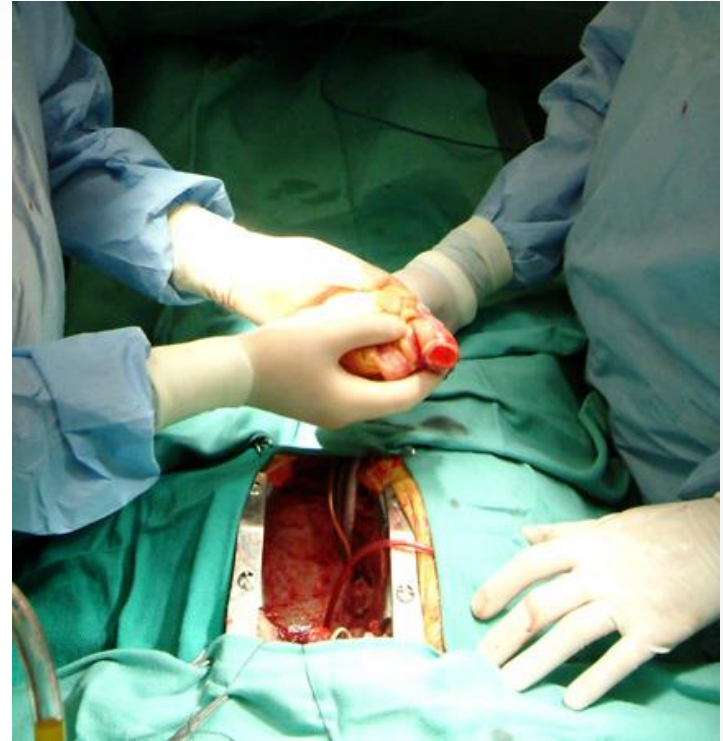
Heart Transplantation in Georgia

Adults Removed From Georgia's Heart Transplant Waiting List



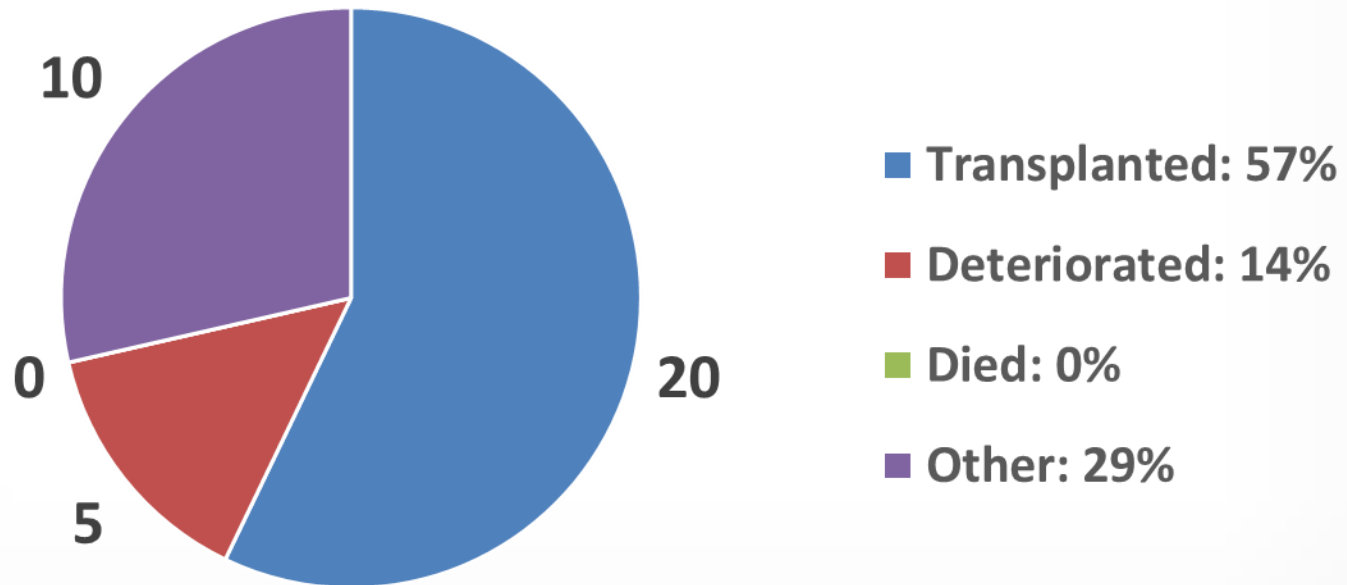
Lung Transplantation Benefit

- Survival post lung transplant:
 - 89% @ 3 months
 - 80% @ one year
 - 65% @ three years
- Median survival 5.8 years (lowest of solid organ transplants)
 - confers a significant survival advantage, especially in cystic fibrosis and interstitial pulmonary fibrosis recipients



Lung Transplantation in Georgia

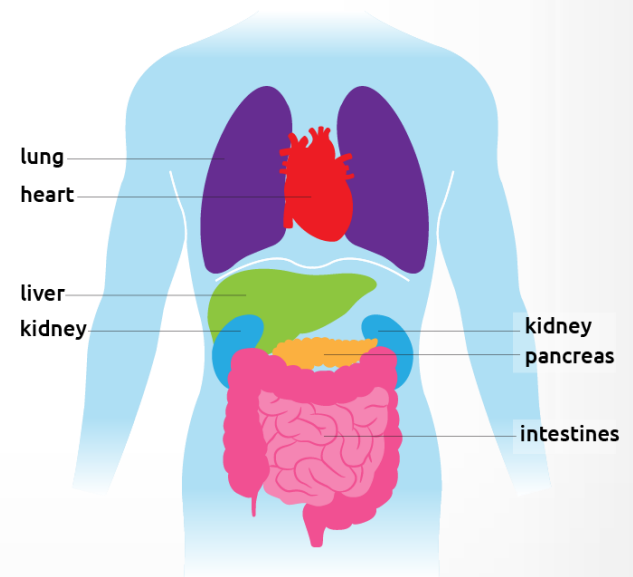
Adults Removed From Georgia's Lung Transplant Waiting List



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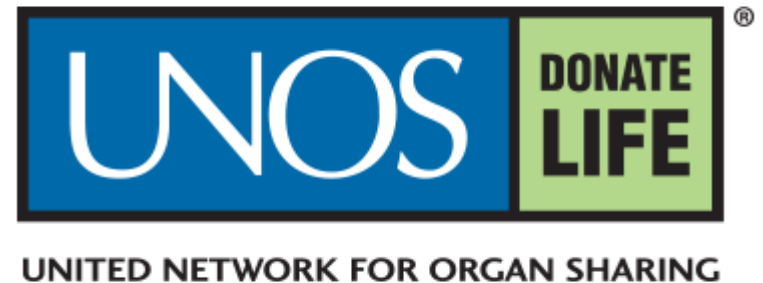
UNOS: United Network for Organ Sharing

Transplant centers and OPOs
are members

Incorporated in March 1984

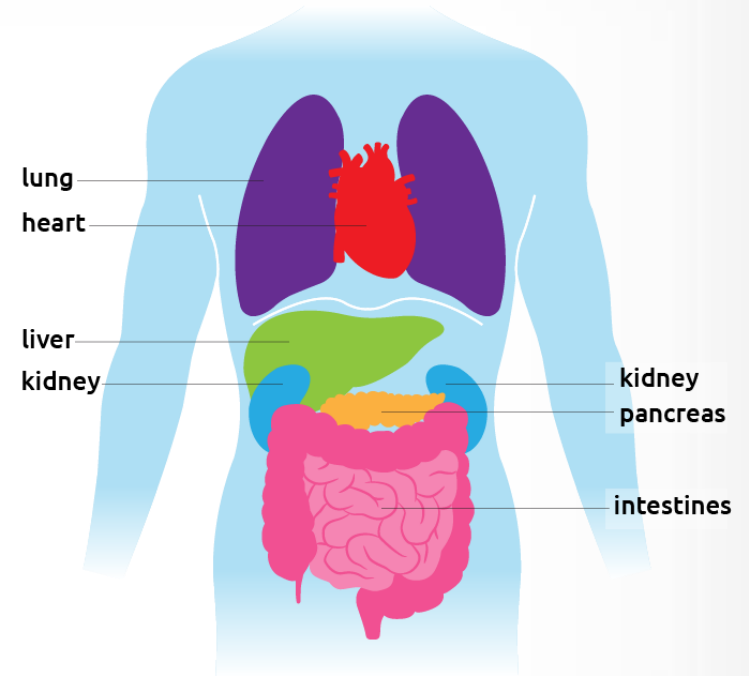
Federal contract regulatory
agency

All donors and recipients are
registered



How does UNOS allocate organs?

Geographic logistics
Time waiting on the list
Severity of illness
ABO match
Kidney – HLA match
Size match
Age



Lifelink: Georgia's OPO

- Organ Procurement Organization (OPO)
- Non-profit
- The link between potential donors and patients awaiting transplants
- Federally designated service area
- Certified and regulated by CMS
- 58 OPOs in the US



Clinical Triggers to call Lifelink

Intubated with ...

- Coma
- Stroke
- Hypoxia
- Brain tumor
- Cerebral injury
- Near-drowning
- Cerebral edema
- Cerebral hemorrhage

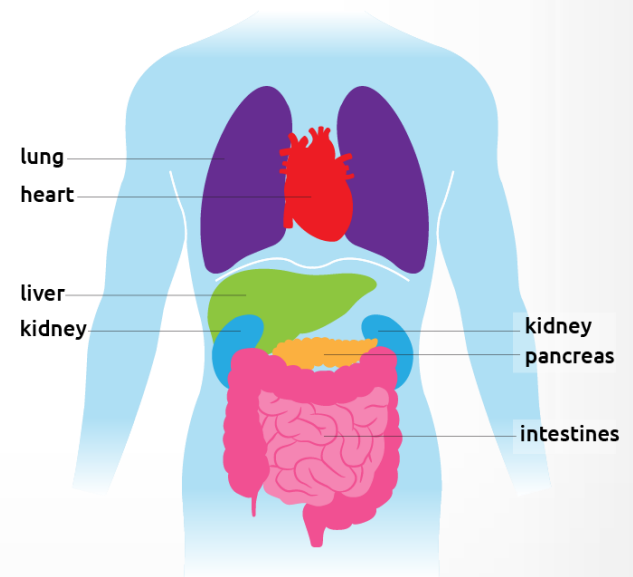
AND any of the following ...

- GCS ≤ 5 , not sedated
- Unresponsive or posturing
- No cough or gag
- No spontaneous respirations
- Discussion of DNR or withdrawal of support
- Referral to palliative care or hospice

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Donation after Brain Death (DBD)

- Devastating neurological injury
- Patient is pronounced brain dead
- Ventilator support continues
- Organs are evaluated and placed
- Procurement

Donation after Cardiac Death (DCD)

- Devastating neurological injury
- Patient does not meet criteria for brain death
- Family makes decision to withdraw life sustaining therapies
- Organs are evaluated and placed prior to withdraw
- Withdrawal occurs and rapid procurement of organs if death occurs in appropriate timeframe

Prerequisites to a brain death examination

- Clinical or neuro-imaging evidence of acute CNS catastrophe
- Normal serum electrolytes (sodium, potassium, glucose)
- Serum pH 7.35 – 7.45
- Appropriate length of time off sedatives
- Core temperature $\geq 36^{\circ}\text{C}$
- Hemodynamically stable \pm vasopressors
- Urine toxicology screen

Clinical Brain Death Exam

- Response to verbal stimuli absent
- Pupils nonreactive to light
- Corneal reflexes absent
- Oculocephalic reflex absent (Doll's eyes)
- Oculovestibular reflex absent (cold calorics)
- Gag/cough reflex absent
- Motor response to noxious stimulation absent

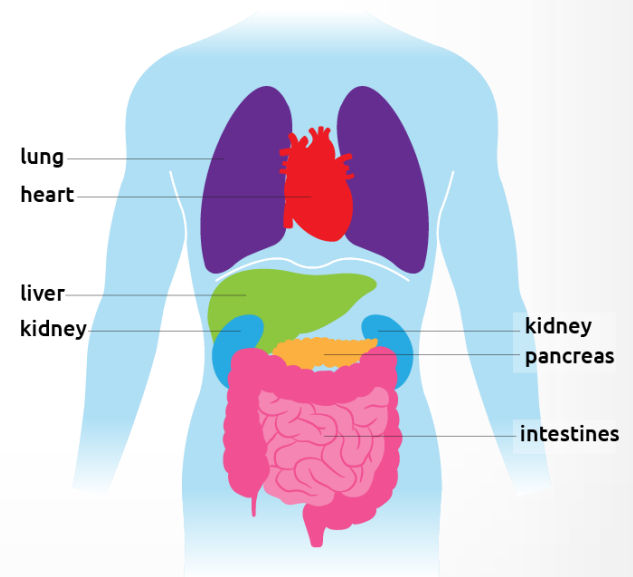
Apnea Test

- Preoxygenate
- PaCO₂ 35 – 45
- Disconnect from ventilator, high flow O₂
- Watch patient closely for signs of respiratory effort
- 1 L fluid bolus ± vasopressors
- Draw ABG at 10 minutes
- If PaCO₂ ≥ 60 or increases ≥ 20 from baseline, then test consistent with brain death

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DCD: Donation after Cardiac Death

- Athens Regional DCD policy approved in April, 2018: two so far!
- Family has elected to withdraw care and wants to honor the patient's wish to be an organ donor
- Organs are surgically recovered following withdrawal of support and subsequent death based on “irreversible cessation of circulatory and respiratory functions”

Who are candidates for DCD?

#1. Do not meet the criteria for brain death

#2. No chance of survival off the ventilator

Patients *with* severe neurological injury

- ICH
- CVA
- Anoxia
- TBI

Patients *without* neurological injury

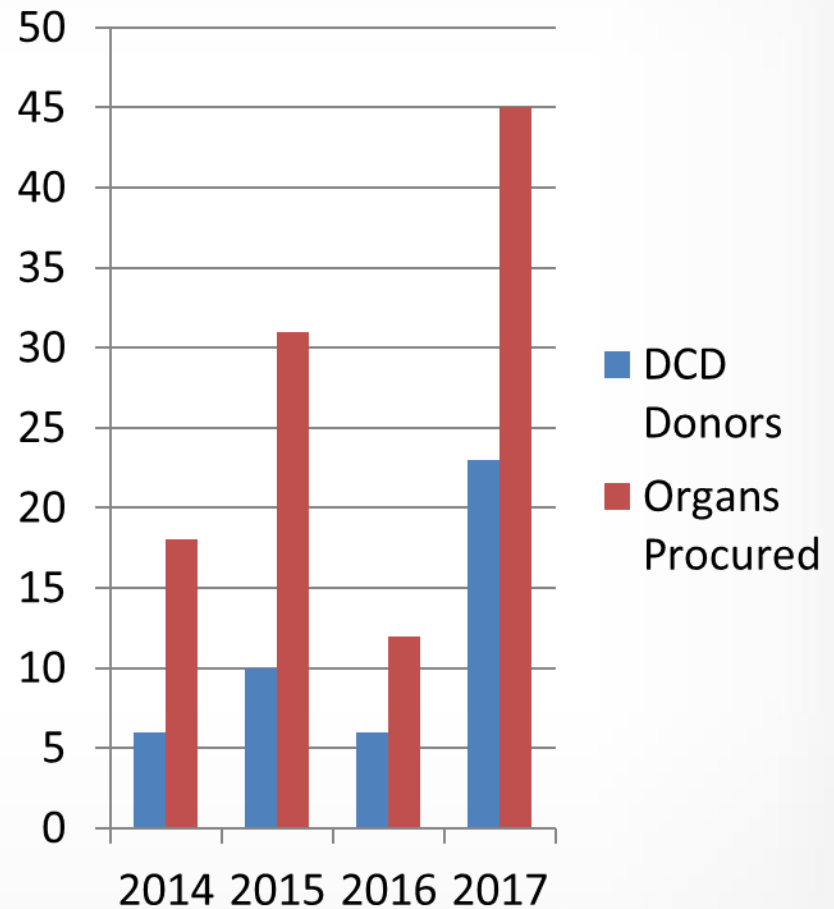
- Degenerative neuromuscular diseases
- End-state cardiopulmonary diseases
- High spinal cord injury

DCD Process at PAR

- Patient taken to OR
- Support withdrawn
- Loss of circulation (including PEA!)
- Determination of death
 - No response to tactile or verbal stimulation
 - Apnea
 - Absence of circulation (including PEA!) for 5 minutes
- After 5 minutes, transplant team takes over

LifeLink's DCD History

- We are pursuing more DCD cases
- Most hospitals have adopted DCD policies
- DCD is another pathway to donation for patients who cannot be pronounced brain dead
- 2018: 45 DCD donors!!!



Georgia Transplantation



Questions?



Aiden, liver recipient