

Abdominal Transplantation: Innovations and Emerging Trends

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Objectives for Today

- Learn every aspect of liver, pancreas and kidney organ transplantation
- Learn to how to perform the actual surgery
- Learn to how to speak Sanskrit



Top 10 List - 2018

Emerging Topics in Transplantation

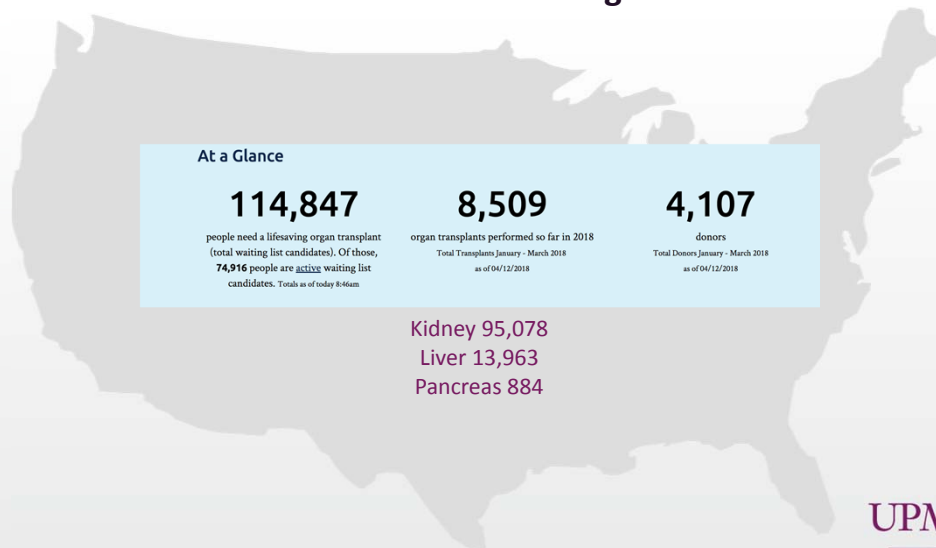
- Organ Distribution
- Liver Non-DSA Allocation
- HCV+ transplantation
- The Artificial Kidney
- Machine Pump Perfusion
- Xenotransplantation
- Increasing Live Donation
- Hope Trial



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Based on OPTN Data as of 4/12/2018

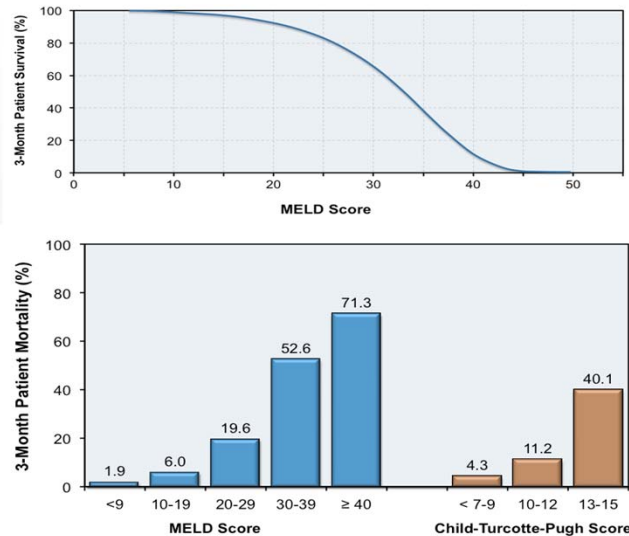
UNOS Patient Waiting List



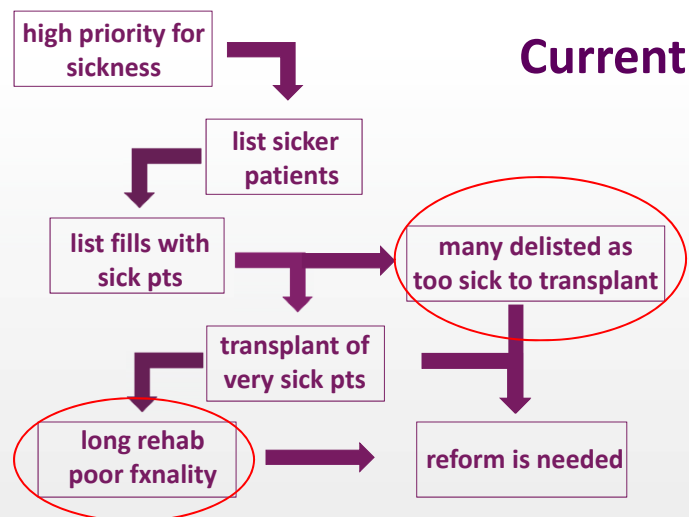
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MELD Scoring System

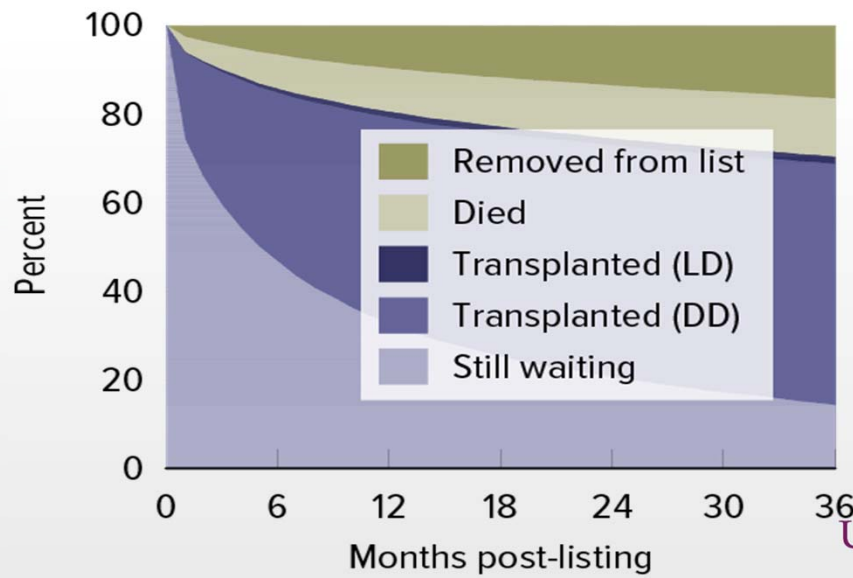
- 2002
- Prioritizing pts for LT
- TB, INR and creatinine
- Predictor of mortality
 - 3 month
 - Chronic, viral and ETOH
 - HCC – no predictive power



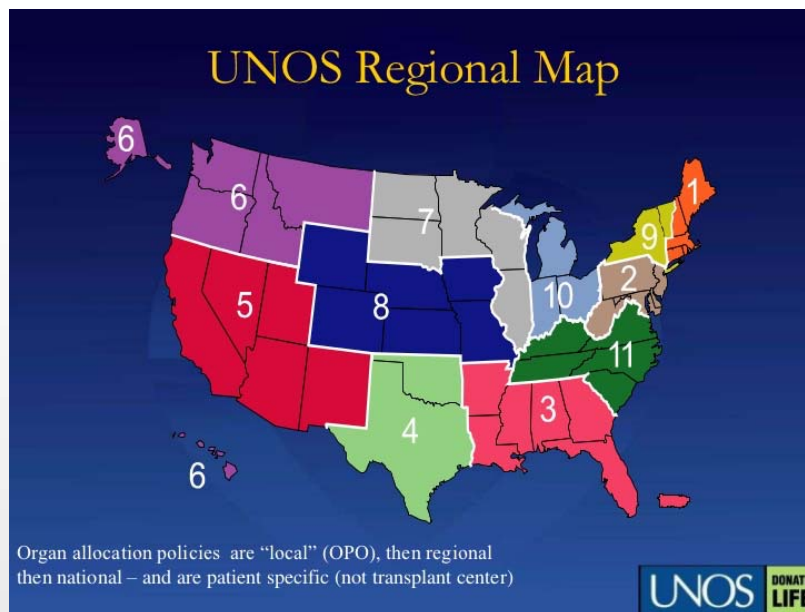
Liver Transplant Allocation Today



Liver Transplant Waitlist Outcomes



Where Do I Live – Region 2



Region 2

(Your House – Get to Know It)

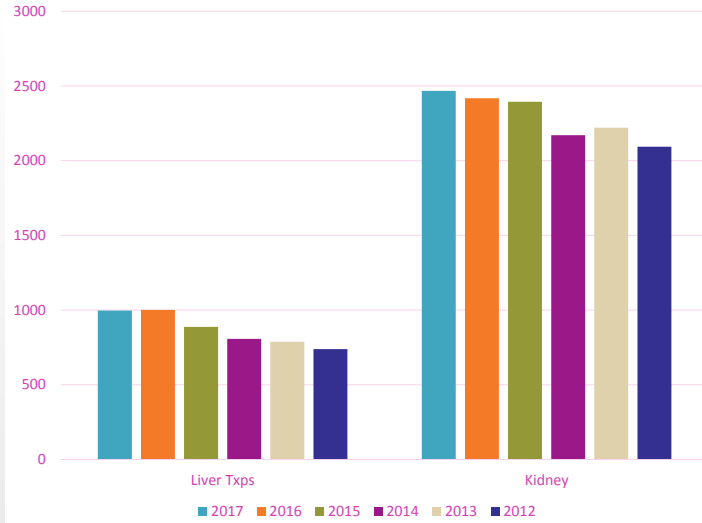


Region 2

State	OPO	TXC
Delaware	0	2
Dist. of Columbia	0	4
Maryland	1	3
New Jersey	1	6
Pennsylvania	2	18
Virginia	1	1
West Virginia	0	1

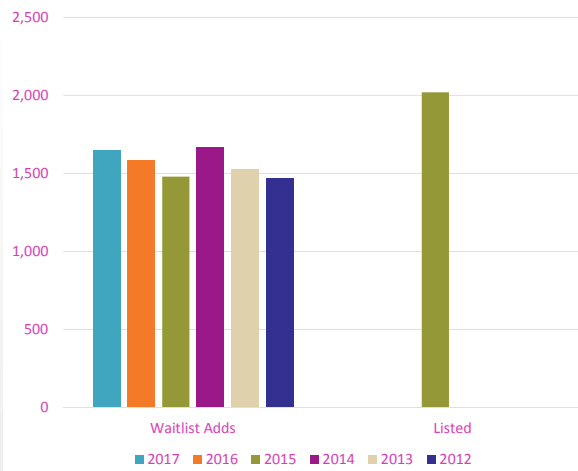
OPO : Organ Procurement Org.
TXC : Transplant Center

Number of Transplants

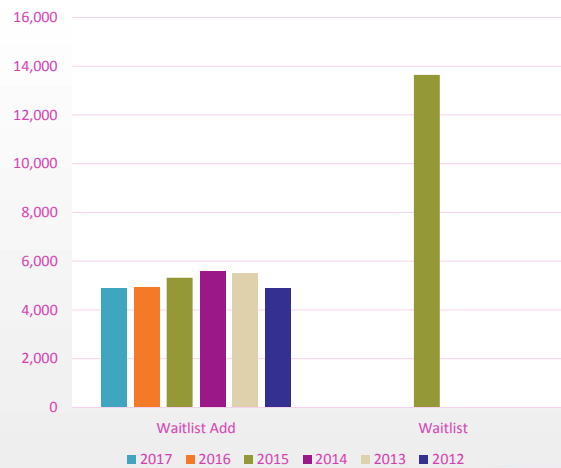


Region 2: Waitlist Additions and Listed Patients

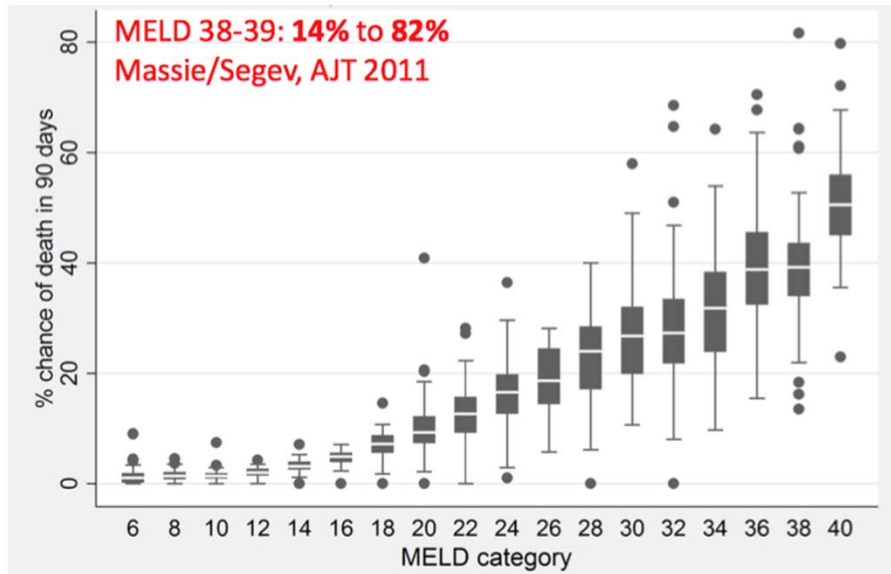
Liver Waitlist Additions



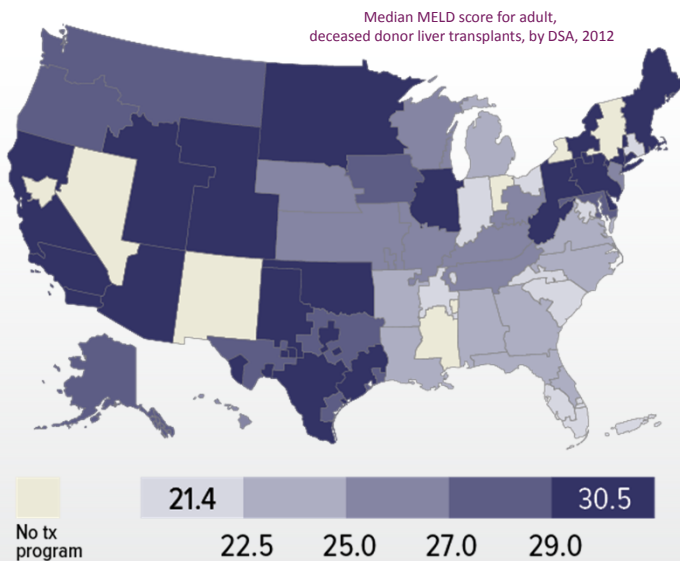
Kidney Waitlist Additions



Motivation: Death Rates, by OPO



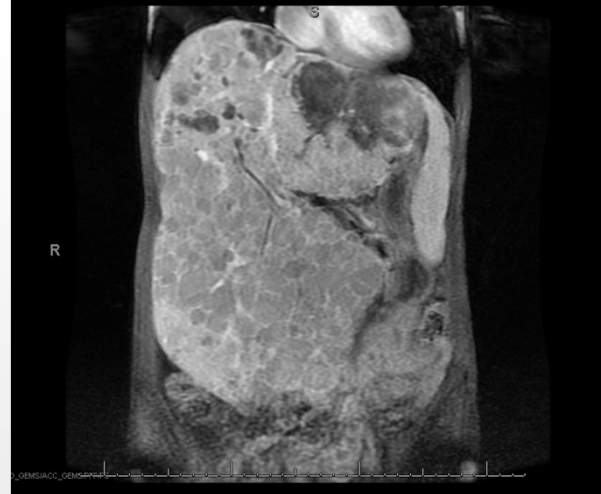
Expanding the Liver and Kidney Donor Pool



- Extended Criteria Organs
 - Increased donor age
 - Increased steatosis
- Longer CIT
- DCD
- HCV positivity
- Living Donor

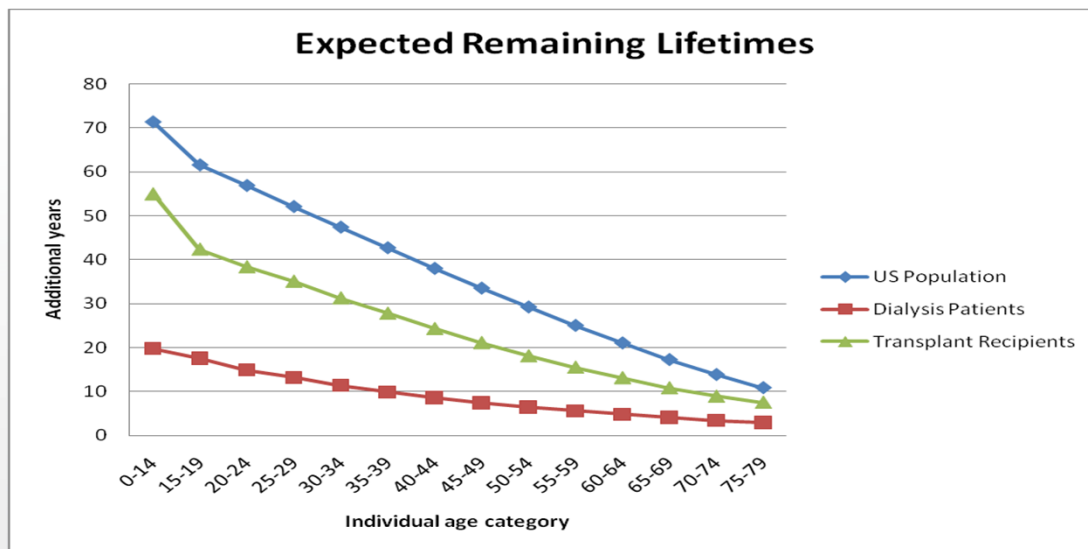
Rationale for Liver Transplantation

- Treats lesion and disease
 - Most HCC multifocal
 - Oncologically margins
- Treats underlying disease
 - Cirrhosis
 - Restores portal pressure
 - Restores hepatic function



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Is Kidney Transplantation is better than long-term dialysis?



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UNET Match Run List

Seq#	Center	Name	SSN	Age	LI seg	Donor Weight (lbs)		Score	Other Organs
						Min	Max		
2	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	40	Y	40	440	38.0000	
3	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	64	N	44	441	38.0000	KI
OPO LI MELD/PELD = 37 - Adult and Pediatric Age 0-17									
Regional LI MELD/PELD = 37 - Adult and Pediatric Age 0-17									
Seq#	Center	Name	SSN	Age	LI seg	Donor Weight (lbs)		Score	Other Organs
						Min	Max		
4	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	63	Y	40	440	37.0000	
OPO LI MELD/PELD = 36 - Adult and Pediatric Age 0-17									
Regional LI MELD/PELD = 36 - Adult and Pediatric Age 0-17									
Seq#	Center	Name	SSN	Age	LI seg	Donor Weight (lbs)		Score	Other Organs
						Min	Max		
5	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	53	Y	40	441	36.0000	KI
OPO LI MELD/PELD = 35 - Adult and Pediatric Age 0-17									
Regional LI MELD/PELD = 35 - Adult and Pediatric Age 0-17									
OPO LI MELD/PELD >= 15 and <= 34 - Adult and Pediatric Age 0-17									
Seq#	Center	Name	SSN	Age	LI seg	Donor Weight (lbs)		Score	Other Organs
						Min	Max		
6	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	61	Y	40	440	31.0000	
7	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	50	Y	40	440	29.0000	
8	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	67	Y	40	440	28.0000	
9	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	49	Y	40	440	28.0000	
10	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	64	Y	40	440	28.0000	
11	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	47	Y	40	440	27.0000	
12	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	60	Y	40	440	27.0000	
13	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	53	Y	40	440	25.0000	
14	xxxx,xxx	xxx, xxx	xxx,xx,xxxx	37	Y	40	440	24.0000	

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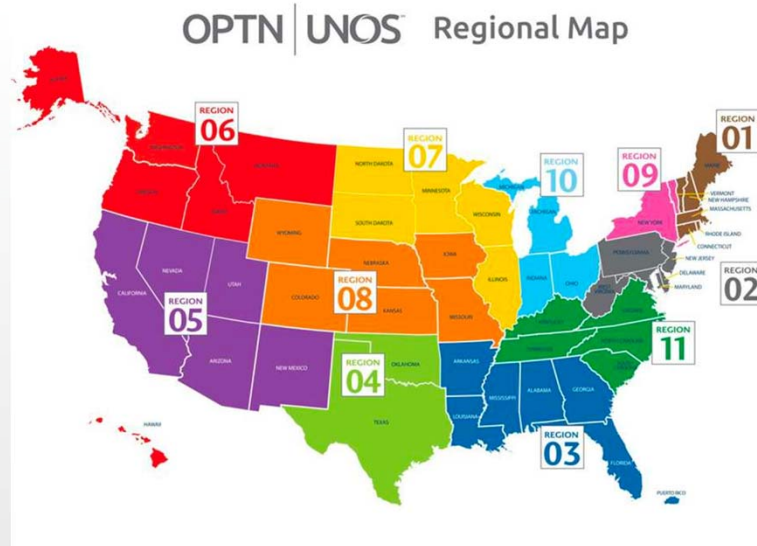
Dept of Health and Human Services (DHHS) The Final Rule

- Issued in Mar 2000
 - Replaced local and regional organ allocation
 - Gave DHHS – not medical community – control of the organ allocation
 - Lawsuits by UW, Oregon Health Sciences and State of NJ
- Amended OPTN Final Rule
 - "organs should be distributed over as broad a geographic area as feasible" and considers the urgency of a recipient patient's need for an organ transplantation
 - policies "shall not be based on the candidate's place of residence or place of listing, except to the extent required"

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Liver Distribution Now and in the Future

- Directive from the HHS Secretary
 - Liver and Intestine Committee - no DSA and Region
 - Proposal
 - No DSA and region in liver allocation
 - Allocate 150m, 250m and 500m from donor hospital



Proposal – Available for Public Comment 10/8/2018

Table 3: Allocation of Livers from Non-DCD Deceased Donors at Least 18 Years Old and Less than 70 Years Old

Classification	Candidates that are within this proximity of the donor hospital:	And are:
1	500nm	Adult or pediatric status 1A
2	500nm	Pediatric status 1B
3	250nm	MELD or PELD of at least [35/32]
4	150nm	MELD or PELD of at least 15
5	250nm	MELD or PELD of at least 15
6	500nm	MELD or PELD of at least 15
7	National	Adult or Pediatric Status 1A
8	National	Pediatric Status 1B
9	National	MELD or PELD of at least 15
10	150nm	MELD or PELD less than 15
11	250nm	MELD or PELD less than 15
12	National	MELD or PELD less than 15

Proposal – Available for Public Comment 10/8/2018

Table 4: Overview of the SRTR Modeling Report

Scenario	Variance in Median Allocation MELD/PELD at Transplant	Transplant Count	Median Transport Time (hours)	Median Transport Distance (miles)	Percent of Organs Flown
Current	9.97	6651	1.7	88.5	50.7
2017 Board Approved	7.41	6643	1.7	100.4	54.4
Acuity 250+500	4.33	6594	1.9	183.5	71.4
Acuity 300+600	4.07	6583	2	211.3	74
Broader 2-Circle MELD 35	6.74	6620	1.8	107.7	58.4
Broader 2-Circle MELD 32	6.54	6616	1.8	117.1	60.8

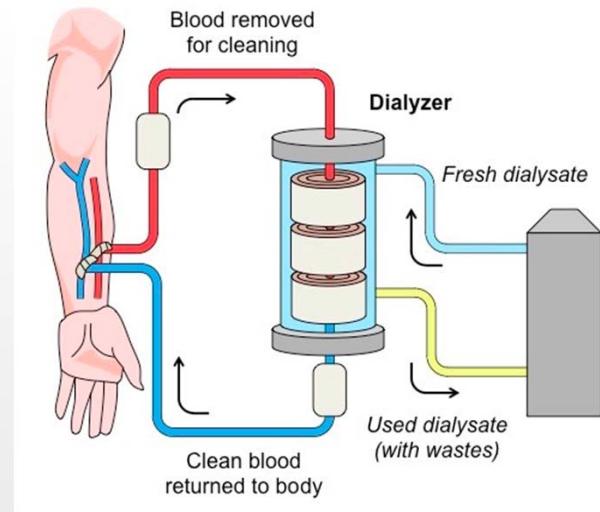
Liver Allocation – Engage, Inform and Contribute



Artificial Kidneys

Downside of Center HD

- NEJM 2010 Home vs Center
 - Better QOL
 - HTN/anemia
- High Cost of ESRD
 - \$72,000/yr
- 1972 40% - Home, 2009 <5%
- Significant Pt Burden
 - 6hrs – 3x/wk
- Facility waste and cost



Artificial Kidneys

Barriers to Portability

- Package Size
 - HD filter is large
- Power
 - Energy intensive
- Water
 - 140L of dialysate

AWAK GIVING YOUR LIFE BACK!

- <2 kg, ultra-portable, APD on-the-go
- Bedside | Ambulatory | Wearable
- Only 2L PD solution required per day
- Single 6-8 hr therapy provides 12-16 L of total dialysate flow
- Alarms for patient safety
- Designed for simplicity and convenience

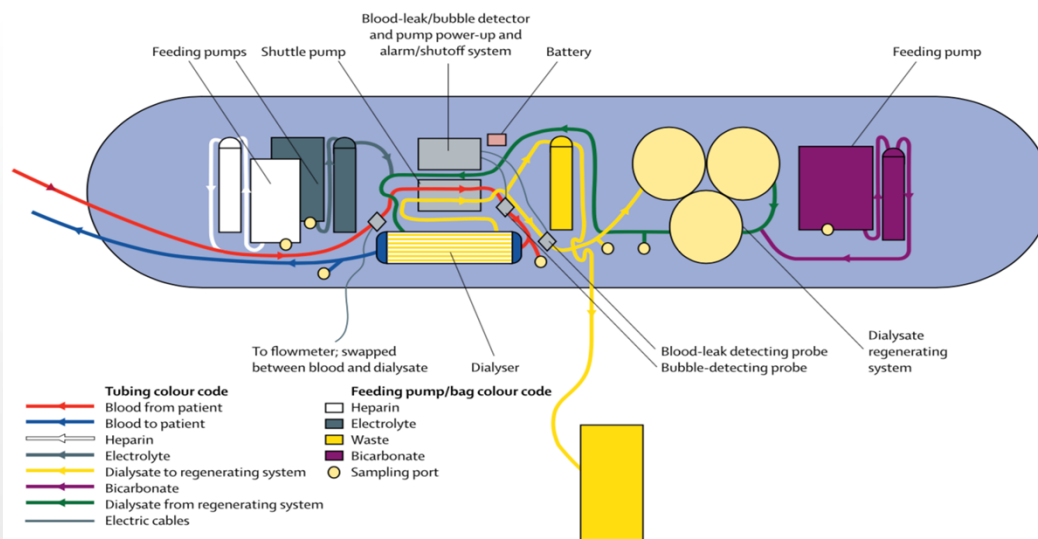
Less than 2 kg

Artificial Kidneys

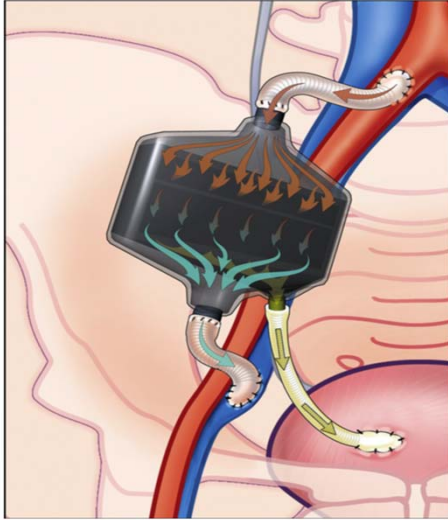
AWAK. **GIVING YOUR LIFE BACK!**



Wearable Artificial Kidney



Implantable Artificial Kidney



Challenges

- Thrombus free operation for years
- Initial surgery for implantation
- Additional surgeries for complications
- Cost and reimbursement

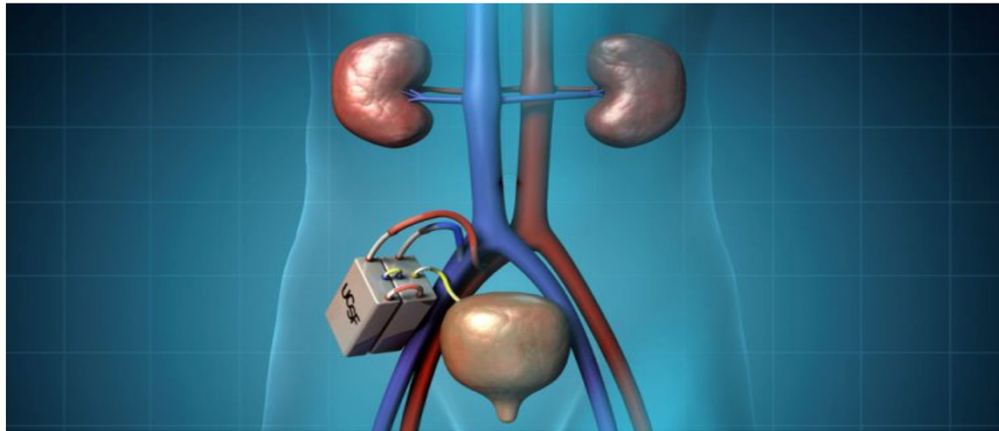
Implantable Artificial Kidney

	AWAK	WAK	IAK
Weight	<2 kg	<5 kg	~500 g
Power requirements	Battery operated	Battery operated	None, uses cardiovascular pressure and chemical energy of cellular metabolism
Fluid requirements	~2 L dialysate/treatment	6 L dialysate/treatment	No dialysate, patients drink an electrolyte-rich fluid to keep up with losses
Stage of development	Trials in human	FDA clinical trials	Animal models
Strengths	Bloodless, easily portable, high clearances	Portable, low UF rate, electrolyte balance seen in clinical use	Low burden to patient, minimal waste generation
Limitations	Frequent exchange of cartridges (every 7 h)	Clotting and bleeding issues	May require repeated invasive procedures

UCSF Bioartificial Kidney - IAK

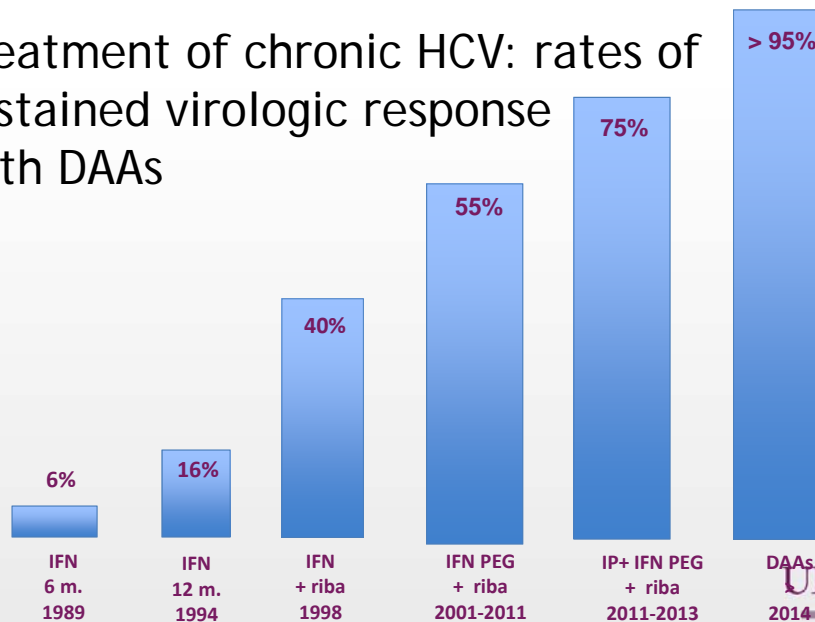
The Kidney Project

CREATING A BIOARTIFICIAL KIDNEY AS A PERMANENT SOLUTION
TO END STAGE RENAL DISEASE



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Treatment of chronic HCV: rates of
sustained virologic response
with DAAs



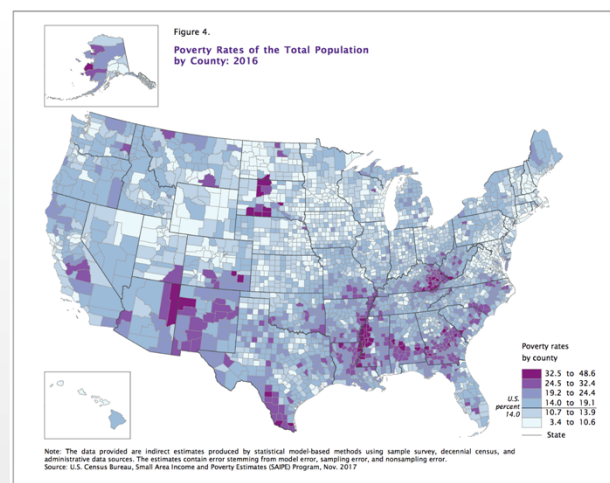
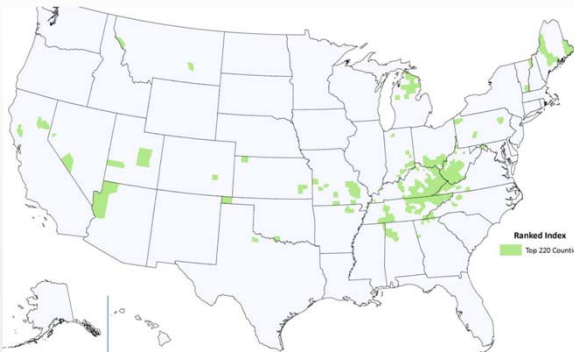
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The Changing Demographic of US HCV Infection

- Prior to 2010
 - AA account for 25% of chronic HCV in the US
 - American Indians and Alaskans with highest rate of new infection
- Since 2010
 - Greatest increase young, nonminority with history of opioid use
 - Age 18 to 29yrs
 - Equal male and female
 - Non-urban
 - KY, TN, VA, WV

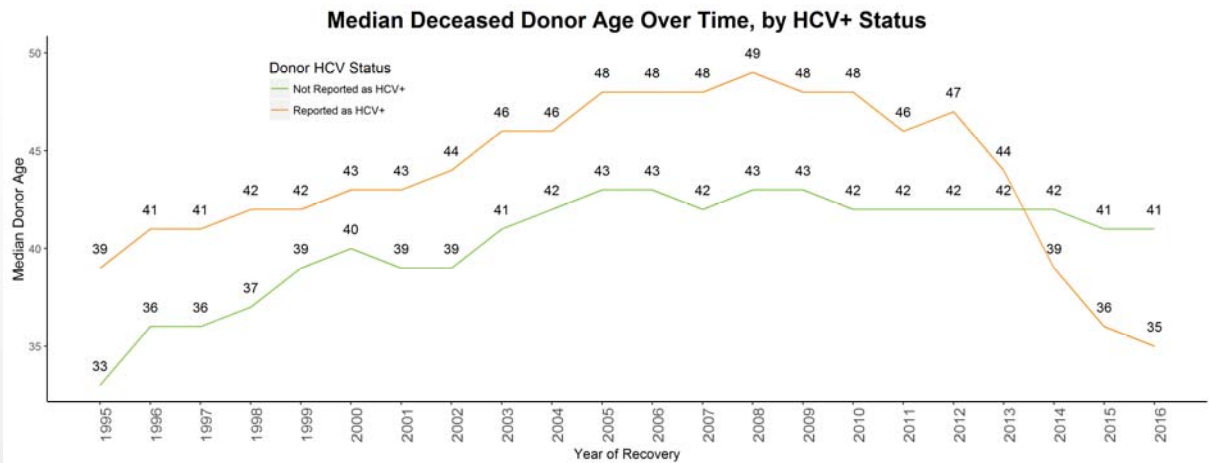
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US Counties at Risk for Acute HCV Infection



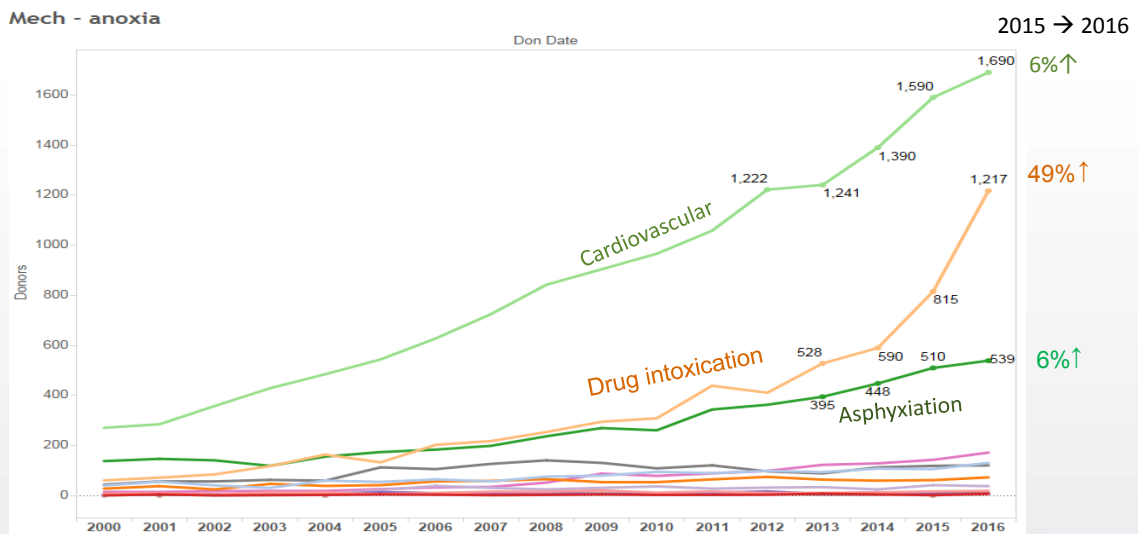
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Deceased Donors – Median Age



- Recent, sharp decline in median donor age among HCV+ donors, but not among HCV- donors.

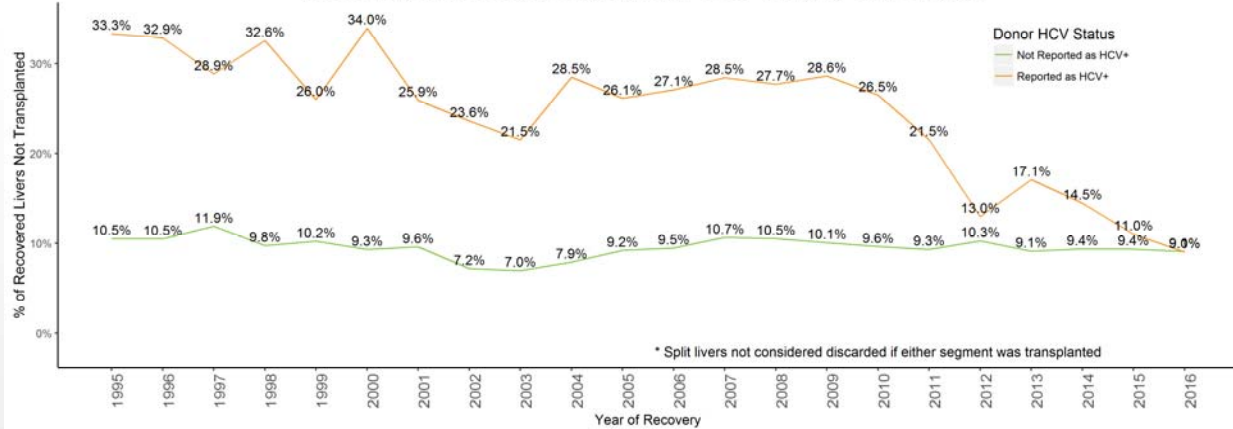
What's Driving the Increase in Actual Donors?



Among anoxia deaths, drug OD's as death mechanisms rose most sharply from 2014 to 2016, including a 49% rise last year.

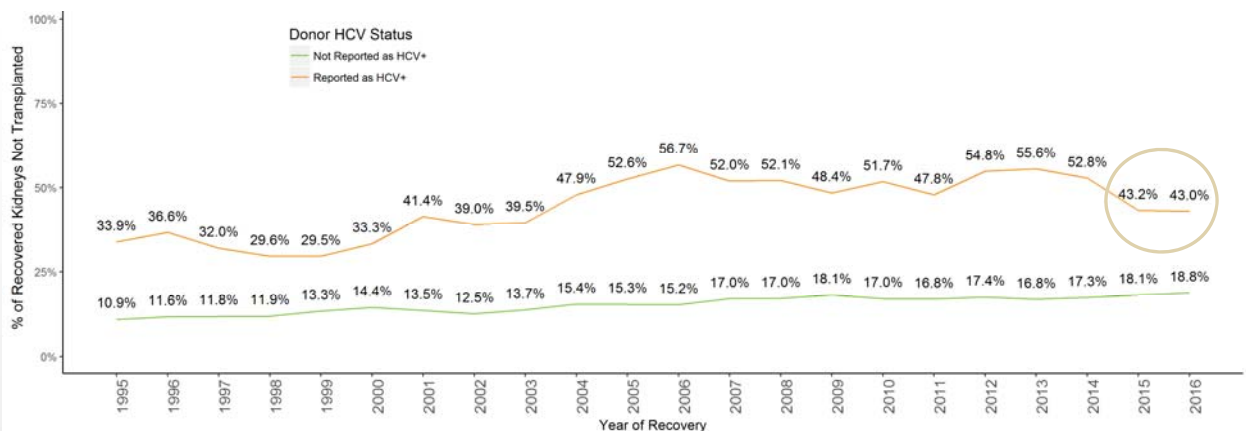
Liver Discard Rate

Deceased Donor Liver Discard Rate* Over Time, by HCV+ Status



- % of recovered kidneys from HCV+ donors that are discarded has steadily decline, despite overall liver discard rate remaining flat.

HCV+ organ utilization – kidney discard rate



Stewart, unpublished analysis, January 2017

Renal Transplant and HCV+ Organs

- HCV among US ESRD in 6-10%
- US Centers Routinely use Donor HCV+ to Recipient HCV+
- Any Center in the US Protocol
 - HCV Genotype
 - Excellent Graft/Pt outcomes
 - Current Wait time
 - 6 weeks
 - Fast-tracked if HCV+

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THINKER Trial

Transplanting HCV Infected Kidneys into Negative Kidney Recipients

Table S1: Inclusion and Exclusion Criteria for the THINKER Trial*

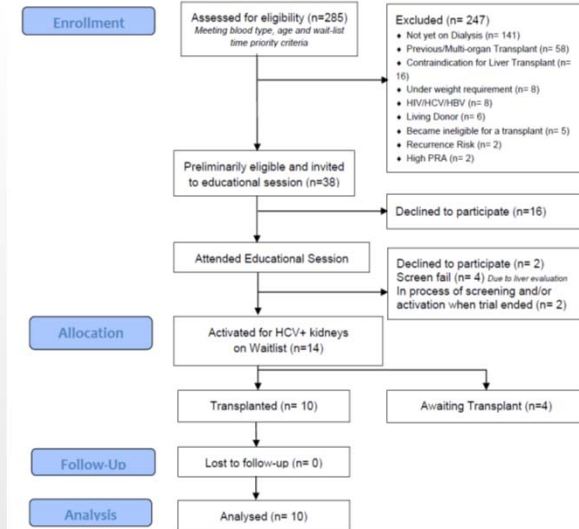
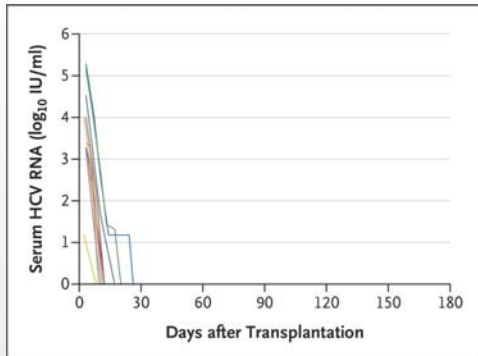
Inclusion Criteria	Exclusion Criteria
• On chronic hemodialysis or peritoneal dialysis	• Hepatocellular carcinoma
• Listed for an isolated kidney transplant with ≤548 days of accrued transplant waiting time and/or ≤548 days of dialysis time	• Patients with primary focal segmental glomerulosclerosis (FSGS), FSGS recurring after previous transplant, or disease process with increased risk of causing early graft failure
• No available living kidney donor	• HIV positive
• Blood group A, B, or O	• HCV RNA positive (can be isolated HCV antibody positive provided the subject has no history of previously treated HCV)
• Between 40-65 years of age	• Hepatitis B surface antigen positive
• Have a panel reactive antibody level ≤97%	• Any chronic liver disease (excluding non-alcoholic fatty liver disease (NAFLD) with abnormal liver enzymes
• Obtained agreement for participation from the patient's treating transplant nephrologist	• Persistently elevated liver transaminases
• No evident contraindication to liver transplantation	• Blood group AB (due to short expected waiting time on the kidney transplant waiting list)
• Able to travel to the University of Pennsylvania for routine post-transplant and study visits	• Significant hepatic fibrosis on screening elastography (≥2 fibrosis)
• Women agreed to use birth control in accordance with Mycophenolate Risk Evaluation and Mitigation Strategy (REMS) following transplant	• Known allergy or intolerance to tacrolimus that would require post-transplant administration of cyclosporine
• Men and women must agree to use at least one barrier method to prevent any secretion exchange	• Pregnant or nursing (lactating) women
• No active illicit substance abuse	• Waitlisted for a multi-organ transplant (e.g., pancreas-kidney)
• Weigh at least 50kg	• Cardiomyopathy (e.g., left-ventricular heart failure, pulmonary hypertension) that would preclude liver transplantation
• Able to provide informed consent	

- Safety and efficacy
- HCV Geno 1/Viremic → HCV neg pts
 - No NS5A resistance
- All treated with elbasivir-grazoprevir (Zepatier)
- ClinicalTrials.gov number, NCT02743897
- Physician led 3 step consent process
- Median waittime – 58d
- KDPI 42%
- All with detectable HCV RNA

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THINKER Trial

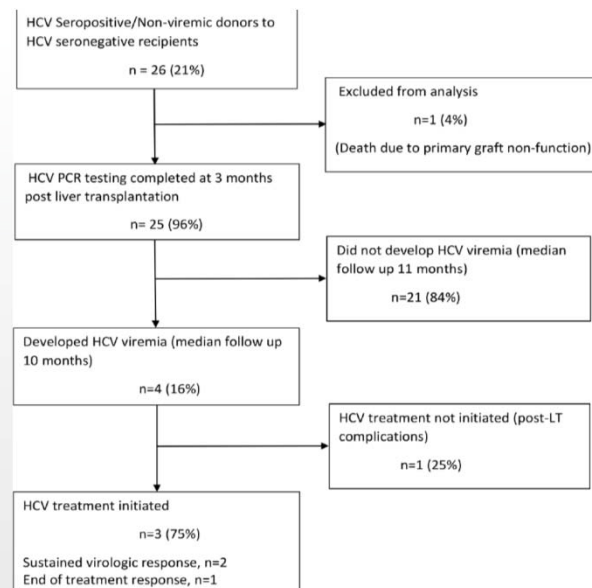
Transplanting HCV Infected Kidneys into Negative Kidney Recipients



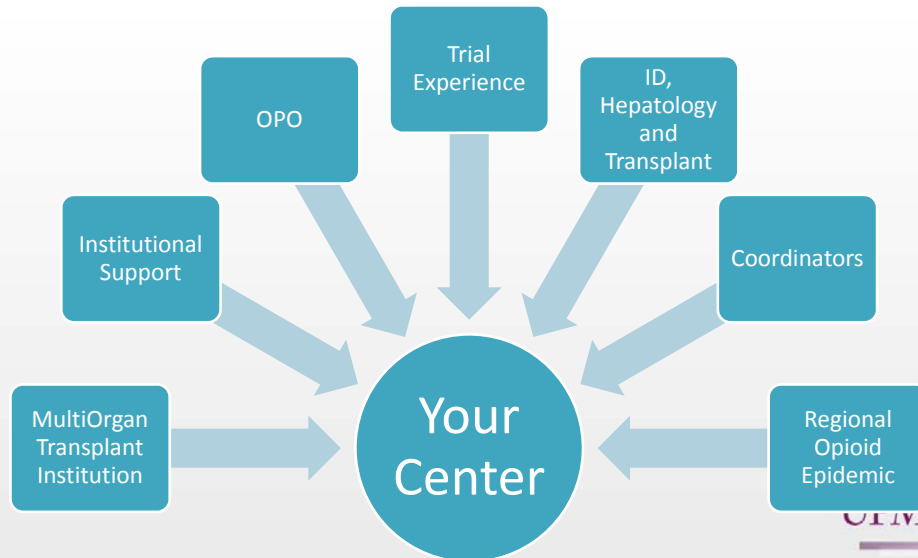
The Use of HCV Ab+/NAT- Liver Donors for Naïve Liver Recipients

- UC Med Ctr
 - 2015 – consented for a conversion of 5%
- HCV transmission
 - Eclipse period for NAT
 - Low level viremia
 - residual HCV genome is present in liver tissue or peripheral blood mononuclear cells after self or treatment induced clearance
- 1yr period – 20% of LTs were from
 - HCV Ab+/NAT- → HCV Ab- or HCV Ab+/Nonviremic
- 2SLK, 1 pt received 2X txps
- Donors

– Age	-38
– BMI	-28
– PHS Inc Risk	-71%
– HBV Core +	-20%
– Number of OPO	-12



Trial: Treatment of HCV after Transplantation of Allografts from HCV Seropositive Donors to HCV Seronegative Recipients



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Xenotransplantation – Bringing Home the Bacon

Table 1. The advantages and disadvantages of the pig as a potential source of organs and cells for humans, in contrast with those of the baboon in this role

	Baboon
Availability	Limited
Breeding potential	Poor
Period to reproductive maturity	3–5 years
Length of pregnancy	173–193 days
Number of offspring	1–2
Growth	Slow
Size of adult organs	(9 years to reach maximum size)
Cost of maintenance	Inadequate*
Anatomical similarity to humans	High
Physiological similarity to humans	Close
Relationship of immune system to humans	Close
Knowledge of tissue typing	Close
Necessity for blood type compatibility	Limited
Experience with genetic engineering	Important
Risk of transfer of infection (xenozoonosis)	None
Availability of designated pathogen-free animals	High
Public opinion	No
	Mixed

* The size of certain organs, for example, heart and liver, is much smaller than that of adult humans.

** Breeds of miniature swine are approximately 50% of the weight of domestic pigs at birth and sexual maturity, and reach a maximum weight of approximately 30% of standard breeds.



Xenotransplantation – Barriers to Success



- Ab-Dependent Complement-Mediated Rejection
 - humans develop Ab to certain carbohydrate (glycan) antigens galactose- α 1,3-galactose (Gal)
 - 2003 Gal Knockout Pig
- T Cell Mediate Ab and Cellular Response
 - Cya and FK – block signal 1
 - anti-CD154mAb, anti-CD40mAb (that block signal 2), successfully prevented a T cell response
 - Genetic engineering

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Xenotransplantation – Barriers to Success

- Coagulation Dysregulation between Pigs and Primates
 - molecular incompatibilities between the pig and primate coagulation-anticoagulation systems
 - Thrombotic microangiopathy
- Inflammatory Response
 - prolonged and persistent inflammatory response to even a small pig xenograft, for example, an artery patch,

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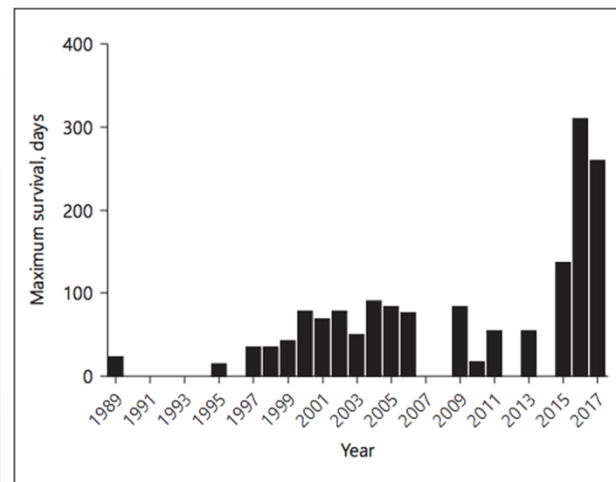


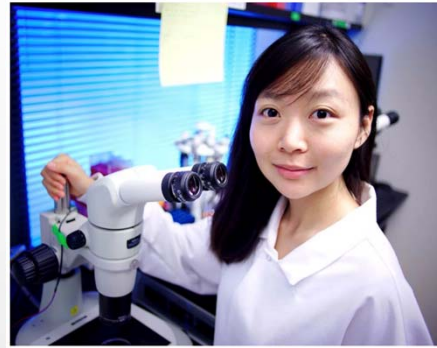
Fig. 1. Maximal pig kidney graft survival in a nonhuman primate by year. Maximum survival has increased from 22 days in 1989, to 90 days in 2004, and to >300 days in 2016.

Inactivation of porcine endogenous retrovirus in pigs using CRISPR-Cas9

Science 22 Sep 2017

- **Taking the PERVs out of Pigs**

- Porcine Endogenous Retrovirus
- inactivated PERVs in porcine primary cell line and generated PERV-inactivated pigs via somatic cell nuclear transfer
- Huge



Egenesis chief scientific officer Luhan Yang Courtesy eGenesis

- Egenesis, a startup that raised \$38 million in March, just successfully used the gene-editing tool CRISPR to knock out a key virus in piglets.

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Machine Perfusion for Liver Transplantation

- ECD Characteristics
 - Advanced donor age
 - Extended cold time
 - Steatotic grafts
 - DCD variance and complications
- Pump perfusion history
 - 1970 Starzl hypothermia and hyperbaric oxygenation
 - Logistics, financial
- Dynamic Ex Situ Graft Perfusion
 - Preservation
 - reconditioning



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A Randomized Trial of Normothermic Preservation in Liver Transplantation (Consortium for Organ Preservation in Europe)

Nature. 2018 May;557(7703):50-56

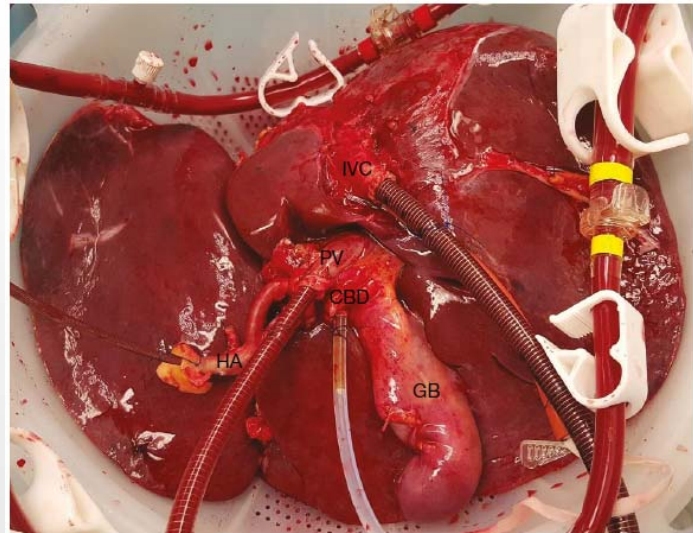
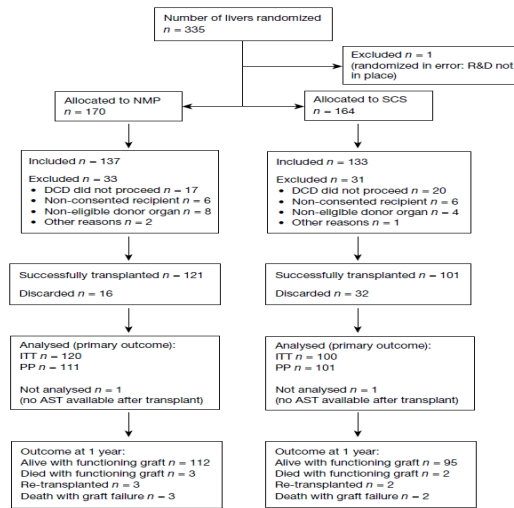


Fig. 2 | CONSORT diagram. CONSORT diagram depicting the outcome of all donor livers enrolled in the trial. ITT, intention to treat; PP, per protocol; R&D, research and development.

A Randomized Trial of Normothermic Preservation in Liver Transplantation (Consortium for Organ Preservation in Europe)

Nature. 2018 May;557(7703):50-56

Preservation details for all transplanted livers	NMP (n = 121)	SCS (n = 101)	P value ^a
Functional warm ischaemia time ^b (min) (applies to DCD livers; n = 55 (34 NMP, 21 SCS))	21 (17–25) (9–93)	16 (10–20) (2–32)	0.003
Cold ischaemia time prior to NMP (min) ^c (n = 120)	126 (106.5–143.0) (49–218)	NA	
Machine perfusion time (min) ^c (n = 120)	547.5 (372.5–710.5) (85–1,388)	NA	
Total preservation time from cross-clamp in donor to organ reperfusion in recipient (min)	714 (542–876) (258–1,527)	465 (375–575) (223–967)	0.0000
Steatosis assessed post-transplant			0.366
None or mild	91 (75.3%)	89 (88.2%)	
Moderate or severe	29 (24%)	12 (11.9%)	
Missing	1 (0.8%)		

Are You Kidding Me?!

A Randomized Trial of Normothermic Preservation in Liver Transplantation (Consortium for Organ Preservation in Europe)

Nature. 2018 May;557(7703):50-56

	NMP (n = 121) ^a	SCS (n = 101) ^a	Effect (95% CI) ^b	P value
Peak AST				
ITT ^c				
Adjusted	488.1 (408.9–582.8)	964.9 (794.5–1,172.0)	0.5 (0.4–0.7)	0.0000
Unadjusted	484.5 (406.4–577.6)	973.7 (795.2–1,192.3)	0.5 (0.4–0.6)	0.0000
Test for interaction by donor type				0.012
Subgroup analysis by donor type				
DBD	526.2 (427.3–647.9)	880.2 (708.5–1,093.5)	40.2% (19.3–55.7%)	0.0009
DCD	389.7 (278.0–546.4)	1,458.1 (944.7–2,250.5)	73.3% (53.7–84.6%)	0.0000
PP analysis	498.6 (418.8–599.4)	982.9 (810.4–1,192.2)	0.5 (0.4–0.7)	0.0000
Secondary outcomes				
Discard rates ^d	16 (11.7%)	32 (24.1%)	–12.4% (–21.4 to –3.3%)	0.008
Primary non-function ^e	1 (0.8%)	0		NA
Post-reperfusion syndrome	15 (12.4%)	3	–9.6% (–31.6 to –9.6%)	0.0002
Post-reperfusion lactate ^f	3.6 (2.6–4.2)	4		0.018
Early allograft dysfunction	12 (10.1%)	29 (29.9%)	0.263 (0.126–0.550)	0.0002

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Are You Kidding Me?!

What is Next for Liver Machine Perfusion?

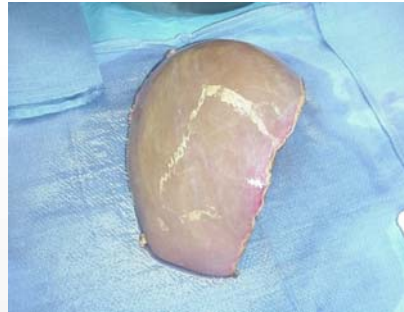
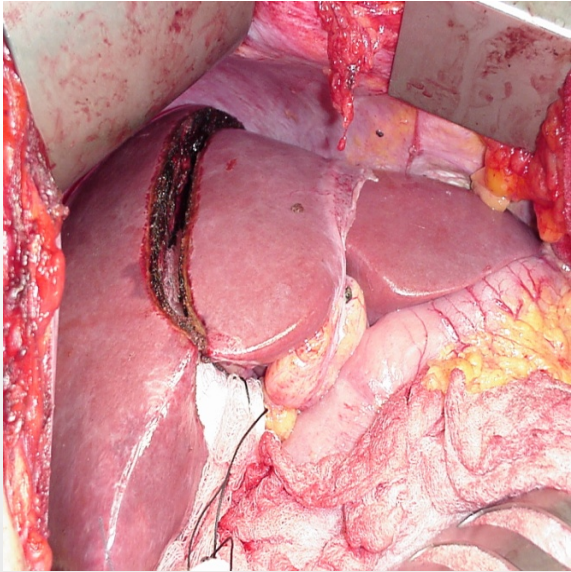
- 13 active ongoing and/or recruiting trials (US and Europe)
 - Preservation
 - Use of discards/DCD/ECD
- Wealth of data coming to a journal near you
- Benefits
 - Improved allograft function
 - Shorter LOS
 - PNF, EAD, pt/graft survival



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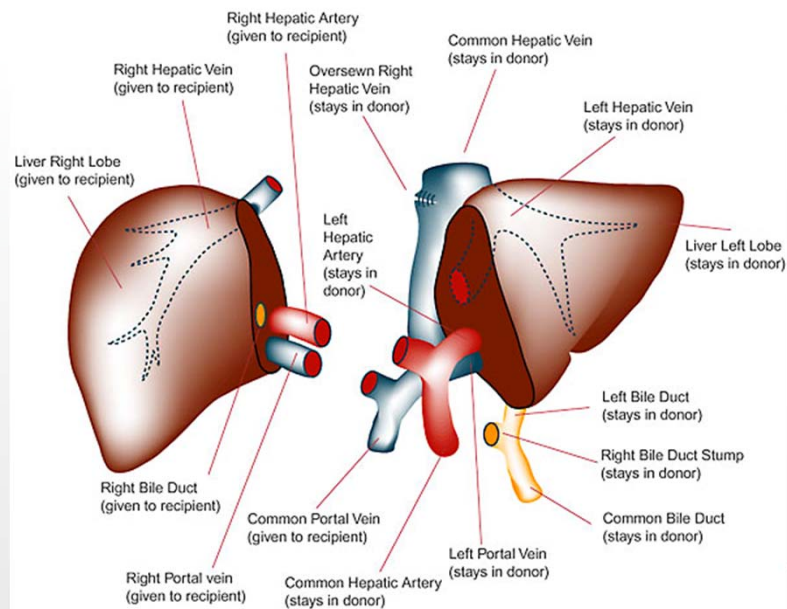
48

Adult Living Donor Liver Transplantation



MC LIFE CHANGING MEDICINE

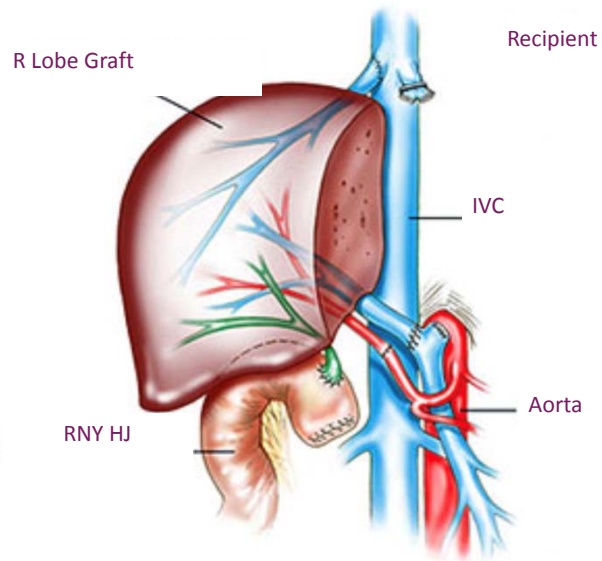
Adult LD Hepatectomy



50

JPMC LIFE CHANGING MEDICINE

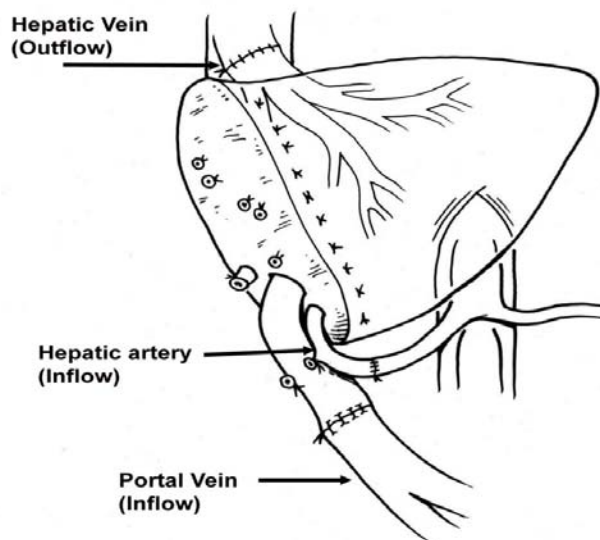
Adult LD Right Lobe Transplantation



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Pediatric Liver Donor Liver Transplant (LDLT)



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Advantages and Disadvantages of LDLT

Disadvantages

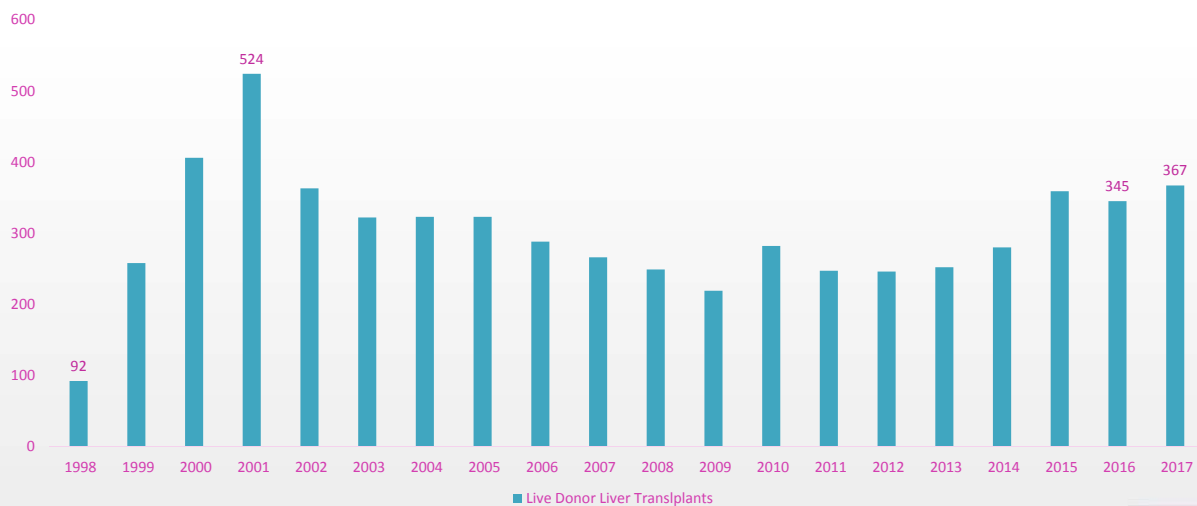
- Short-term risks to donor
- Long-term risks to donor
- Increased incidence of biliary and vascular complications
- Decreased hepatic reserve

Advantages

- Decrease waitlist mortality
- Decreased waiting time
- Transplant prior to recipient becoming critically ill
- Elective, non-emergent
- Minimal cold ischemia
- Immunologic advantage
- Adds to cadaver pool

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National Live Donor Liver Transplants Last 20 Yrs



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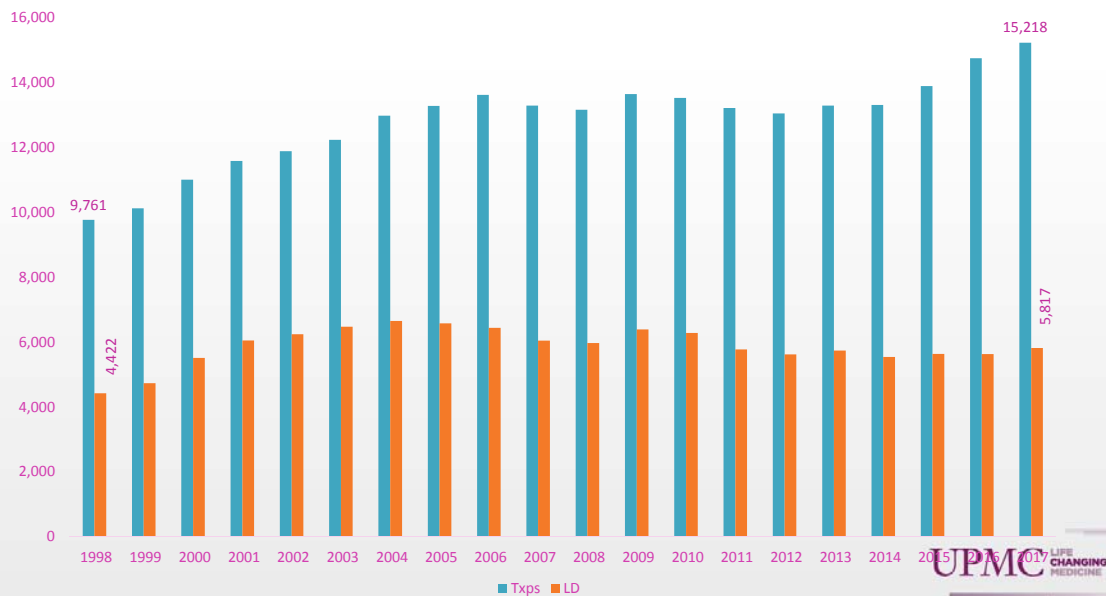
WHY HAVE THE NUMBER OF LDLTs REMAINED SO LOW ?

- Numerous regulations with significant consequences:
 - UNOS, CMS, state
- Donor complications/deaths that have been highly publicized
- Risk burden seems to rest on shoulder of small number of individuals
- Not all members of the “team” are equally supportive
- **Recipients and Donors are misinformed**

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National Live Donor Kidney Transplants Last 20 Yrs



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Who Can Be a Living Donor?

- Sibling
 - Spouse
 - Parents
 - Other Relatives
 - Co-Worker
 - Friend
 - Church/Temple Member
 - Neighbor
 - Non-compatible donor
 - Republican or Democrat
- **Must be willing to donate**
 - **We will evaluate and screen for suitability**

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Process: Phase 1 – Education and Screening



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Unexpected and Expected Media for Directed and NDD

4-year-old foster child in desperate need of liver transplant finds donor

Updated: May 20, 2015 - 8:26 PM



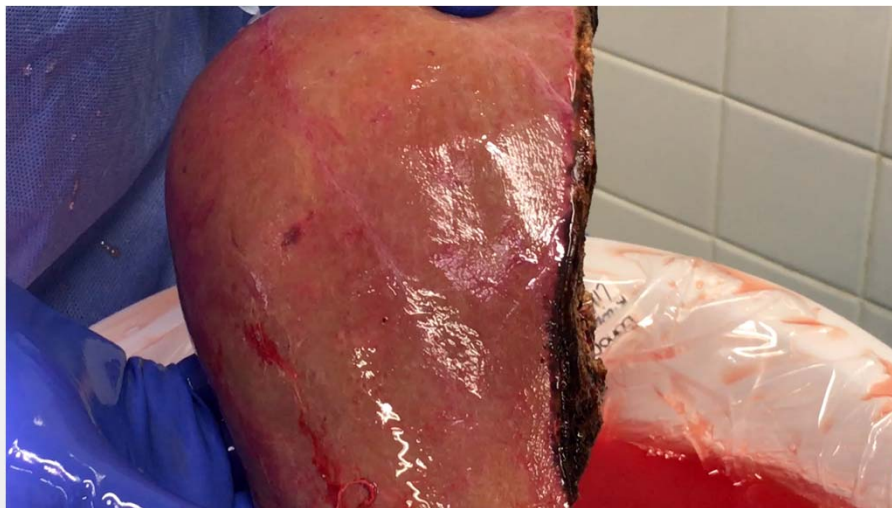
Penguins fan seeks kidney donor, brings homemade sign to game

by Pat Pickens @Pat_Pickens / NHL.com

April 1st, 2018



Live Donor Liver Transplant: R Lobe Donor – 1130gms



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HOPE

IN ACTION →



HIV-to-HIV Solid Organ Transplantation

June 19th, 2018

Ghady Haidar, MD
Assistant Professor of Medicine
University of Pittsburgh Medical Center



Background

- 50% of deaths among patients who are well controlled on ART in North America and Europe
 - **Not due to AIDS** and opportunistic infections
 - **Due to**
 - Non-AIDS-defining cancers
 - CV and respiratory diseases
 - **End-stage liver disease**
 - **End-stage renal disease**

Maartens, Lancet 2014
Rodger, AIDS 2013
Gill, CID 2010
Smith, Lancet 2014
Bickel, HIV Medicine 2013



Using HIV+ deceased donors

- Expands donor pool by 360-600 patients annually in the USA
- Wait times for HIV+ patients will decrease (KTx)
 - > 7 years to < 1 year
- Benefits African Americans the most
- Benefits ALL transplant candidates

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HIV+/+ SOT in South Africa



Elmi Muller, MD
Transplant surgeon
Cape Town
First person to perform
HIV-to-HIV SOT out of
sheer need

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Courtesy Dorry Segev, MD, PhD

HIV +/- SOT in South Africa

ORIGINAL ARTICLE

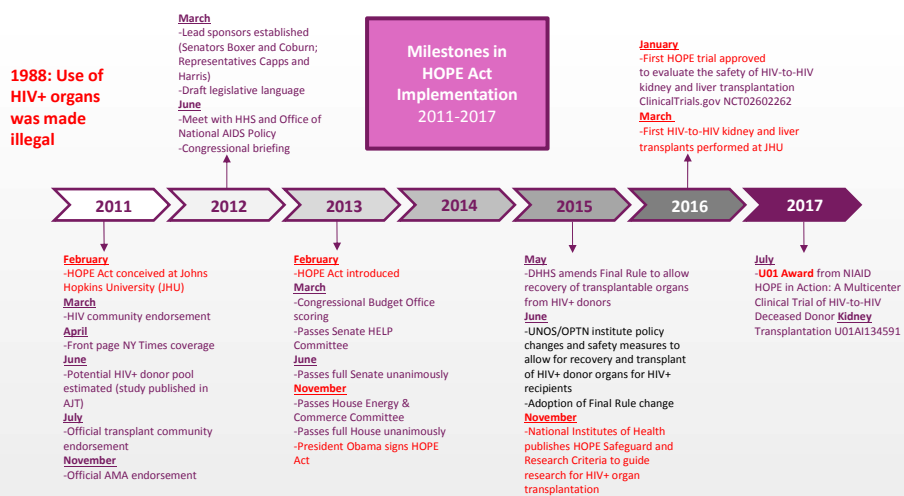
HIV-Positive-to-HIV-Positive Kidney Transplantation — Results at 3 to 5 Years

Elmi Muller, M.B., Ch.B., M.Med., Zunaid Barday, M.B., Ch.B.,
Marc Mendelson, M.D., Ph.D., and Delawir Kahn, M.B., Ch.B., Ch.M.

- 27 patients (4 + 23)
- VL < 50 copies/mL on standard ART
 - NRTI + NNRTI (59%)
 - NRTI + **PI/r (41%)**
 - **No INSTI's in South Africa**
- Median CD4: 288 (IQR: 236-511)
- 11% HBV+, none with HCV

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Muller et al, NEJM 2015

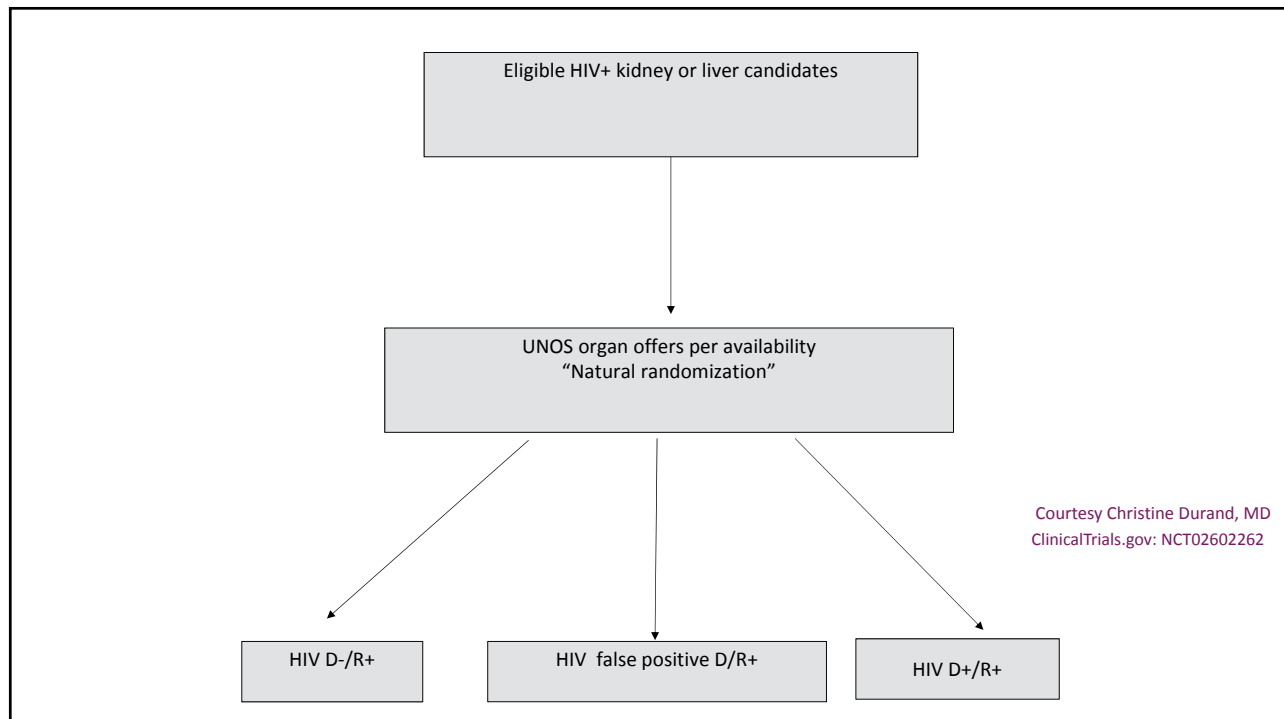
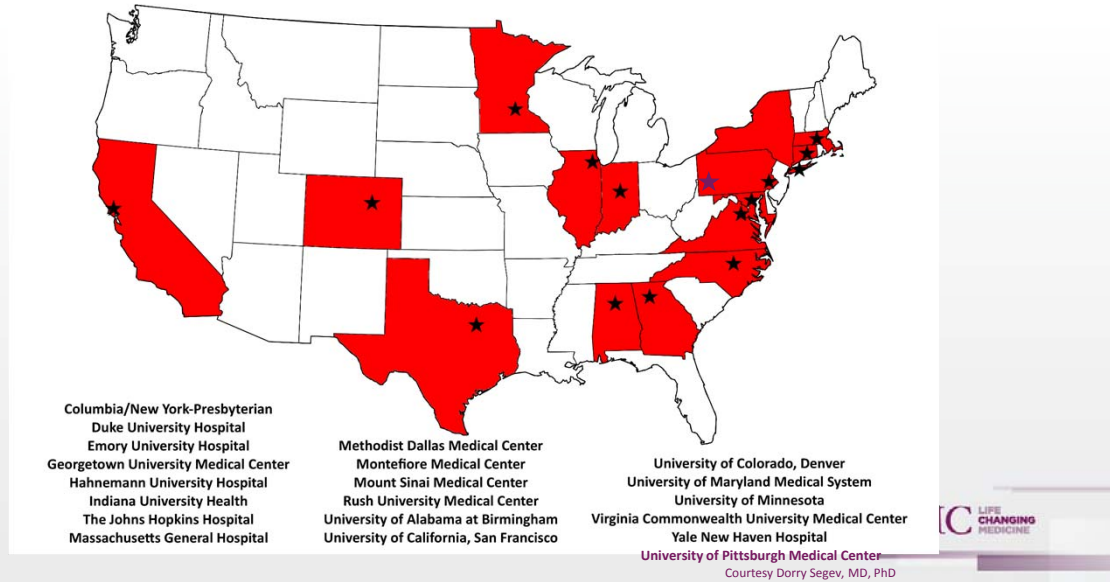


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Courtesy Brianna Doby (JHU)

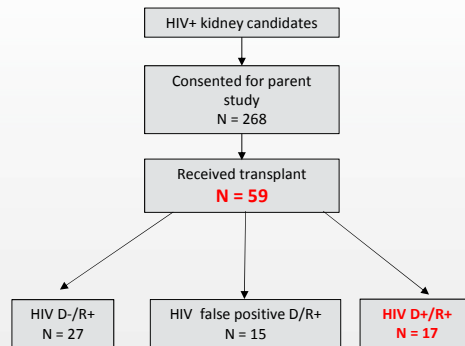
ClinicalTrials.gov: NCT02602262

20 active centers



HOPE Kidney Recipients (N=59) (June 2018)

HOPE
IN ACTION →

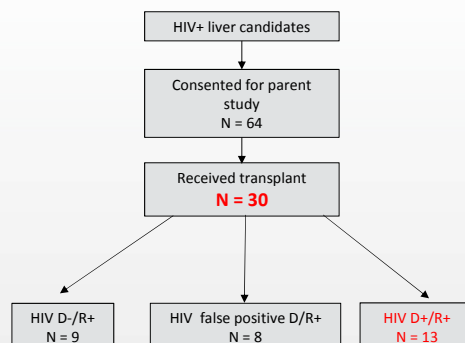


UPMC LIFE CHANGING MEDICINE

Courtesy Christine Durand, MD

HOPE Liver Recipients (N=30) (June 2018)

HOPE
IN ACTION →



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Courtesy Christine Durand, MD

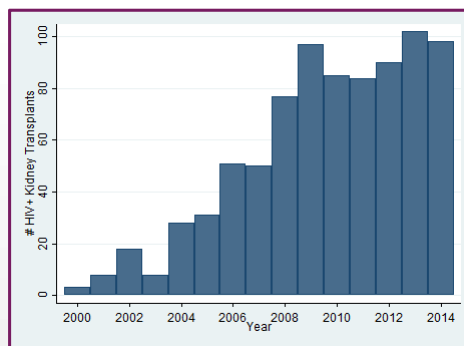
Questions



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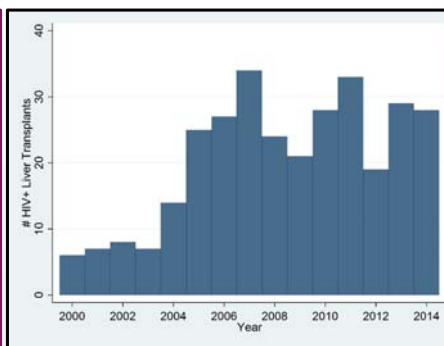
US Volumes: HIV negative-to-positive (SRTR)

Kidney



- HIV+ KT, > 12 fold increase
- > 100 transplants per year
- Significant survival benefit compared to remaining on HD

Liver



- HIV+ LT, > 4 fold increase
- > 30 transplants per year
- Good outcomes, except HCV co-infected

Courtesy, Dody Segev, MD, PhD

Locke JE/Segev DL. Annals of Surgery 2017.

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Patient/graft survival (NEJM 2010)

- Patient survival
 - 1-year: 94.6%
 - 3-year: 88.2%
- Graft survival
 - 1-year: 90.4%
 - 3-year: 73.7%
- Similar to survival rates of HIV-negative kidney

Stock et al, NEJM 2010

History of US Organ Distribution

- Uniform Anatomical Gift Act in 1968
 - US Congress effort to national organ policy
- National Organ Transplant Act (NOTA) in 1984
 - OPTN
- Division of DHHS → HRSA → UNOS to maintain the OPTN
- UNOS organized the country in 11 regions

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