

WINTER 2023

UNOS Region 5 Educational Collaborative

Horseshoe, Las Vegas, NV • February 8, 2023



Everyone learns. Everyone teaches.



LIFESHARING™

Successful Methods in Increasing Organ Utilization

Kiersten Smith BSN, RN, CPTC, LSSGB - Lead Organ Procurement Coordinator

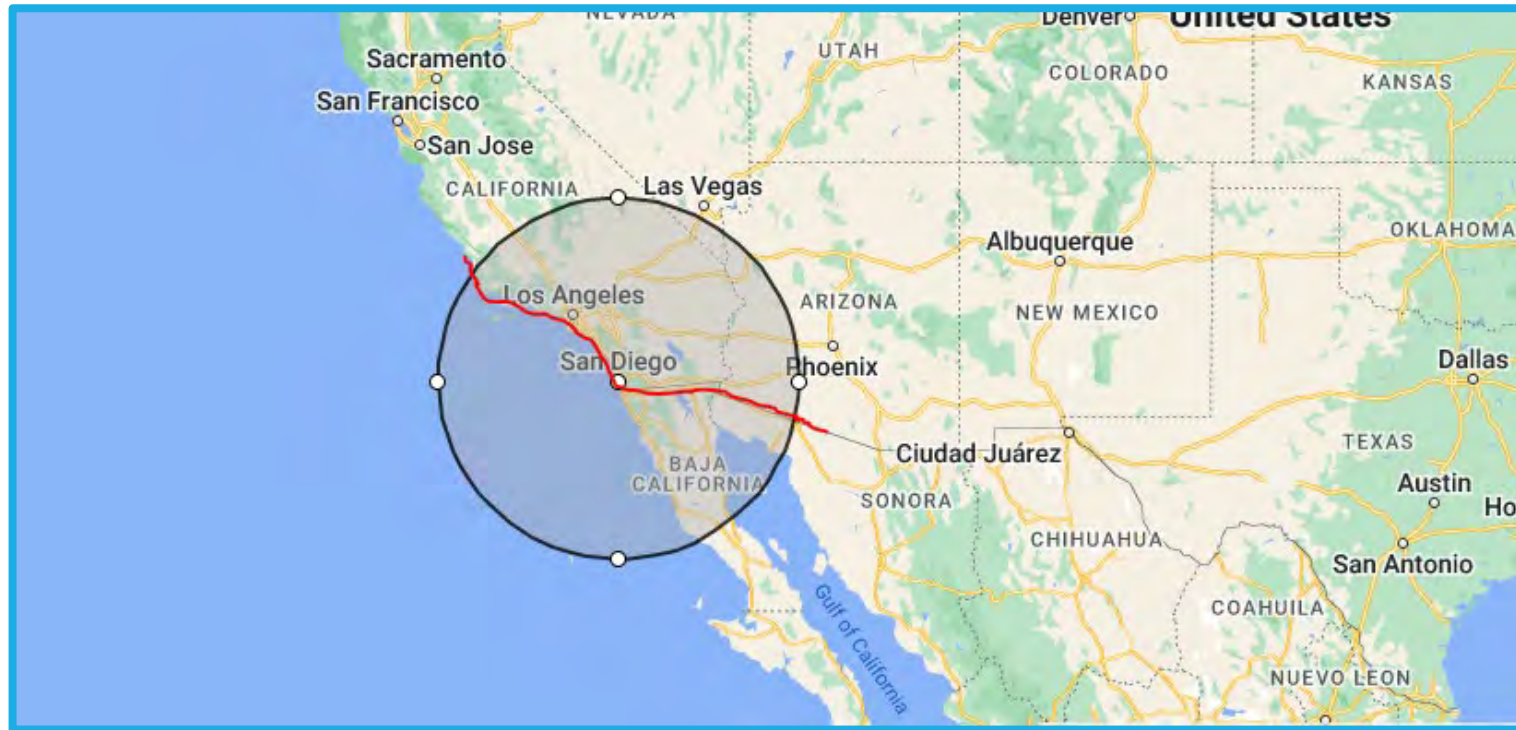
Jaclyn Russe BSN, RN, CPTC, LSSBB- Lead Organ Procurement Coordinator



Increasing Kidney Utilization

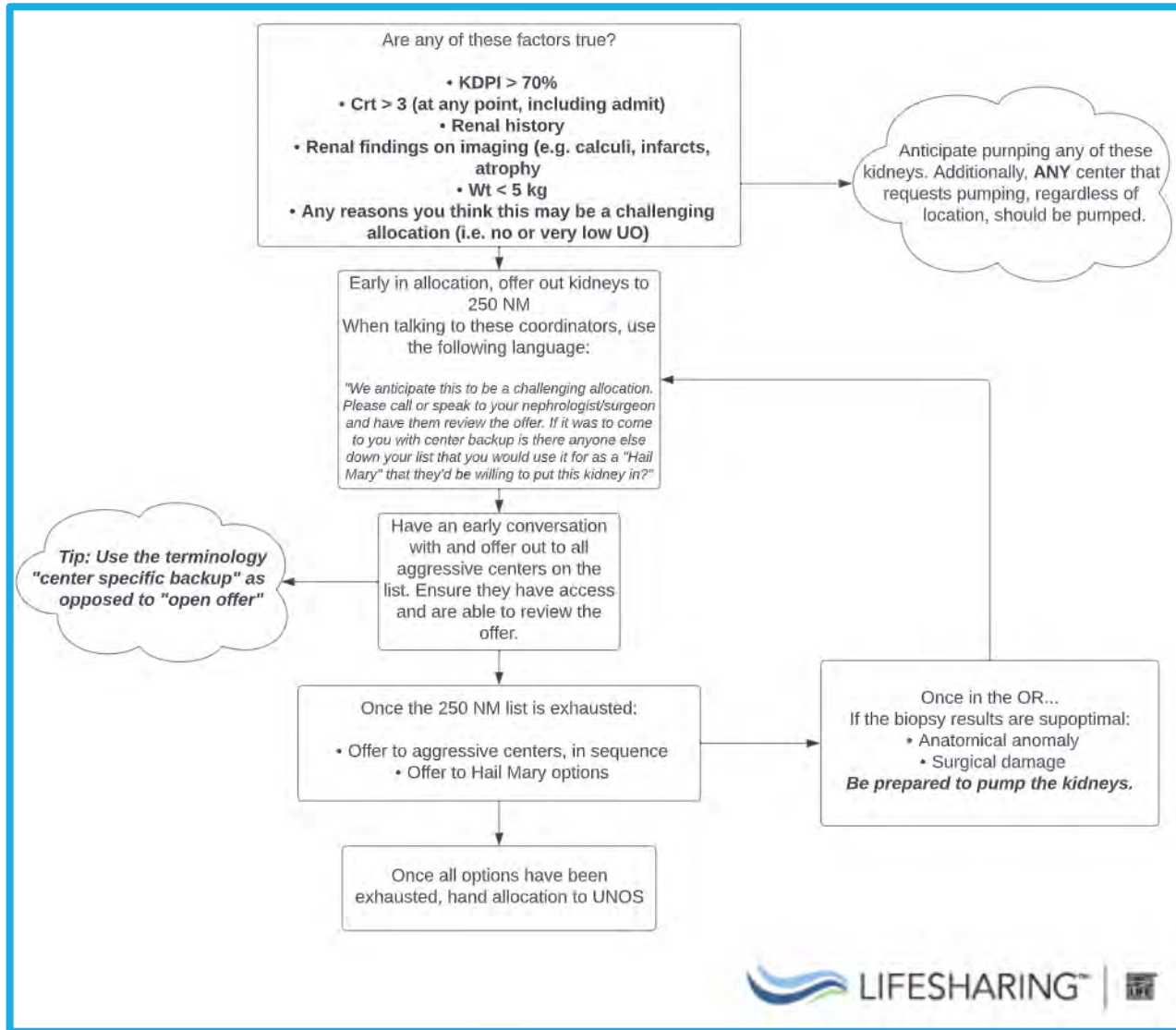
Allocation Changes and Challenges

- Allocation changes
- Disadvantages with a 250NM concentric circle



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Aggressive Kidney Allocation

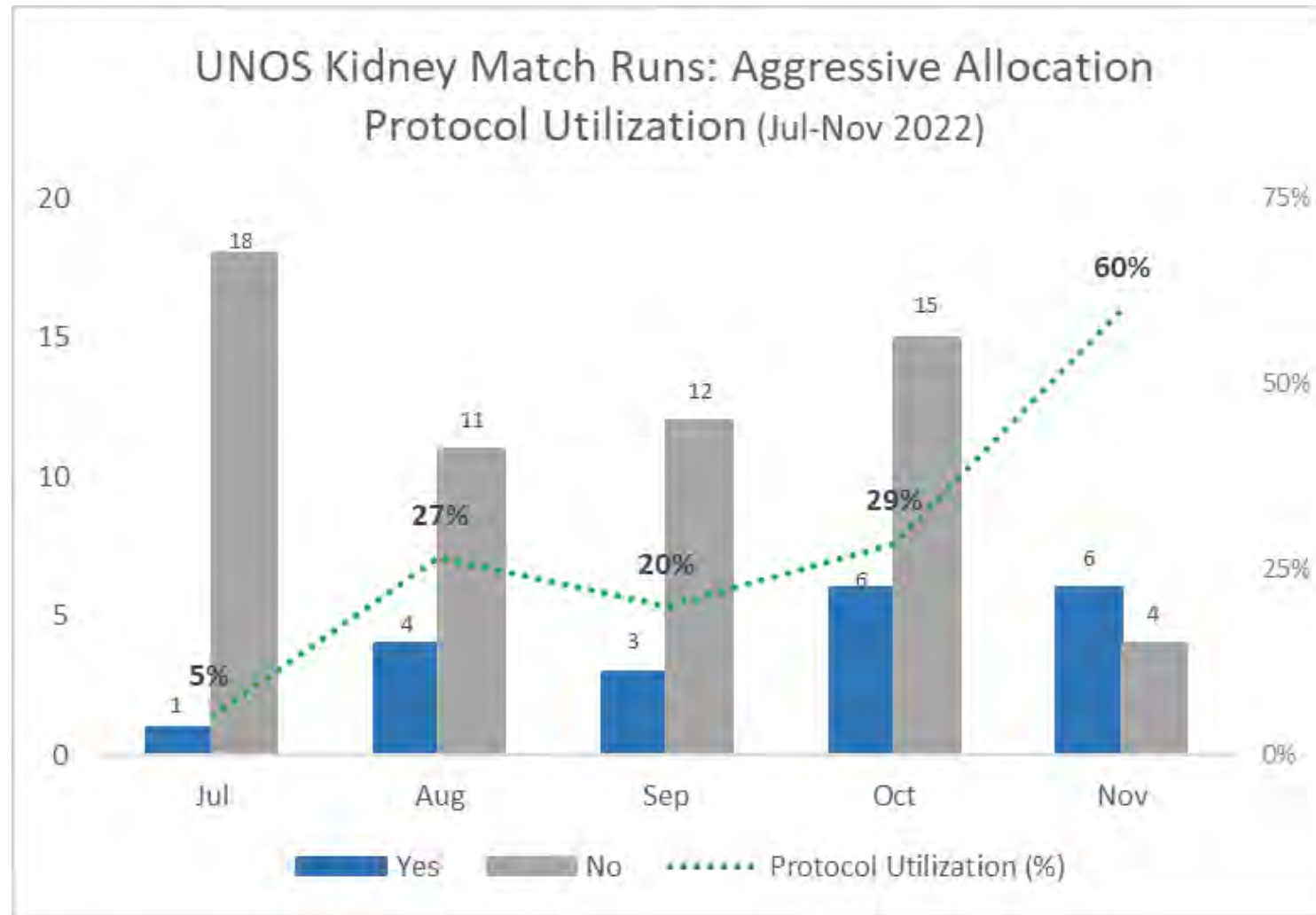


- Continual data analysis and relationship building
- Hail Mary with local centers
- Continual improvement:
 - Document when aggressive kidney allocation is started

Kidney O:E

	Sum of Observed Kidney	Average of Observed Kidney	Sum of Expected Kidney	Average of Expected Kidney	O/E Ratio
Prior to Implementation	138	1.453	149.46	1.573	0.913
Post Implementation	135	1.517	140.41	1.578	0.961

Running the Aggressive Kidney Allocation



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Kidney O:E

	Sum of Observed Kidney	Sum of Expected Kidney	O/E Ratio
July-2022	2	1.95	1.02
Aug- 2022	6	4.81	1.24
Sep-2022	2	1.92	1.04
Oct-2022	7	5.64	1.2
Nov-2022	3	3.55	0.84
Total	20	17.86	1.120



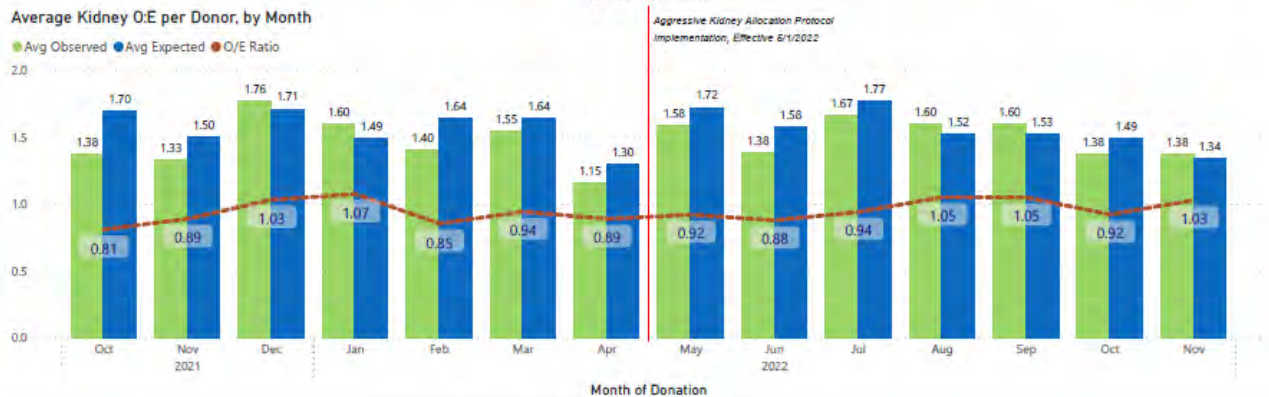
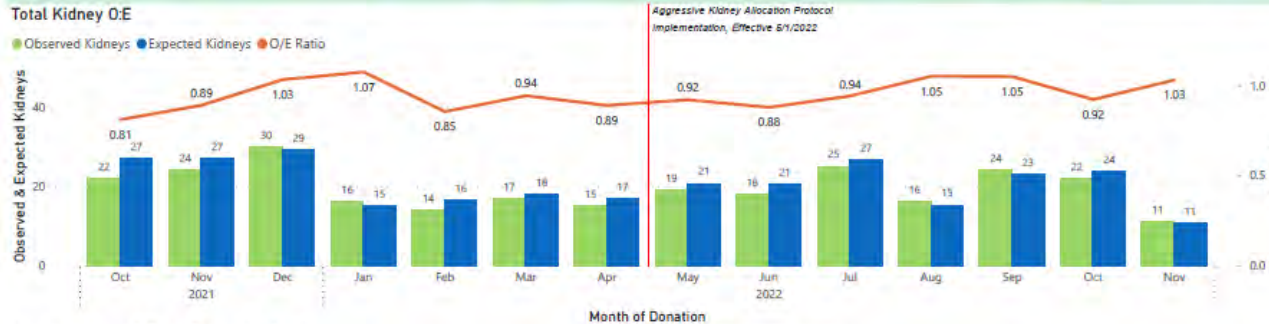
Kidney Observed vs Expected Outcomes for Lifesharing Donors:
O:E Comparison Prior to and After Implementation of Aggressive Kidney Allocation Protocol on 5/1/2022



The Future

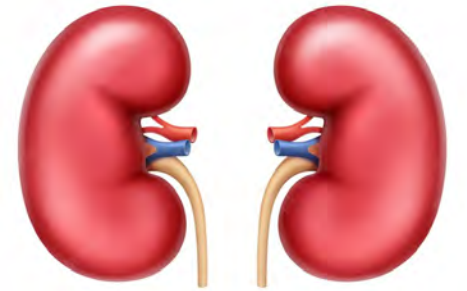
- Data analytics
- Dashboards
- Continuous Improvement

Overall		Prior to Implementation (Oct. 2021 to Apr. 2022)		After Implementation (May 2022 to Nov. 2022)	
N = 184	O/E = 0.94	N = 95	O/E = 0.92	N = 89	O/E = 0.96
Sum O:E	Average O:E	Sum O:E	Average O:E	Sum O:E	Average O:E
Kidneys Observed	Kidneys Observed Average	Kidneys Observed	Kidneys Observed Average	Kidneys Observed	Kidneys Observed Average
273	1.4837	138	1.4526	135	1.5169
Kidneys Expected	Kidneys Expected Average	Kidneys Expected	Kidneys Expected Average	Kidneys Expected	Kidneys Expected Average
290	1.5754	149	1.5732	140	1.5777



Case Study Successes

- 25 y/o male. Drug OD w/ ROSC. 14 hours with SBP 60-70 & no O₂ saturation recorded on maximum ventilator support
- John Doe, 60 y/o male. ROSC. Active Hep C.
- 41 y/o male. ROSC. Morbid obesity (BMI=49), IVDA, Hep C.
- 37 y/o female. Chronically vent dependent d/t muscular dystrophy



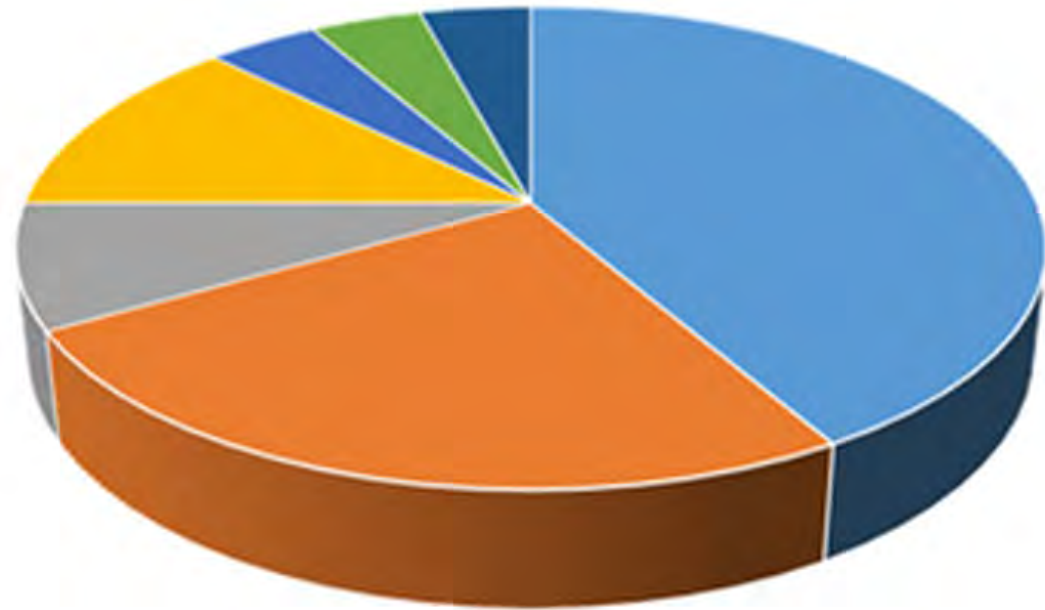


Increasing Liver Utilization

Liver O:E

- O:E noted to decrease from high of 1.1 to an all time low of 0.74
- Over the course of 8 months, 22 livers that were expected to be transplanted were discarded
- Gap analysis was completed and themes were found

Liver Declines By Reason



- Quality Before OR
- Quality in OR
- Rapid Case
- Timing
- Transportation
- Sizing
- Not Authorized

Gap Analysis

- **Three focus areas emerged.**
 - **Quality concerns either prior to or during OR**
 - 13 cases total or approximately 59% of the cases
 - **Issues with timing, lack of transportation, rapid cases, and sizing concerns**
 - 7 cases total or approximately 31% of the cases
 - **Not authorized**
 - 2 cases or 9% of the cases

Reason	Average all Cases
Quality pre/during OR	13
Timing/trans./rapid/sizing	7
Not authorized	2

OPC Guidelines for Strong Liver Backups



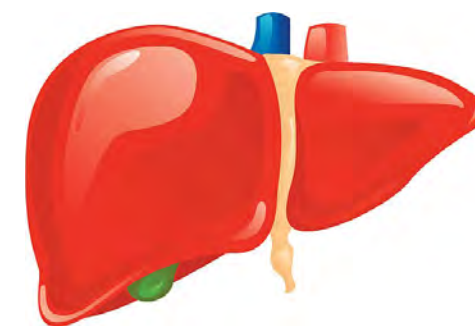
In order to prevent unnecessary organ discard and increase our O:E ratio for our livers, the practice for obtaining a strong backup should be standardized.

- Once you have placed the liver, first ask the accepting center if they are able to back themselves up in any capacity. This is not the same as a center backup waiver, but rather just checking to see if there are other recipients at that same center if needed at the last moment.
- Go down to the next center on the list and call the coordinator. Ask them if they would be willing to be a strong backup for your donor. If they say yes, ask if their surgeon is aware and their recipient is in-house. If these are not true, they are not technically a strong backup. Get the offer out to aggressive centers to ensure they can see the offer and have a chance to opt in pre-OR.
- Call both local San Diego centers and see if they are willing to be a strong backup. Also ask them in case it becomes a challenging reallocation if they can speak to their surgeon and see if they have anyone else on the list that they would be willing to use the liver for as a "Hail Mary."
- If a center is willing to be a strong backup they will usually bring up the topic of transportation. If they are very interested they often set up their own transport, if they ask if we can do it, we may be able to.
- Discuss with your AOC the possibility of placing transportation on standby. If authorized, call the appropriate vendor and place a plane on standby. Verify with them that they will have a pilot in the plane, but NOT relocate the plane.
- If the liver is declined in the OR, notify your strong backup centers while simultaneously running the rapid reallocation tool in Unet.
- If a liver is declined for quality and there was no plan to biopsy, please obtain a biopsy.

Reach out to your AOC with any additional questions. Never assume a liver is absolutely going to be transplanted when accepted. Always backup livers whenever possible!

Strong Liver Backup Guidelines

- Ask accepting center if they can backup themselves if need be
- Go down the list and call centers behind them, specify what a strong backup means
- Call local centers and see if they have any “Hail Mary” options
- Discuss transportation with transplant center and AOC
- If liver is declined in OR, notify strong backup centers AND run expedited liver wizard
- Never assume a liver will placed... always back it up!



Conclusions

- Looked at how our OPO was able to problem solve and overcome our issues with dwindling kidney utilization numbers and discarded livers
- Educated coordinators what it meant to be a strong back-up
- Clarifying the process of aggressive allocation and giving clear directions
- Improved communication and with transplant centers

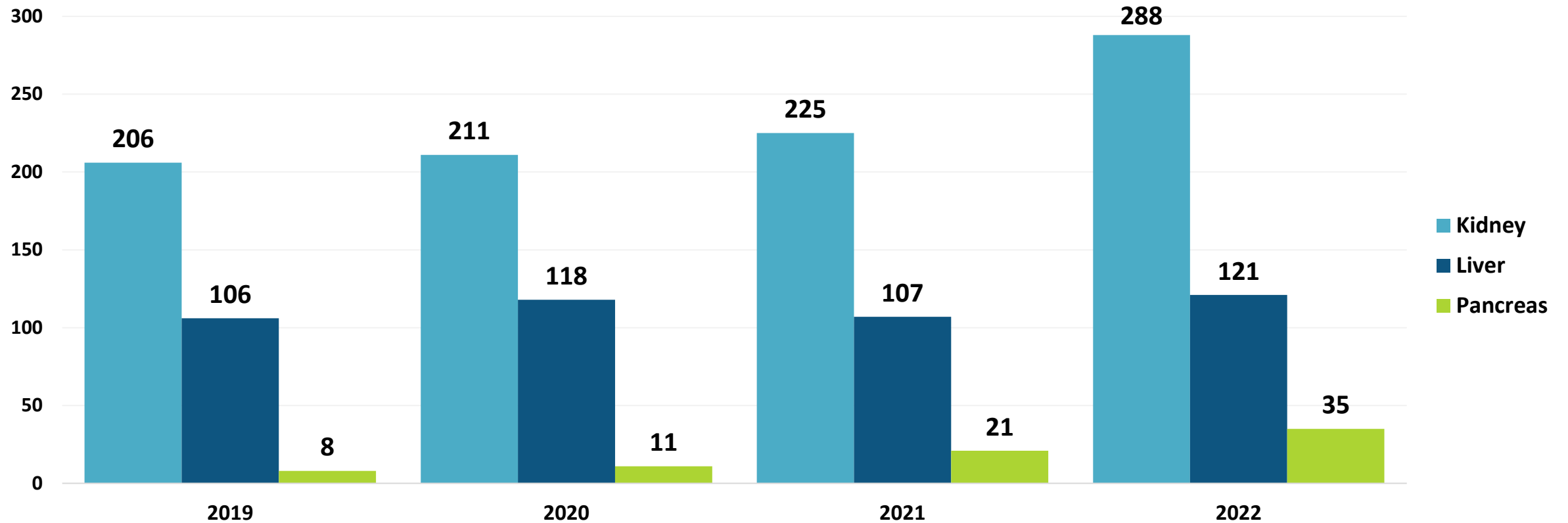


Expedited Offers & Increasing Organ Placement Transplant Center Perspective

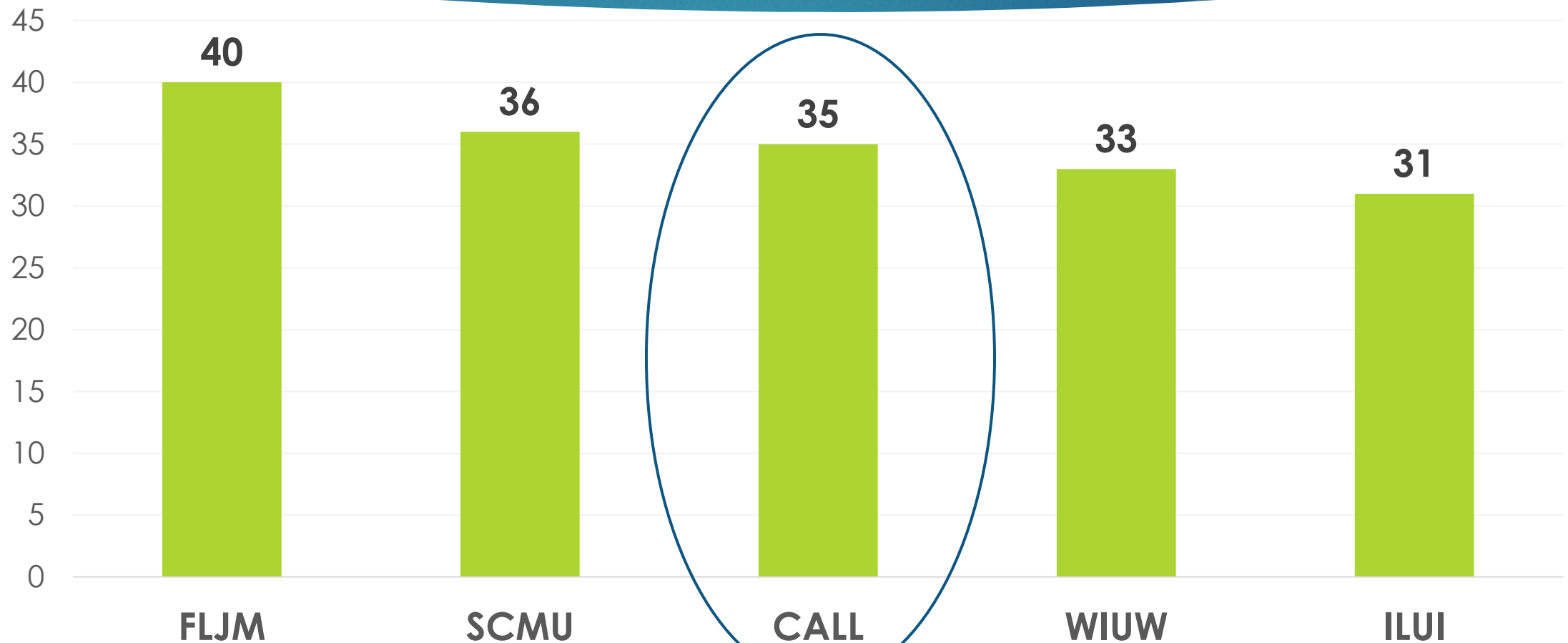
JENNIFER CABODI, BSN, RN, CPTC PRE LIVER TRANSPLANT COORDINATOR

LOMA LINDA UNIVERSITY HEALTH – TRANSPLANT INSTITUTE

LLUMC Organs Transplanted 2022



Pancreas Program Comparison by Center



Expedited Offers

What's Working

- ▶ Early clear communication with OPO's and transplant coordinators
- ▶ Posted photos and biopsy results
- ▶ Sharing the reason for accepting center/previous center decline
- ▶ Early notification to OR/bed placement

Challenges

- ▶ Bed availability in the Medical Center
- ▶ Covid testing
- ▶ Transportation
- ▶ Donor OR Scheduling
- ▶ Recovering surgeon availability

Increasing Organ Placement

What is Working

- ▶ Early communication from OPO's
- ▶ Photos, Biopsy results, pump numbers and WIT attached for viewing at time of notification to transplant center
- ▶ Collaboration with transplant nephrologist to choose appropriate recipient for kidneys

Challenges

- ▶ Transportation and cold time
- ▶ Finding recipients with years of wait time with updated testing
- ▶ Patients with outdated serum for XM
- ▶ Hospital bed availability

The Future – Thoughts on Increasing Organ Placement

- ▶ UNOS filters
- ▶ HCV Nat positive
- ▶ Older donor organs
- ▶ OCS and marginal livers
- ▶ Collaboration surrounding donor OR times



Thank you!

Enjoy the rest of the
collaborative.



OR COORDINATION THE TRANSPLANT CENTER PERSPECTIVE

Christopher Fowler, PhD, MBA, RN
Operations Administrator

WHO ARE WE?

- Phoenix Metropolitan Population: 4.7 million
- 1 of 3 Adult Transplant Centers in the Metro area
- 4 solid organ transplant programs plus VCA
- 9 procurement coordinators



2022 DATA

- 807 Organs Transplanted
 - 499 Kidneys
 - Includes 95 living donors & 154 on *pump* (31%)
 - 265 Livers
 - Includes 143 DCD (54%); 147 on *pump* (55%)
 - 29 Pancreas
 - 34 Hearts
 - Includes 1 DCD on *pump* (3%)

ORGAN OFFER ACCEPTANCE

- Notification
 - Transplant Surgeon
 - Recipient
 - Transplant Fellows and Surgical APPs
 - House supervisor
 - HLA lab for XMatch
 - Local OPO
 - Facilitate transportation of team(s) and of organ(s)
 - Procurement/perfusion assistance for pumped cases

CHALLENGES

- Time constraints
- Donor OR delays
- Recipient location
- Recipient health factors
- Hospital Resources
- FAA regulations



OR Coordination The OPO Perspective

Elizabeth Shipman, MBA, CTP
Director, Organ Services



www.nvdonor.org |



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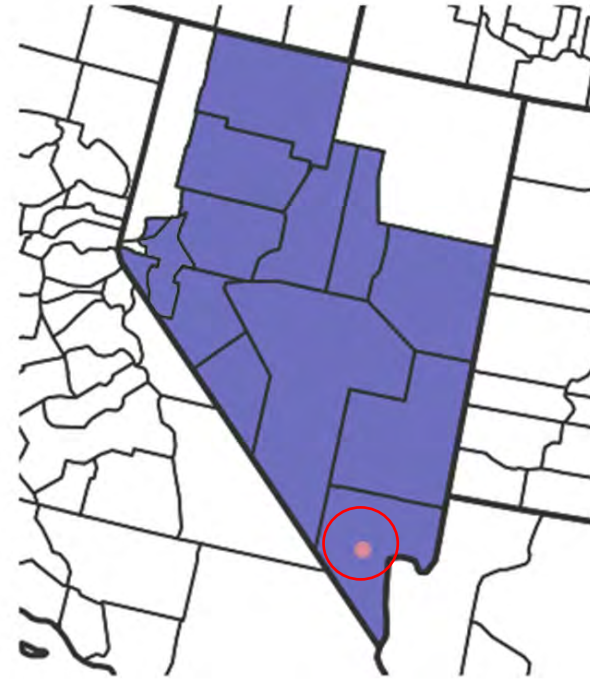
Agenda

- Background on Nevada Donor Network
- OPO Stakeholders
- OR Scheduling
- Common Complaints
- Open Forum



Who are We?

- Population: 2.8 Million
- 7th Largest by Land Mass
- 15 Organ Donor Potential Hospitals within 35 miles of each other
- 45 Total Hospitals
- One renal transplant program
- Mass exporter of organs



NEVADA
DONOR
NETWORK
#DonateLife



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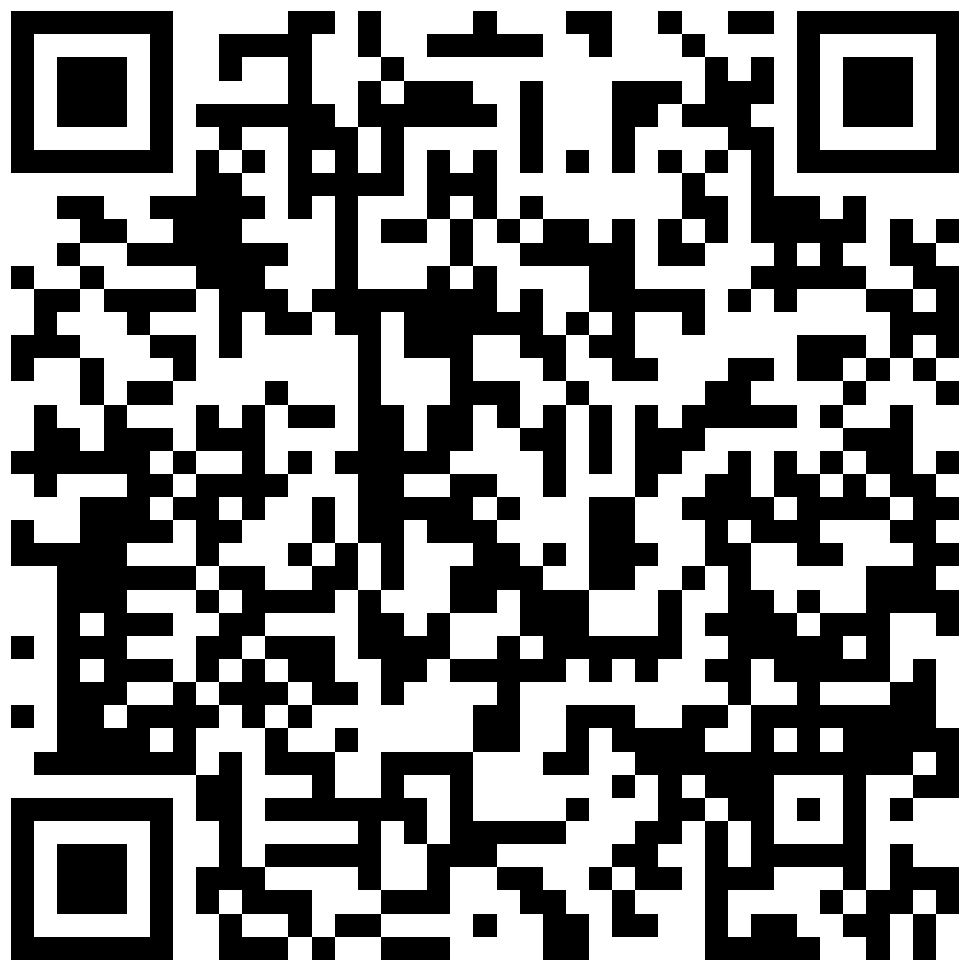


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2022 Data

- 254 Organ Procurements Scheduled
- 207 Organ Donors
- 125 BD donors (60%)
- 82 DCD donors (40%)
- 47 DCD potential donors that did not pass within the time frame





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When poll is active, respond at pollev.com/eshipman138

Text **ESHIPMAN138** to **22333** once to join

I am a

Surgeon/Physician

Coordinator

Other

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app



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🌐 When poll is active, respond at pollev.com/eshipman138

📱 Text **ESHIPMAN138** to **22333** once to join

The best time for an organ procurement is

Early morning (3am-5am)

Mid morning (6am-10am)

Early afternoon (11am-2pm)

Mid afternoon (3pm-5pm)

Evening (6pm-10pm)

Overnight (11pm-2am)

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Respond at pollev.com/eshipman138

Text **ESHIPMAN138** to **22333** once to join, then **A, B, C, D, E...**

The best time for a transplant is

- Early morning (3am-5am) **A**
- Mid morning (6am-10am) **B**
- Early afternoon (11am-2pm) **C**
- Mid afternoon (3pm-5pm) **D**
- Evening (6pm-10pm) **E**
- Overnight (11pm-2am) **F**

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app

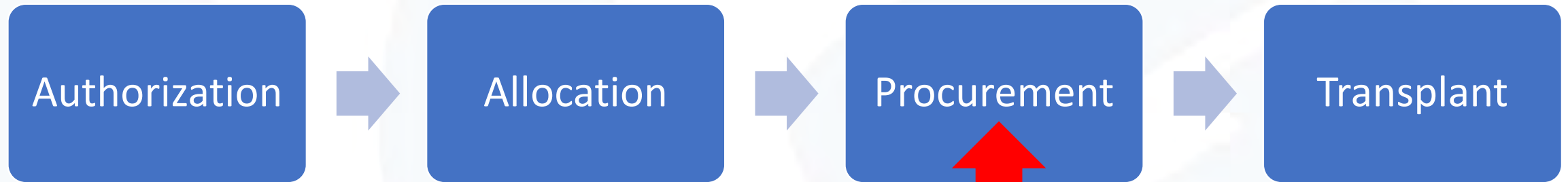


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OPO Process



Recent hospital educations

- Increasing DCD candidates
- Rapid organ recovery
- NRP
- Machine perfusion
- Pharmacy needs





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Overview of process for scheduling BD donor



Who DOES pronounce the donor in DCD?

RN/Mid-level provider **A**

Resident/Fellow **B**

ICU attending **C**

Palliative attending **D**

Whoever agrees to pronounce **E**

I don't know **F**

Start the presentation to see live content. For screen share software, share the entire screen. Get help at pollev.com/app



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Overview of process for scheduling DCD donor



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Common Complaints

Family

Donor
Hospital

Transplant
Hospital

OPO
Stressors



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Kidney evaluation pre-OR

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So whose requests take priority?

- Family
- Donor hospital
- Transplant hospital
- OPO



Thank You! Questions?

Eshipman@nvdonor.org



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Building Your Team's "Soft" Skill Sets

Derek Ginos, MHA, FACHE
Director, Adult Abdominal Transplant Services
Intermountain Health
derek.ginos@imail.org

That certain
something that
separates an “OK”
teammate from a
“Great” teammate

Soft Skills
Human Skills
Interpersonal Skills
Attributes
Personality
Fit
Emotional Intelligence

Which Would You Rather?

Likely something in between



The Problem

Most education and training is focused on technical skills. We expect people to learn these “soft” social skills on their own through experience and perhaps an occasional class or video



Few of us are the complete package

As with any skill, attributes like communication, conflict resolution, empathy, etc. can be learned



Building “Soft” Skills on Your Team

No different than training to do a task

 Culture of Safe but Open Learning

 Identify

 Teach

 Coach / Model

 Practice

“It’s Not Mean, It’s Clear”

– Kim Scott, *Radical Candor*

Learning must begin with creating an environment where staff can safely give and receive feedback.

This behavior must start with YOU



Identify the Skill

Improvement starts with the individual recognizing a gap and wanting to improve.

Effective Conflict
Resolution

Excellent
communication

Compassion and
patience

Flexibility,
adaptability, and
emotional
stability

Proactive,
ethical, and
responsible
nature

Honesty

Effective team-
player

Strong work
ethic

Time
management

Individualized Training

Make a plan and let the caregiver drive it

- Regular individualized check-ins with team members to build trust and provide ongoing feedback.
- Intermountain Health requires quarterly check-in meetings with all caregivers
- We use this forum for both the manager and the caregiver to identify areas of strength and areas to improve
- Outcomes may include a combination of classes, coaching, and situational feedback

Coach / Model

Do my actions reinforce the attributes I
am seeking to build on my team?



Perfect Practice Makes Perfect

- My Highschool Band Teacher Mr. Applonie

Scenario 1: Watch this video, now play the clarinet.

Scenario 2: You keep missing notes on the clarinet; go practice more and come back when you have it.

Scenario 3: You keep playing a C when it should be a C sharp. Slow down and play it for me again. I want you to practice this section. Here is a trick I learned when I first started playing

Rome wasn't built
in a day and team
culture doesn't
change over night

We are a work in progress and would
love to learn from your collective
experience.



Questions?

Derek Ginos, MHA, FACHE
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The Balancing Act of Coordinator Retention

Amy W. Herbert, RN, BSN, CCTC

Nurse Manager Kidney/Pancreas Transplant

Intermountain Transplant Services

Amy.Herbert@imail.org

Disclosures

Relevant Financial Relationships:

Salaried, full-time employee of Intermountain Health.





A Balancing Act



LOW PAIN
HIGH GAIN



Where We Began...

Rome wasn't built in a day and team culture doesn't change over night

We are a work in progress and would love to learn from your collective experience.



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Stop the Pain-Bring on the Gains



- Steep learning curve
- In office on an 5-8 model
- High patient loads
- Organ call



- Implemented on-boarding mentorship/orientation and progressive education plan
- Hybrid schedule and 4-10 staffing model
- Balanced patient loads
- Outsourced Organ Call
- Ideas Portal

Areas of Focus

Compensation/Benefits

- Pay/Benefits
- Hybrid work schedule
- Call concerns
- Work/Life balance



Workload Balancing

- Adding staff to safely balance care
- Increase outreach training
- Cross train for coverage
- Engaging team leads



Culture

- Safe and open work environment
- Soft skills
- Fit
- Engaging team leads



Kidney Team

2019 versus 2022

- 6 Coordinators
 - 3 FTE Pre-Kidney Coordinators
 - 3 FTE Post/Living Donor Coordinators
- 16 Coordinators
 - 8 FTE Pre-Kidney Coordinators (0.5 FTE is a Team Lead, 0.5 FTE will float)
 - 4 FTE Post-Kidney Coordinators
 - 4 FTE Living Donor Coordinator (0.5 FTE is Team Lead)

• 166% Growth





Liver Team

2019 versus 2022

- 8 Coordinators
 - 2 FTE Pre-Liver Transplant Coordinators
 - 3 FTE Post-Liver Coordinators
 - 3 FTE Hepatology Coordinators
- 21 Coordinators
 - 5 FTE Pre-Liver Coordinators (Including Team Lead)
 - 2 FTE Living Liver Coordinators (Including Team Lead)
 - 7 FTE Hepatology Coordinators (Including Team Lead)

• 163% Growth

Turnover & Growth

- 2019-2022 – 6 Exited Intermountain
 - 3 had a positive exit
 - 3 had a negative exit
- Majority of the growth has been internal transfers
- External hires have increased in 2022



Back to the Balancing Act...

Key elements that have worked at Intermountain Transplant:

- Hybrid work schedule
- 4–10-hour shifts
- Continual management of workloads
- Outsourcing organ call
- Having a dedicated onboarding/education plan
- Adding Team Leads



Questions?

Amy W. Herbert, RN, BSN, CCTC
Nurse Manager Kidney/Pancreas Transplant
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DonateWell at USC

Helping donors reach their goals.

Susan Kim, MS, RDN, CCTD
Program Manager

OBJECTIVES:

- The need for a donor wellness program at USC
- Identify nutrition & lifestyle related donor risks
- Updated donor nutrition assessment & tools
- Introducing DonateWell at USC
- Case example

KECK MEDICINE OF USC



Source:
www.keckmedicine.org

Keck Medicine of USC is located in the Boyle Heights area of East Los Angeles.

70% of the medical center's patients are from LA County.

Living Donor Transplant Program
USC Transplant Institute

EAST LOS ANGELES: DEMOGRAPHICS



Photo credit: Alicia Quan

US Census Bureau

- **96.2% Hispanic**
- 50.5% Male/ 49.5% Female
- 10.6% 65 years or older
- **10.1% has a college degree**
- **17.9% poverty rate**
 - LA County 16.6%

Living Donor Transplant Program
USC Transplant Institute

2021 KECK HOSPITAL COMMUNITY NEEDS ASSESSMENT REPORT

SIGNIFICANT HEALTH NEEDS IDENTIFIED

- Housing and Homelessness
- Mental Health
- Preventative Practices
- **Chronic Diseases**
- Access to Healthcare
- Sexually Transmitted Infections
- Cancer
- **Overweight and Obesity**

2020 USC LIVER DONOR APPLICANT PROFILE

- BMI ranged from 22.5–45.6
 - **BMI >30: 38%**
 - BMI >35: 19%
 - BMI >40: 6%
- Age range: 18 to 68 years old
 - 59% are 18 to 39 years old
- **Hispanic: 49%**
- Uninsured: 10%
 - 29% of applicants did not respond

2020 USC KIDNEY DONOR APPLICANT PROFILE

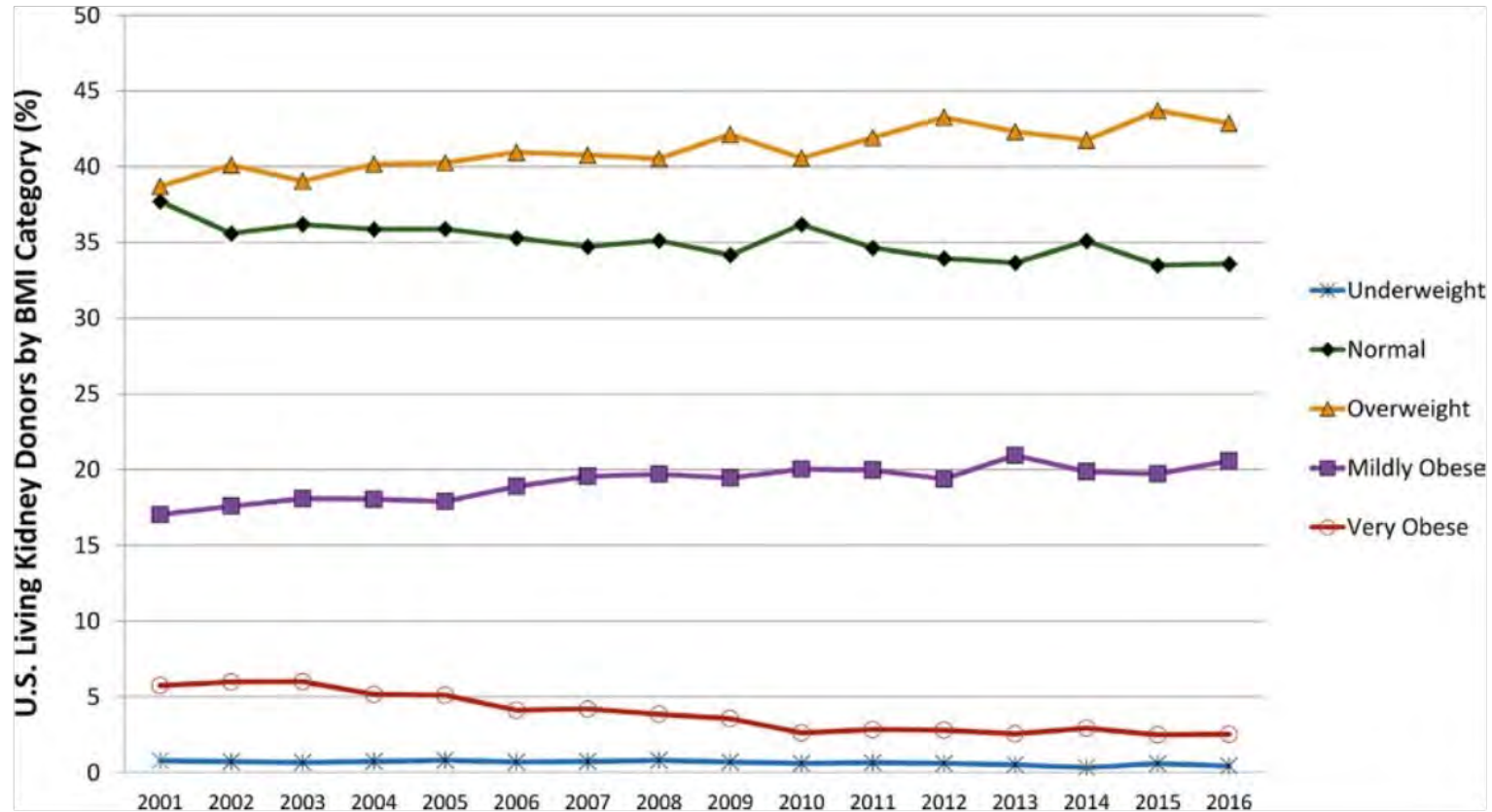
- BMI ranged from 17.7–48.8
 - **BMI >30: 54%**
 - BMI >35: 16%
 - BMI >40: 5%
- Age range: 18 to 75 years old
 - 56% are 18 to 39 years old
- **Hispanic: 40%**

DONOR CHALLENGES AT USC



- Unhealthy
 - Obese
 - Metabolic Syndrome
 - Hepatic Steatosis
- Uninsured
- Unemployed
- Undocumented

KIDNEY DONOR ACCEPTANCE RATE TRENDS BY BMI GROUP



Naik AS, Cibrik DM, Sakhuja A, Samaniego M, Lu Y, Shahinian V, Norman SP, Schnitzler MA, Kasiske BL, Segev DL, Lentine KL. Temporal trends, center-level variation, and the impact of prevalent state obesity rates on acceptance of obese living kidney donors. *Am J Transplant.* 2018 Mar;18(3):642-649. doi: 10.1111/ajt.14519. Epub 2017 Oct 30. PMID: 28949096.

Living Donor Transplant Program
USC Transplant Institute

OBESITY IN THE U.S.

- 42.4% in 2017–2018
- 30.5% in 1999–2000
- Non-Hispanic Black adults (49.6%)
- Hispanic adults (44.8%)
- Non-Hispanic White adults (42.2%)
- Men and women with college degrees have lower obesity prevalence compared with those with less education

<https://www.cdc.gov/obesity/data/adult.html>

NUTRITION-RELATED DONOR RISKS



Photo credit: Pavel Danilyuk

- Diabetes/Pre-diabetes
- Hypertension
- Hepatic Steatosis
- Metabolic Syndrome
- Obesity

Keck Medicine
of USC

DonateWell at USC

Helping donors reach their goals.

Living Donor Transplant Program
USC Transplant Institute

UPDATED DONOR NUTRITION ASSESSMENT



Photo credit: Antonina Vlasova/Shutterstock.com

- Nutritional Assessment
 - Identify nutrition risks
- Nutrition Education
 - Kcal/protein needs pre- and post-donation
 - Mediterranean diet
 - Supplements
 - Low-fat diet after liver donation
 - Low oxalate diet
- Nutrition for long-term health
 - Maintaining a healthy weight
 - Nutrition across the lifespan
 - Healthy eating patterns for disease prevention

UPDATED DONOR NUTRITION ASSESSMENT

MEDICAL HISTORY

- Diabetes/Pre-diabetes
- High blood pressure
- Fatty liver
- Hyperlipidemia
- Depression

SOCIAL HISTORY

- Level of education
- Occupation
- Schedule
- Nutrition knowledge
- Cooking skills
- Dining out
- Lifestyle behaviors of spouse and/or family members

UPDATED DONOR NUTRITION ASSESSMENT



Photo credit: Pexels/Creative Commons

Anthropometrics

- BMI
- Body composition
- Waist circumference

Nutrition-related labs

- CMP
- Lipid panel
- HbA1c

Liver fat quantification

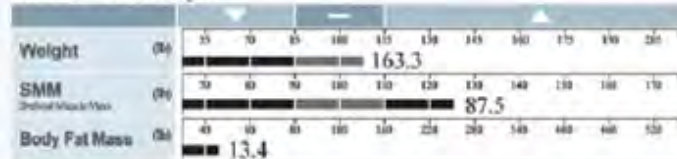
- MRI

ID	Height	Age	Gender	Test Date / Time
John Doe	5 ft 08.4 in	22	Male	04.23.2021 10:22

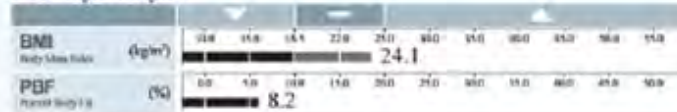
Body Composition Analysis

	Values	Total Body Water	Lean Body Mass	Weight
Intracellular Water (lb)	70.5	109.6	149.9	163.3
Extracellular Water (lb)	39.0			
Dry Lean Mass (lb)	40.3			
Body Fat Mass (lb)	13.4			

Muscle-Fat Analysis



Obesity Analysis

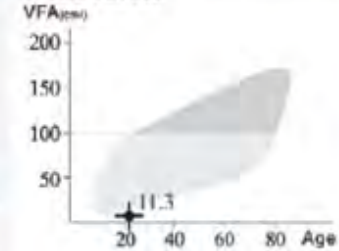


Segmental Lean Analysis

Segment	Weight (lb)	Lean Mass (lb)	Reactance (%)
Right Arm	9.04	124.4	0.368
Left Arm	8.91	122.5	0.368
Trunk	67.3	116.0	0.357
Right Leg	22.51	111.3	0.352
Left Leg	22.60	111.7	0.355

ECW/TBW Analysis

Visceral Fat Area



Body Fat - Lean Body Mass Control

Body Fat Mass - 0.0 lb
 Lean Body Mass + 0.0 lb
 (+) means to gain fat/lean (-) means to lose fat/lean

Segmental Fat Analysis

Right Arm (0.2 lb) 16.7%
 Left Arm (0.2 lb) 16.7%
 Trunk (6.0 lb) 62.1%
 Right Leg (2.2 lb) 59.6%
 Left Leg (2.2 lb) 59.3%

Basal Metabolic Rate

1838 kcal

Leg Lean Mass

45.1 lb

TBW/LBM

73.1 %

Reactance

	RA	LA	TR	RL	LL
Xc(Ω) 5kHz	18.7	19.0	2.2	19.5	18.6
90kHz	27.6	27.7	3.3	30.6	29.8
250kHz	19.8	18.4	1.6	19.5	19.6

Whole Body Phase Angle

7.3 °

DONOR NUTRITION ASSESSMENT: OTHER CONSIDERATIONS

- Asians can be obese at BMI 25
 - Sarcopenic obesity
- Post-menopausal women are at greater risk for abdominal obesity and weight gain
- Athletic types can have a higher acceptable BMI
- BMI is not reliable singular measurement
 - Waist circumference
 - Bioimpedance scale

LIVING DONOR WELLNESS PROGRAM



Photo credit: Antonina Vlasova/Shutterstock.com

- Nutrition Intervention
- Lifestyle Redesign[®]
- Fitness Support*
- Financial Assistance Programs

Living Donor Transplant Program
USC Transplant Institute

WELLNESS STARTER KIT

- Personalized meal plans
- Bathroom scale*
- Wearable fitness tracker*
- Blood pressure monitor*
- Mindful USC app
- Sports bottle
- Wellness journal

NURTRITION INTERVENTION



Photo credit: Alexandra Golovac

Healthspan & Longevity diet

- Mediterranean diet
- Okinawan diet
- Adventist diet

Personalized meal plans

- Weekly meal plans
- Intake tracking

Time-restricted eating

- 8-12 hours window

Periodic fasting

- Fasting-mimicking diet
- Supplemental intervention

FASTING MIMICKING DIET



Photo credit: L-Nutra

A 5-day structured diet

- Day 1: ~1100 calories
- Days 2 to 5: ~700 calories

FASTING MIMICKING DIET & WEIGHT LOSS



Photo credit: L-Nutra

Three cycles of the FMD, once a month, were clinically shown to help generally healthy individuals lose an average of 5.7 pounds of body weight and 1.6 inches off waist circumference, mainly with trunk fat reduction while preserving lean body mass.

Wei M, Brandhorst S, Shelehchi M, et al. Fasting-mimicking diet and markers/risk factors for aging, diabetes, cancer, and cardiovascular disease. *Sci Transl Med.* 2017;9(377). doi:10.1126/scitranslmed.aai8700

Living Donor Transplant Program
USC Transplant Institute

LIFESTYLE REDESIGN

USC Occupational Therapists specialize in Lifestyle Redesign® interventions

Lifestyle Redesign® is the process of guiding patients in behavior change to incorporate health promoting habits and routines in daily life

OTs help patients implement sustainable lifestyle changes to improve health and quality of life.

USC APPROVED FITNESS



Photo credit: MiniStocker/Shutterstock.com

Focusing on the application of exercise to prevent chronic diseases, improve the cardiovascular system and improve neural plasticity.

*Create a personalized exercise plan to optimize functional movement and body strength.

Living Donor Transplant Program
USC Transplant Institute

FINANCIAL ASSISTANCE & OTHER RESOURCES

National Living Donor Assistance Center

Donor Shield

Champion Microsite Program

DonateWell at USC

Living Liver Donor Virtual Info Session

**Join us and
learn about the
liver donation
process!**

At the info session you will:

- Understand what to expect in preparation for a liver donor evaluation
- Learn health and wellness tips to improve candidacy
- Hear from our USC liver donor ambassadors about their experience
- Ask questions about the program



**Scan this code
to open our
signup link!**

<https://bit.ly/liverlivingdonorinfo>

Info sessions will begin in
January 2023!

Living Donor Transplant Program
USC Transplant Institute

LIVER DONOR CASE FOR DONATEWELL

	Evaluation	Evaluation	Self-report	Self-report	Self-report	Self-report	FMD Cycle 1	Self-report	Self-report	Self-report	FMD Cycle 2	Clinic
Days	1	2	76	86	73	79	81	104	133	138	144	154
BMI		27.7	28.2	28.0	27.9	28.0	26.8	26.8	26.6	26.8	25.8	25.8
Weight (kg)		75.9	75	74.5	74	74.5	71.2	71.2	70.7	71.3	68.6	68.5
Height (cm)		165.4	163	163	163	163	163	163	163	163	163	163
Systolic BP	106											
Diastolic BP	71											
MRI												
Average liver fat		25.10%										4.70%
Glucose	106											101
ALT	38											14
AST	22											14
GGT	23											
Chol	238											194
TG	183											103
HDL	29											34
LDL	172											140
Chol ratio	8.2											5.7

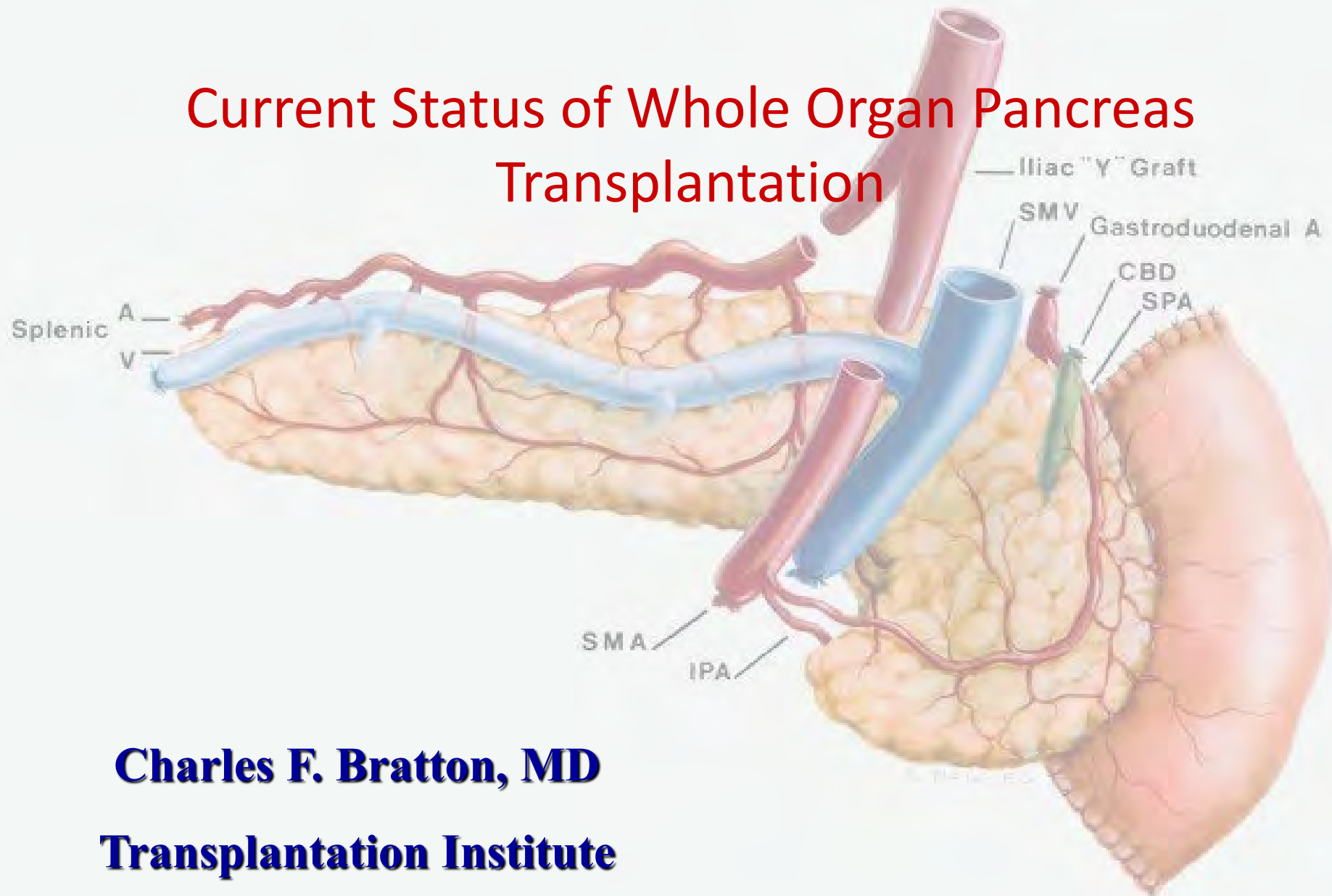
Thank you!

Email:

Susan.Kim2@med.usc.edu

Phone: (323) 442-5908

Current Status of Whole Organ Pancreas Transplantation



Charles F. Bratton, MD
Transplantation Institute

Case Report

- MS 45 yr old WF
 - Type 1 Diabetic since age 13
 - Insulin dependent; C Peptide <0.5
 - Developed renal failure age 33
 - Cad renal transplant in 1988
 - Returned to dialysis in 1998
- Retinopathy, Cataract surgery, Neuropathy with Charcot's joint and ankle fusion
- Hypoglycemic unawareness
 - Two auto accidents
- SPK Transplant Feb 2008
 - Off insulin and dialysis as of Jan 2022



Objectives

- 1. Understand the limits of medical therapy for diabetes
- 2. Understand the indications for whole organ pancreas transplantation
- 3. Understand the benefits of whole organ pancreas transplantation



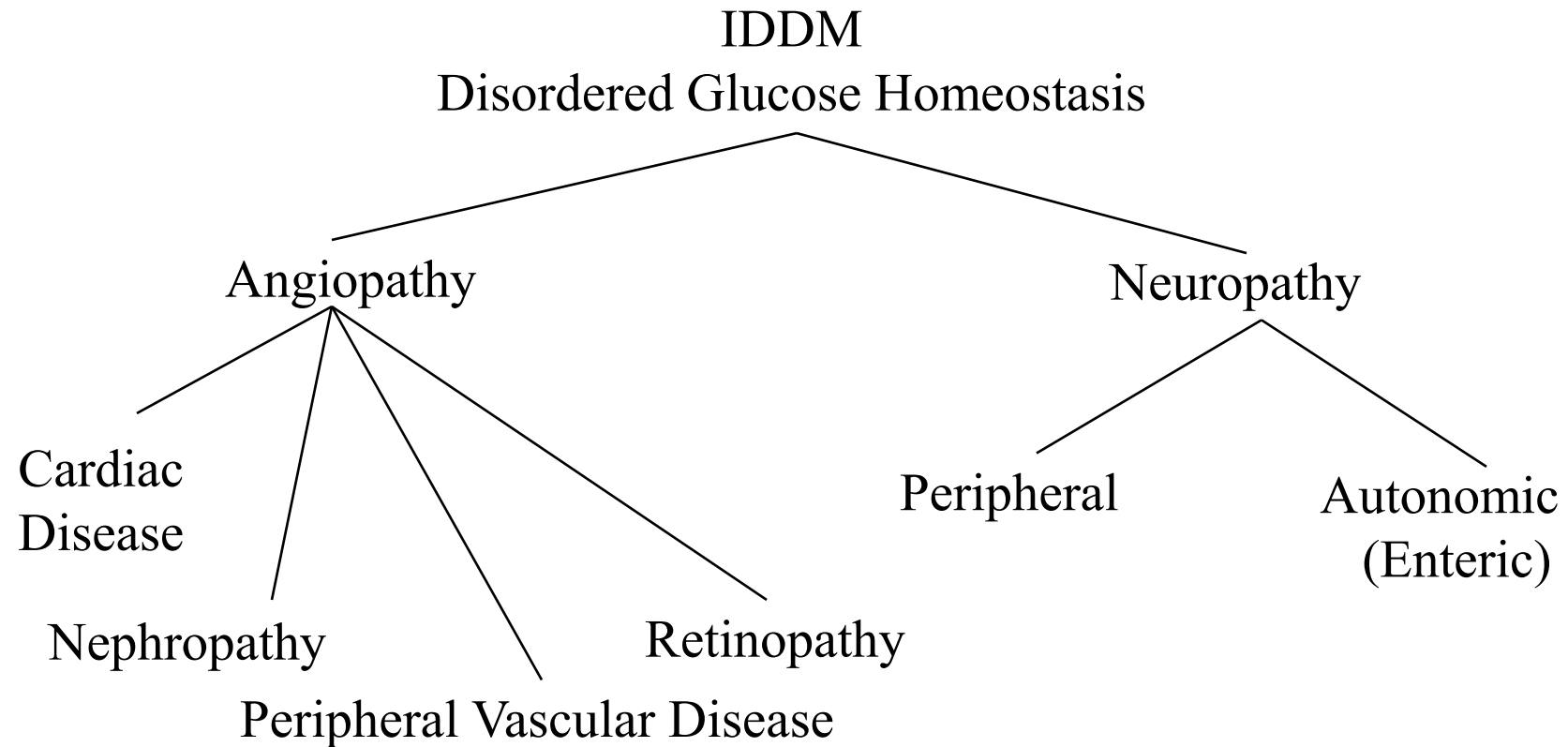
Diabetes Facts

Morbidity and Mortality

- Leading cause of renal failure, adult blindness, neuropathy, and nontraumatic amputations.
- Diabetics 2-4 times more likely to have M.I. or C.V.A.
- Life expectancy averages 15 years less than non-diabetics.

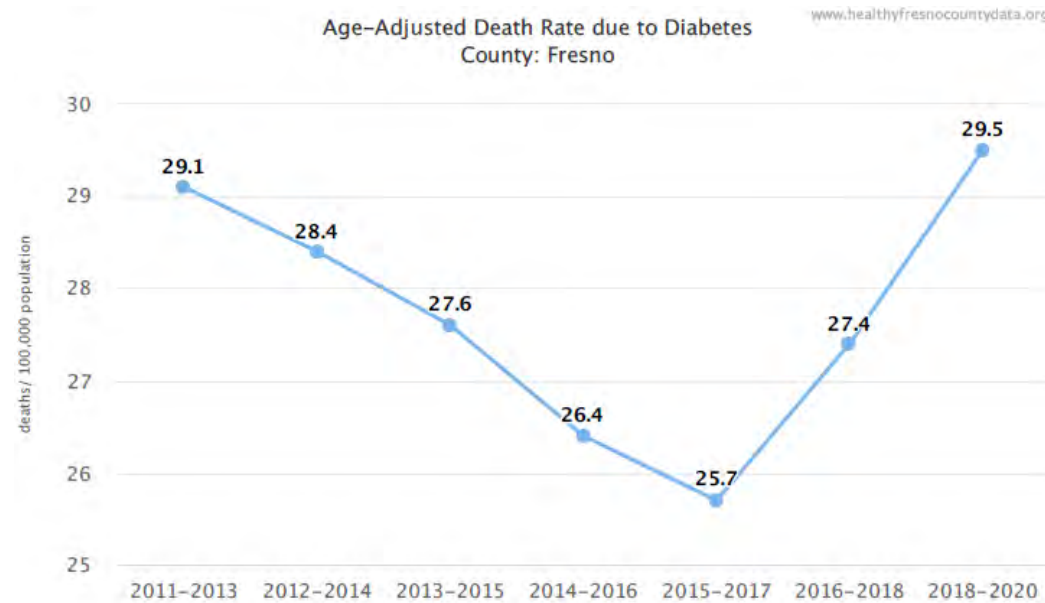


Complications Of Type I DM



Diabetes Facts

- Diabetes was the nation's eighth-[leading](#) cause of death in 2020, accounting for 102,188 deaths annually.
- Currently [37.3 million](#) adults are estimated to have diabetes.
- Diabetes cost the United States an estimated [\\$327 billion](#) in direct medical costs 2017



Source: California Department of Public Health (2018-2020)

Objectives

1. Understand the limits of medical therapy for diabetes



History of Diabetes and the Limitations of Intensive Insulin Therapy

- Early history of diabetes
- Discovery of insulin
- When insulin was found to not be the full answer
- High glucose as the culprit
- Lack of change in the A1c since the DCCT



In 1500 BC

Diabetes First Described In Writing

- Hindu healers wrote that flies and ants were attracted to urine of people with a mysterious disease that caused intense thirst, enormous urine output, and wasting away of the body



250 BC

The Word Diabetes First Used

- Apollonius of Memphis: was born at [Memphis](#) in [Egypt](#) and lived around the 3rd century BC. He wrote a work *On the Names of the Parts of the Human Body*
- Coined the name "diabetes" meaning "to go through" or siphon. He understood that the disease drained more fluid than a person could consume.
- Gradually the Latin word for honey, "mellitus," was added to diabetes because it made the urine sweet.



Aretaeus of Cappadocia

- One of the most celebrated of the ancient Greek [physicians](#)
- Few particulars of his life are known.
- He presumably was a native or at least a citizen of [Cappadocia](#), a Roman province in [Asia Minor](#) (Turkey), and most likely lived around first century CE.
- He is generally styled "the Cappadocian"



150 BC

Aretaeus the Cappadocian

Diabetes is a wonderful affection, not very frequent among men, being a melting down of the flesh and limbs into urine...The flow is incessant, as if from the opening of aqueducts...it takes a long period to form, but the patient is short-lived...for the melting is rapid, the death speedy.

Moreover, life is disgusting and painful; thirst unquenchable; excessive drinking...and one cannot stop them either from drinking or making water... they are affected with nausea, restlessness, and a burning thirst; and at no distant term they expire.

Early Diabetes Treatments

- In 1000, Greek physicians recommended horseback riding to reduce excess urination
- In the 1800s, bleeding, blistering, and doping were common
- In 1915, Sir William Osler recommended opium
- Overfeeding was commonly used to compensate for loss of fluids and weight
- In the early 1900s a leading American diabetologist, Dr. Frederick Allen, recommended a starvation diet



Oskar Minkowski (1858 - 1931)

- Held a [professorship](#) at the [University of Breslau](#) (Wroclaw) and is most famous for his research on diabetes.
- He was the brother of the [mathematician Hermann Minkowski](#) and father of [astrophysicist Rudolph Minkowski](#).



Early Research

- In 1798, John Rollo documented excess sugar in the blood and urine
- In 1813, Claude Bernard linked diabetes to glycogen metabolism
- In 1869, Paul Langerhans, a Berlin medical student, discovered islet cells in the pancreas
- In 1889, Joseph von Mehring and Oskar Minkowski created diabetes in dogs by removing the pancreas
- In 1910, Sharpey-Shafer of Edinburgh suggested a single chemical was missing from the pancreas. He proposed calling this chemical "insulin."
- The term "insulin" originates from *insula*, the Latin word for islet/island.



Before Insulin



JL on 12/15/22 and 2 mos later

Before insulin was discovered in 1921, everyone with type 1 diabetes died within weeks to years of its onset



1922 Leonard Thompson



- In Jan, 1922, **Frederick Banting** and **J.J.R. Macleod** injected a 14-year-old "charity" patient who weighed 64 lb with 7.5 ml of a "thick brown muck" in each buttock
- Abscesses developed and he became more acutely ill
- However, his blood glucose had dropped enough to continue refining what was called "iletin" insulin
- 6 weeks later, a refined extract caused his blood glucose to fall from 520 to 120 mg/dL in 24 hours
- Leonard lived a relatively healthy life for 13 years before dying of pneumonia (no Rx then) at 27

Impact Of Insulin On Life Expectancy By The 1940' s

Age at start of diabetes	50	30	10
Avg. age of death in 1897	58.0	34.1	11.3
Avg. age of death in 1945	65.9	60.5	45.0
Years Gained	8	26	34

Not A Cure

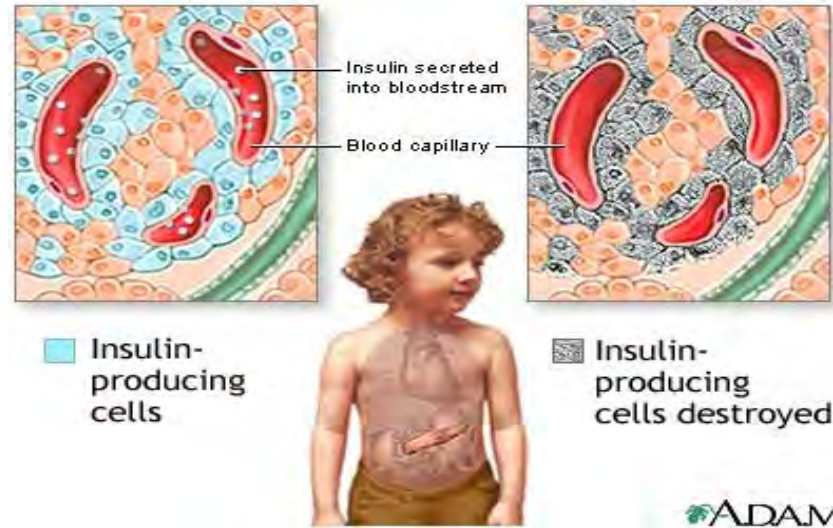


- Some early users died of hypoglycemia, but insulin seemed a remarkable cure.
- By the 1940's, however, diabetic complications began to appear
- It became clear that injecting insulin was not the full answer



What Caused Complications?

High Glucose Versus Genes



During the middle of the 20th century, it was unclear whether better glucose control could prevent diabetes complications

DCCT And Other Studies

Research studies between 1970 and 2000 showed that complications could be prevented by lowering high glucose levels

Studies

- DCCT Diabetes Control and Complications Trial (DCCT)1984-1992
- EDIC Epidemiology of Diabetes Interventions and Complications (EDIC)1996
- UKPDS 1978-1998
- Kumamoto 1992-2000

Results

- Better health
- Fewer complications
- Improved sense of well-being
- More flexible lifestyle



Diabetes Control and Complications Trial (DCCT)

- The Diabetes Control and Complications Trial (DCCT), an NIH-funded clinical trial, was conducted from 1983 to 1993.
- Compared effects of two diabetes treatment regimens – standard therapy and intensive control – on the complications of diabetes in people with type 1 diabetes

DCCT Findings

- **Glucose control** is key to preventing or delaying complications of diabetes
 - The DCCT showed that tight glucose control slows the onset and progression of the microvascular complications of diabetes—eye, kidney, and nerve diseases.
- **Any sustained lowering of blood glucose helps**, even if the person has a history of poor control

DCCT Findings

Lowering blood glucose reduced risk of:

- Eye disease by 76%
- Kidney disease by 50%
- Nerve disease by 60%

Epidemiology of Diabetes Interventions and Complications Study (EDIC)

Observational study began in 1994

(EDIC) followed participants previously enrolled in the (DCCT) – those enrolled in the DCCT had type 1 diabetes.

Looked at risk factors for long-term complications:

Determined whether the use of intensive therapy, as compared to conventional therapy during the time period people were enrolled in the DCCT, affected the long-term incidence of cardiovascular disease.

EDIC Findings: Intensive Therapy and Diabetes Complications

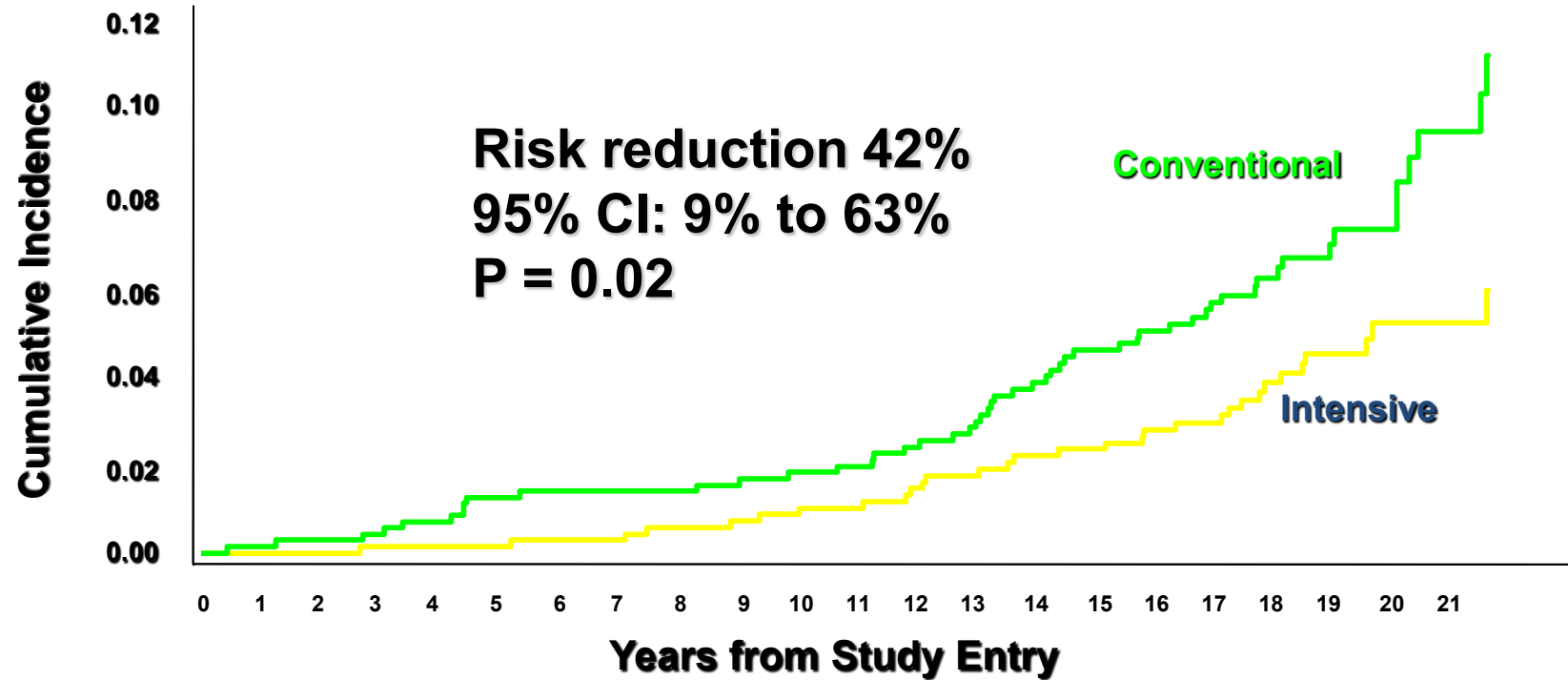
Participants continue to benefit years later from period of intense glucose control

Years after intensive therapy:

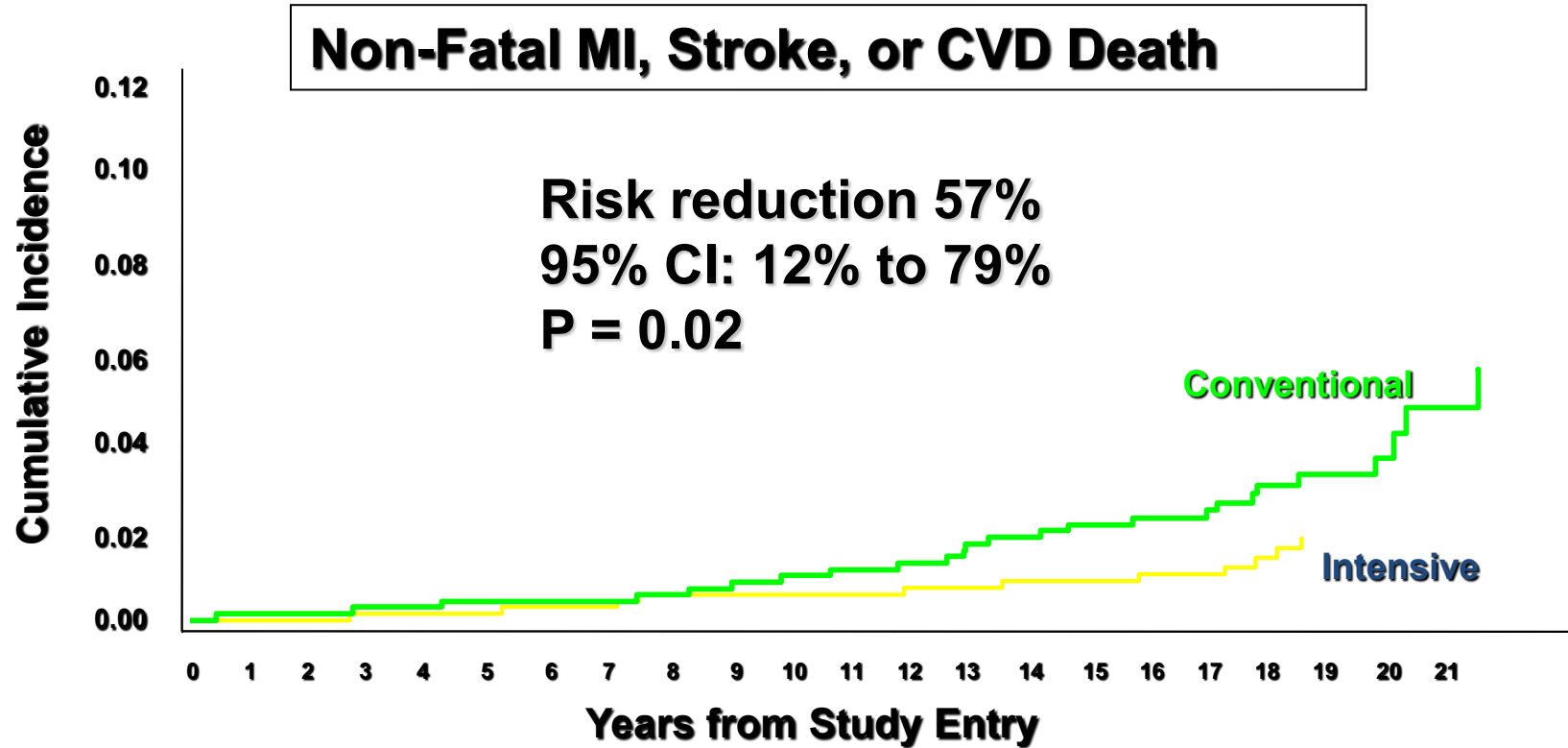
- Lasting benefits for eye, nerve, and kidney disease
- Reduces CVD events by more than half

EDIC Findings: Cardiovascular Events

Cumulative Incidence of First of Any Event



EDIC Findings: Cardiovascular Events



DCCT/EDIC N Engl J Med 2005; 353:2643-2653.

Key points of recent findings:

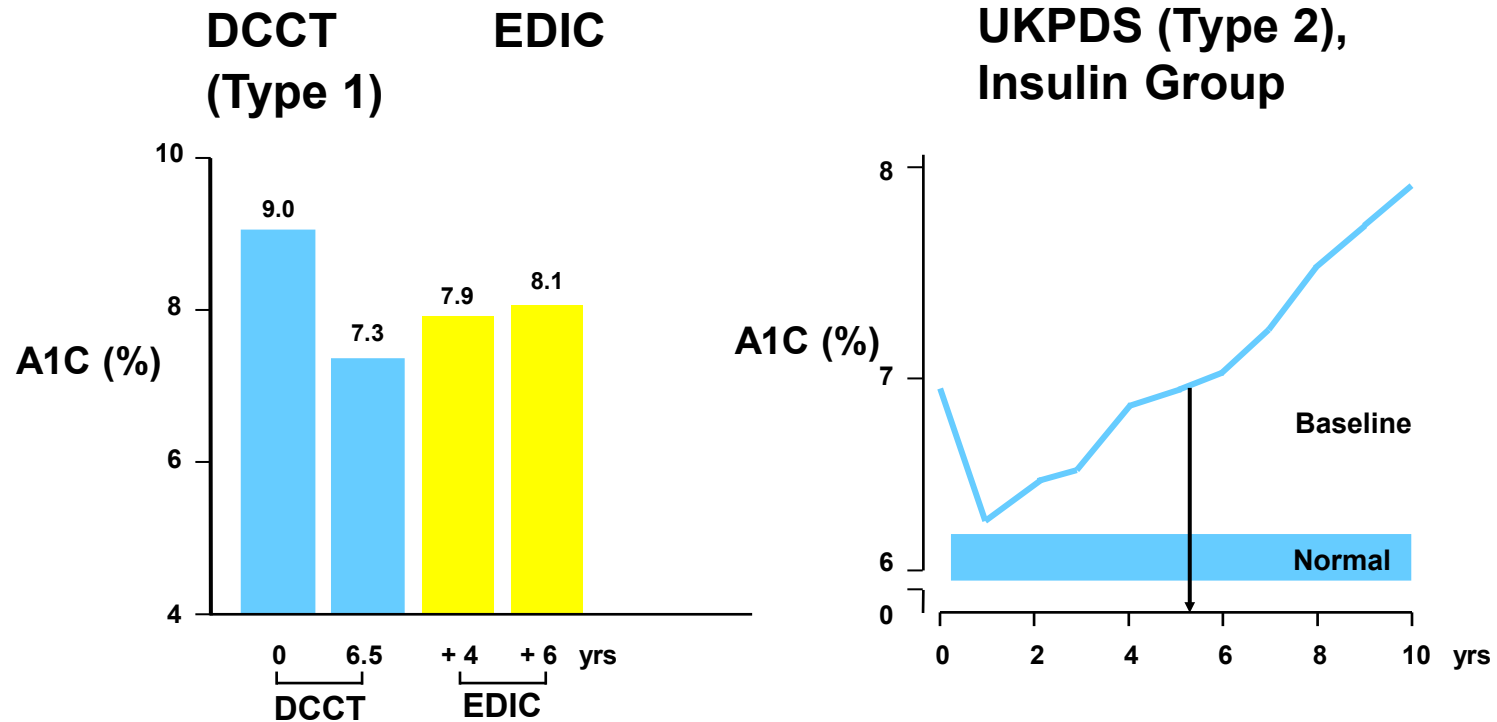
- Intensive glucose control in newly diagnosed type 1 or type 2 diabetes has benefits during intensive therapy AND a legacy effect for later micro- and macrovascular benefits
- Optimal glucose management should start as early as possible & continue as long as possible
- **While the A1C goal for the general population is <7%, treatment must be individualized.**

Limitations of DCCT/EDIC

- Limited enrollment: 1,441 (1989) volunteers with DM1 and 4 yr follow up for full cohort
- All patients has minimal secondary complications and did not study patients with severe complications or limited life expectancy
 - 726 had no retinopathy
 - 715 had limited retinopathy
- Severe hypoglycemia
 - 200%-300% increase in severe hypoglycemia
 - 3.9% mortality, mostly due to hypoglycemia



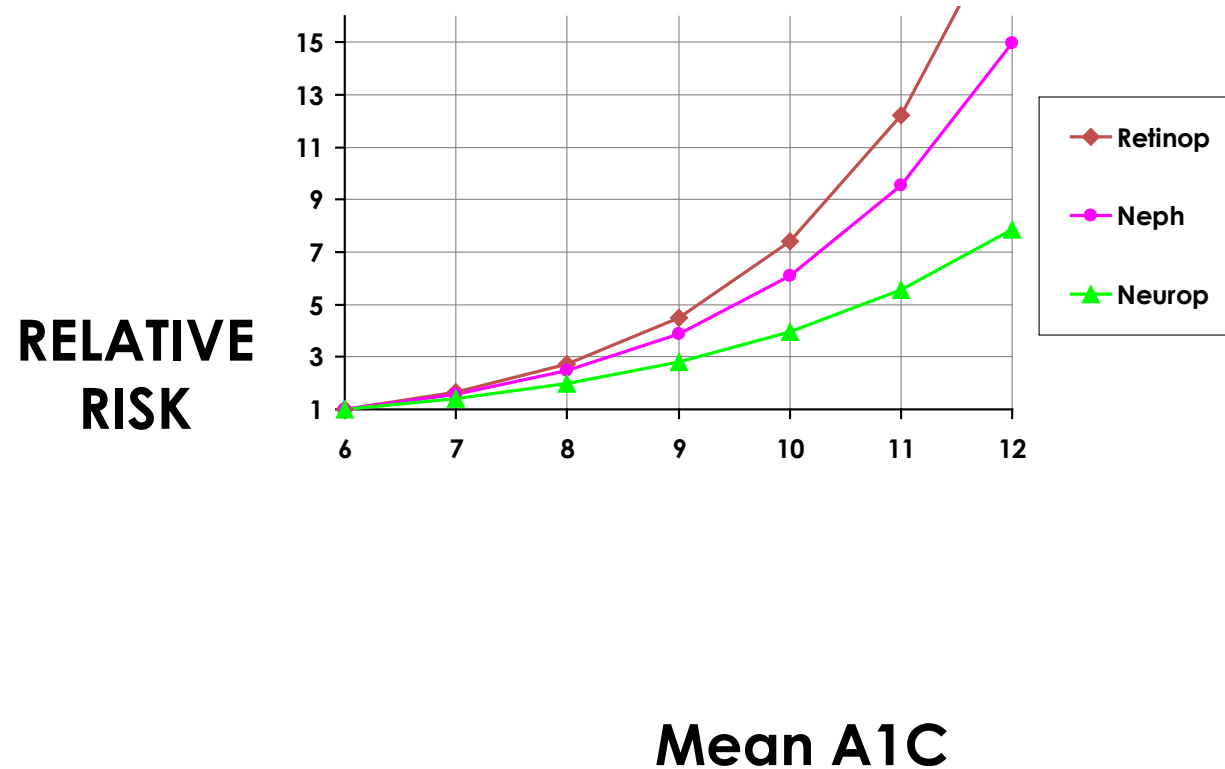
Lessons from the DCCT and UKPDS: Sustained Intensification of Therapy is Difficult



DCCT/EDIC Research Group. *New Engl J Med* 2000; 342:381-389
Steffes M et al. *Diabetes* 2001; 50 (suppl 2):A63
UK Prospective Diabetes Study Group (UKPDS) 33
Lancet 1998; 352:837-853



Relative Risk of Progression of Diabetes Complications (DCCT)



DCCT Research Group, *N Engl J Med* 1993, 329:977-986.

Metabolic follow-up after long-term pancreas graft survival

Table 2 Parameters of pancreas and kidney graft function from 3 months to 10 years after simultaneous pancreas/kidney transplantation.

	3 months (n=38)	1 year (n=38)	3 years (n=38)	5 years (n=38)	10 years (n=38)	P
Fasting blood glucose (mg/dl)	78±2	81±2	82±2	84±2	91±2	<0.01 ^{a,b,c,d,e}
HbA _{1c} (%)	4.6±0.1	4.9±0.1	4.9±0.1	5.0±0.1	5.3±0.2	<0.001 ^{f,a,b,d,g,h}
120 min glucose (mg/dl)	118±7	122±9	110±9	118±9	150±13	<0.05 ^{d,g,i}
Normal glucose tolerance (%)	67	56	68	66	37	<0.05 ^{b,g,i}
BMI (kg/m ²)	21.1±0.4	21.9±0.5	22.4±0.5	22.8±0.5	23.5±0.7	<0.05 ^{a,b,c,d,g}
Fasting insulin (μU/ml)	21±2	23±2	18±1	18±1	16±1	<0.05 ^d
AUC _{insulin} (μU/ml×min)	11 735±1365	11 754±985	11 215±886	11 801±995	11 772±1074	Ns
Incremental insulin ΔI ₃₀ /ΔG ₃₀ (μU/ml)	221±50	176±28	157±28	157±22	168±36	Ns
HOMA-IR	4.1±0.4	4.5±0.5	3.7±0.3	3.7±0.3	3.5±0.3	Ns
Matsuda-deFronzo ISI	3.6±0.4	2.9±0.2	3.5±0.3	3.1±0.2	3.2±0.3	Ns
S-creatinine	1.3±0.1	1.3±0.1	1.4±0.1	1.5±0.1	1.5±0.1	Ns

Mean±S.E.M. ANOVA with repeated measurements.

^a3 months versus 5 years. ^b3 months versus 10 years. ^c1 year versus 5 years. ^d1 year versus 10 years. ^e1 year versus 3 years. ^f3 months versus 1 year. ^g3 years versus 10 years. ^h3 years versus 5 years. ⁱ5 years versus 10 years. ³3 months versus 3 years.

Dieterle CD, Arbogast H, Illner WD, Schmauss S, Landgraf R

Eur J Endocrinol 2007 May;156(5):603-10.



LOMA LINDA UNIVERSITY
HEALTH

Transplant Institute

Objectives

- 2. Understand the indications for whole organ pancreas transplantation
 - INSULIN DEPENDENT DM!



Rationale for Pancreas Transplantation (β cell replacement therapy)

- Microvascular complications result from long-term hyperglycemia.
 - Glycosylation of circulating and membrane-bound proteins.
 - BM thickening and microangiopathy.
- **Even tight glucose control can not achieve glucose metabolism of endogenous insulin source.**



Rationale for Pancreas Transplantation

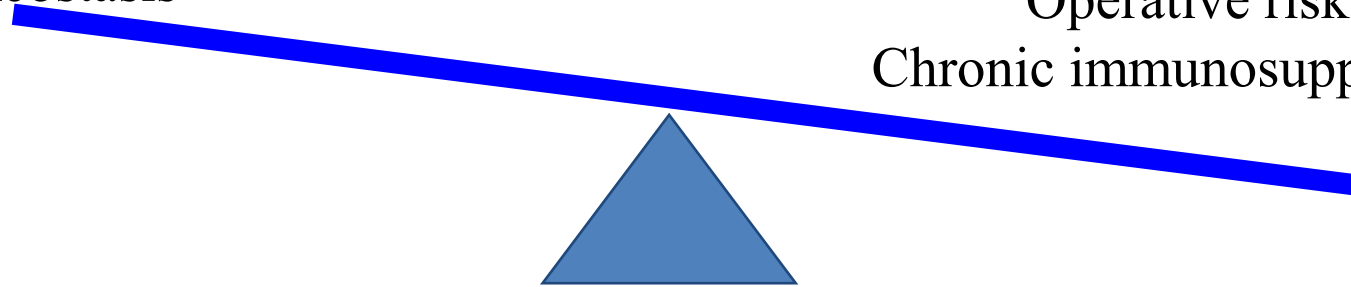
- Developed to provide an autoregulating endogenous source of insulin responsive to normal feedback controls.
- Only known therapy that establishes insulin-independent state with complete normalization of glycosylated hemoglobin.



Rationale for Pancreas Transplantation

Normal
glucose
homeostasis

Operative risks
Chronic immunosuppression



Options for Replacement of Pancreatic Endocrine Function



Transplantation



Whole Organ Pancreas



Islets of Langerhans

Background

- 1966 - First pancreas transplant (PTx) by William Kelly and Richard Lillehei at University of Minn.
- Early 1980' s - Low level of clinical activity. Only a few of early attempts successful.
- Early attempts limited by:
 - Poor patient and graft survival
 - Difficulties with organ preservation
 - Management of exocrine secretions.



Surgical Techniques

History

- **1966 Kelly** (Minnesota) - First PTX. SPK with segmental pancreas, ligation of duct.
- **1966-73 Lillehei** (Minnesota) - Whole organ pancreaticoduodenal technique. Stoma or duodenoenterostomy.
- **1973 Gliedman** (Montefiore, NY) - Segmental graft. Duct to ureter anastomosis.
- **1975 Groth** (Sweden) - Segmental graft with Roux-en-Y.
- **1982 Sollinger** (Wisconsin) - Whole organ with anastomosis of duodenal button, containing ampulla, to bladder.
- **1987 Corry, Nghiem (Iowa)** - Whole organ graft with anastomosis of duodenal segment to bladder.



1966-1973

- 14 pancreas transplants performed
- 1st : William Kelly and Richard Lillehei collaborated: Duct ligated segmental graft
- Next 13 whole organ transplants
- 5/13 with cutaneous graft duodenostomy
- 7/13 with Roux enteric anastomosis
- 1/13 with graft papilla of Vater to small bowel anastomosis



1966-1973

- The 1st 11 cases were performed in uremic diabetics as SPK in 10 and pta in 1
- Lellehei switched to PTA in non uremic DM1 in 3 pts. All failed from rejection
- None of pancreas in uremic pts were loss to rejection (first series to make a distinction in immunologic risk SPK vs PTA



1978-1986

- All except U Minn preformed SPK
- U Minn only preformed pancreas alone
 - Including a PTA with open duct drainage functioning for 17 yrs
 - Multiple methods to handle exocrine secretions:
 - open duct 1978, duct injection 1980, enteric drainage
 - Following Sollinger et al in early 1980' s whole graft with bladder drainage



Eras 3 and 4

- Cyclosporine 1980' s -1994
- Tacrolimus 1994 -

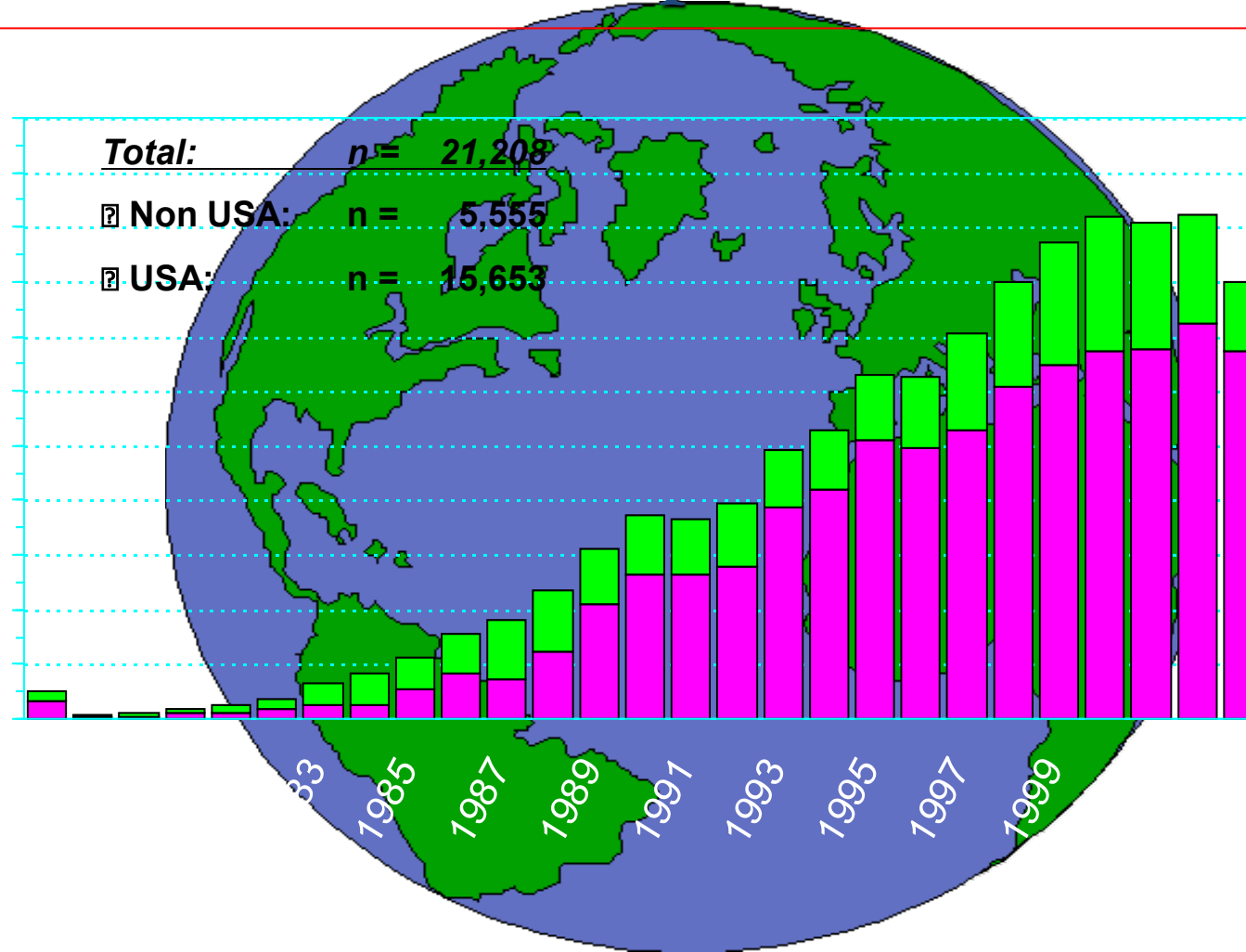


Types of Pancreas Transplants

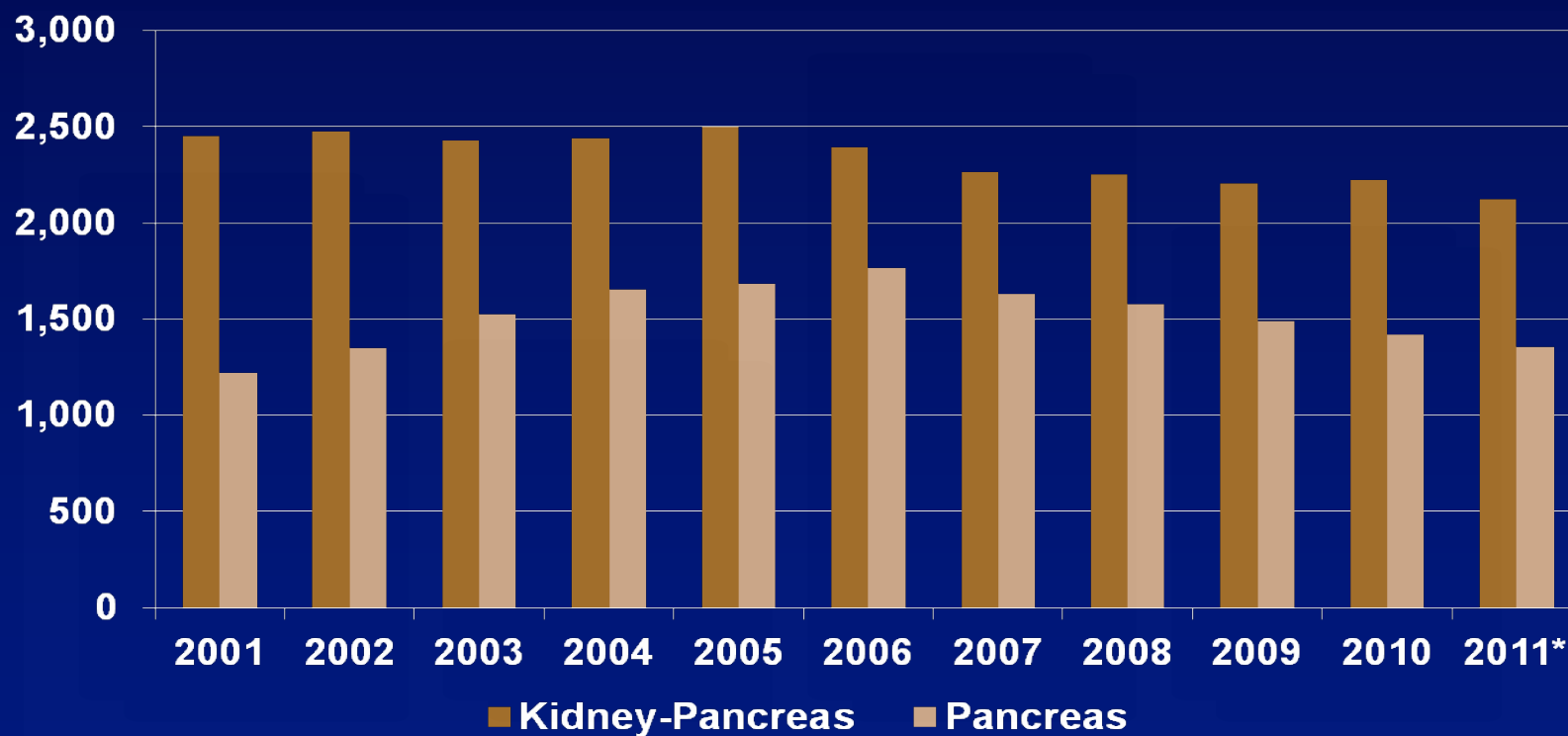
- **SPK**-Simultaneous **K**idney **P**ancreas transplantation –Type1 Diabetics with ESRD
- **PAK**- **P**ancreas **A**fter **K**idney transplantation- Type1 Diabetics who have a functioning Renal Transplant
- **PTA**- **P**ancreas **T**ransplant **A**lone- Type1 Diabetics who have intact renal function



Pancreas Transplants Worldwide



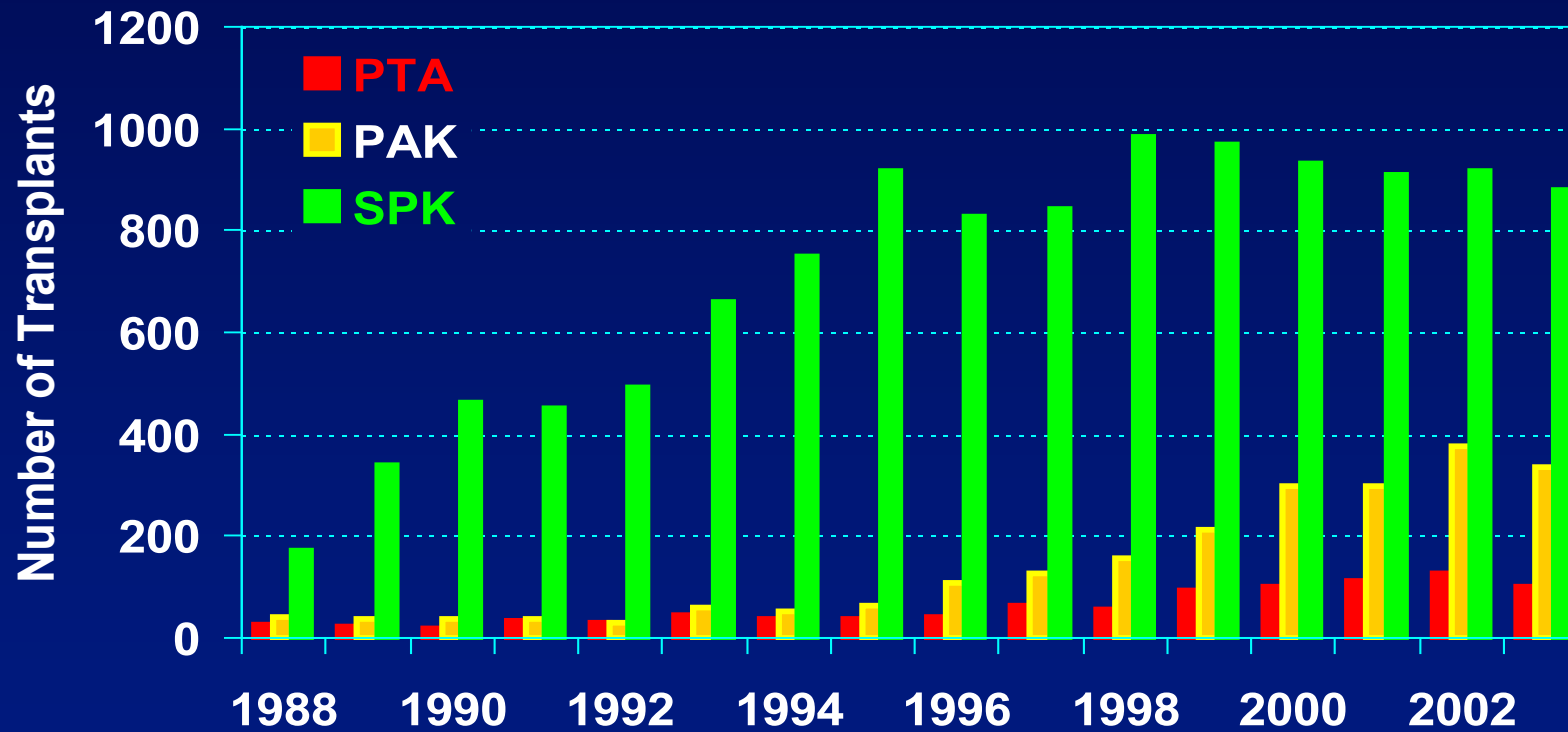
Kidney-Pancreas and Pancreas Waiting Lists in the US 2001-2011*



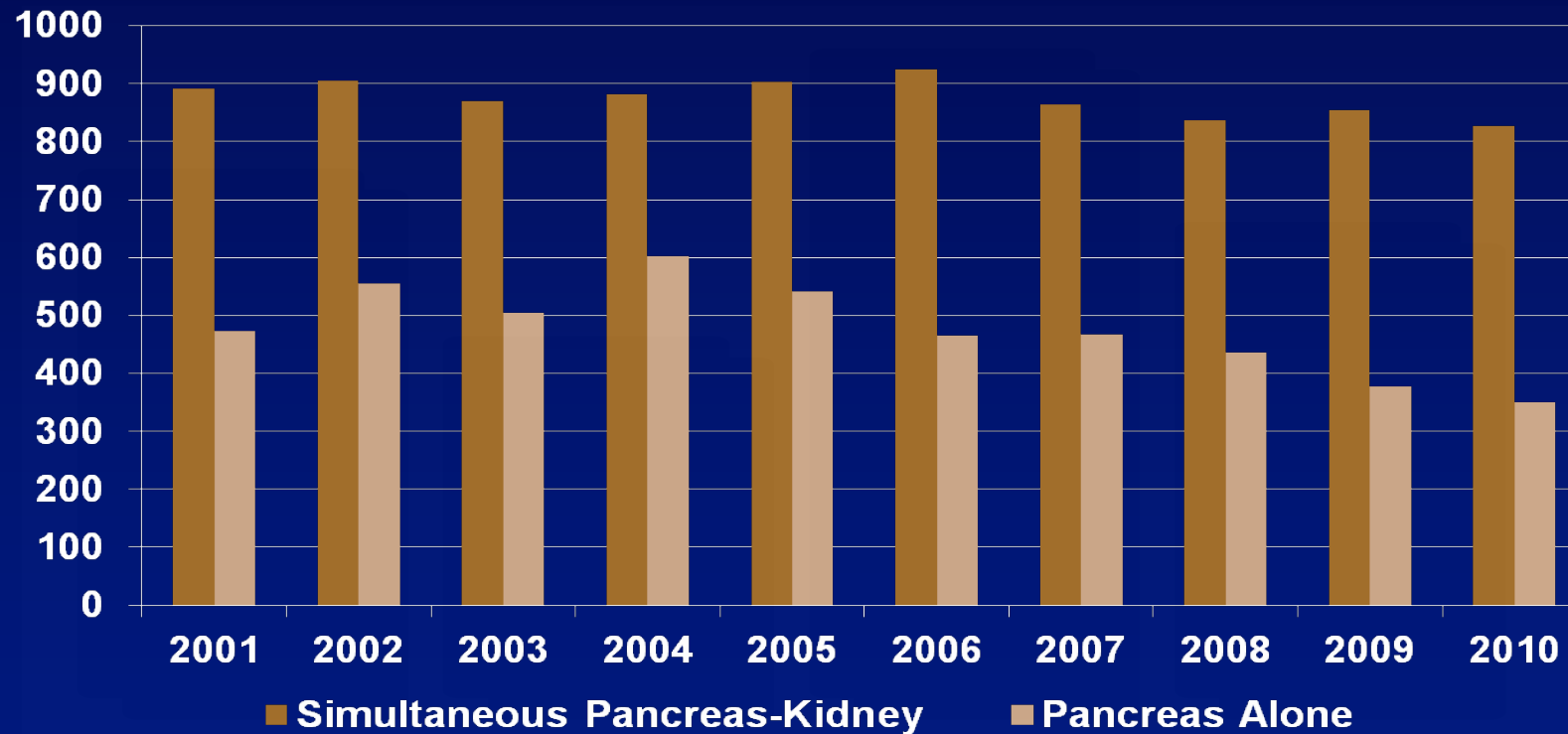
*On December 31 of each year except 2011, which is on September 30, 2011.

Pancreas Transplant Categories

USA SPK, PAK and PTA Transplants 1988-May 15, 2003



SPK and PA Transplants in the US 2001-2010



*On December 31 of each year except 2011, which is on September 30, 2011.

Why Pancreas Transplantation?

Pancreas Transplantation is
Life Saving Procedure!

Survival Benefit of SPK

Patient Survival at 4yrs

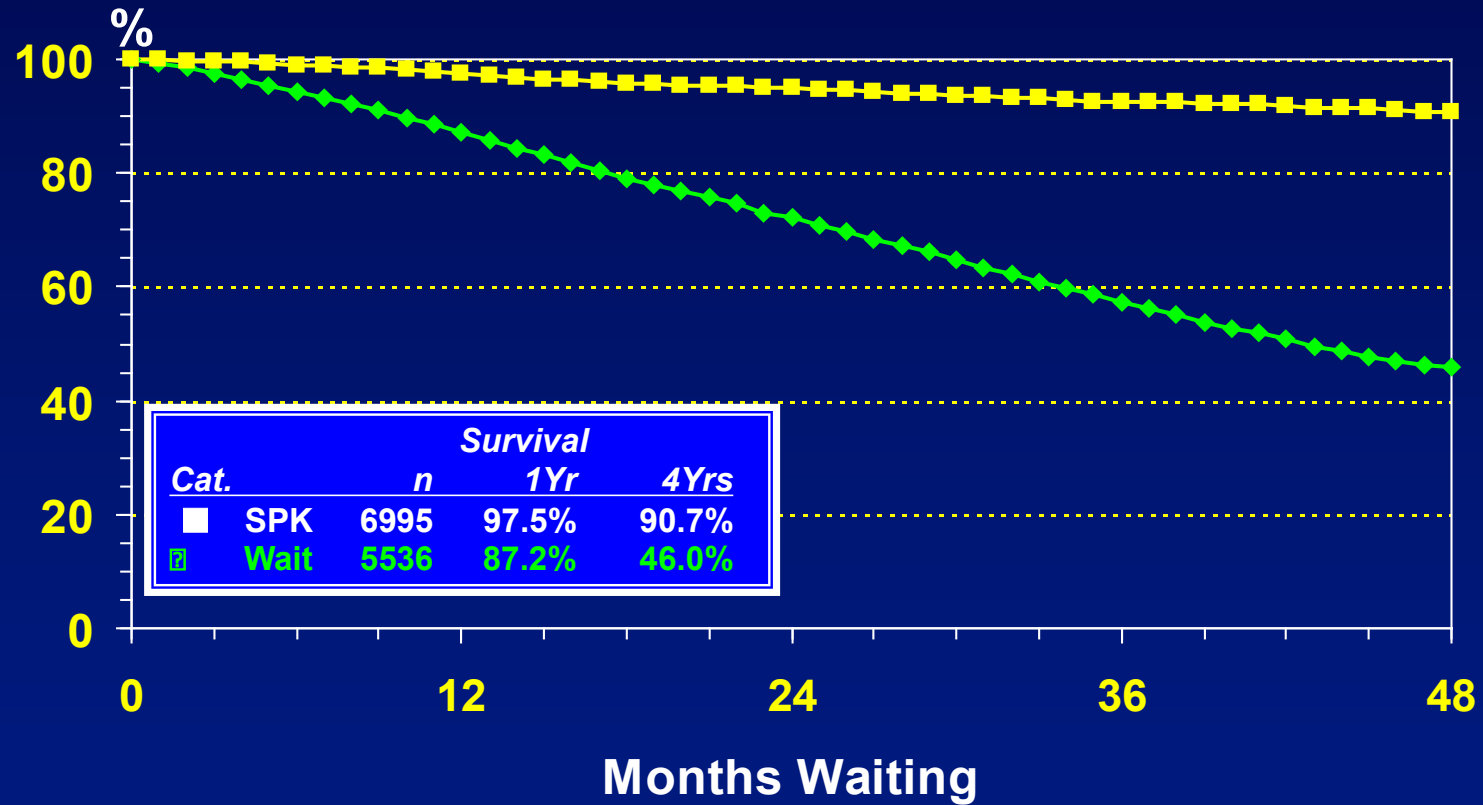
SPK	90.3%
SPK wait list	58.7%
PAK	88.3%
PAK wait list	81.7%

IPTR/UNOS Greussner et al AJT 2004, 4:2018

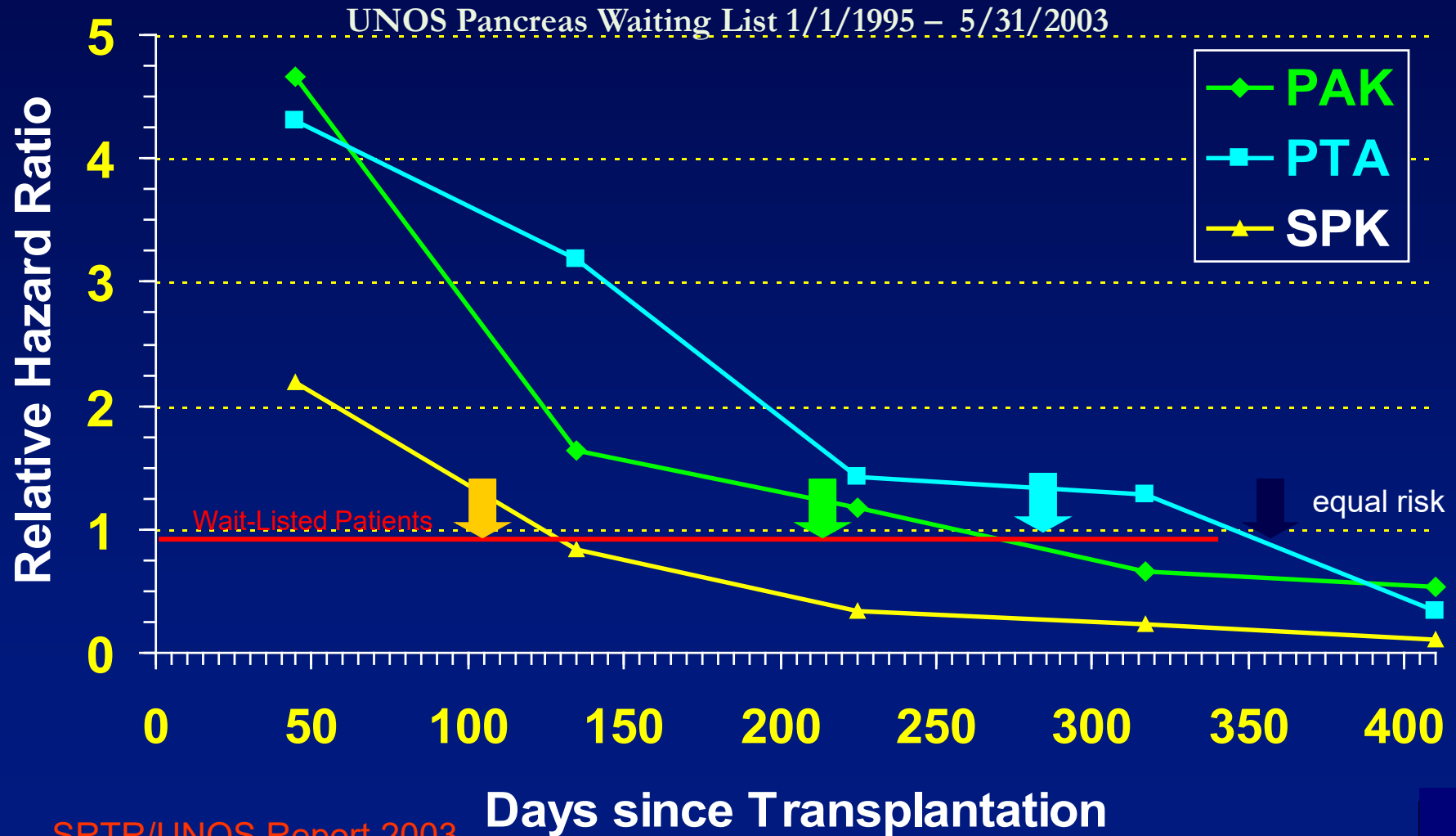


Patient Survival from Time of Listing

UNOS Pancreas Waiting List 1/1/1995 □ 5/31/2003



Relative Hazard Ratios



Who is a candidate?

(Indications and Patient Selection)

- Type DM (C Peptide $<0.5\mu\text{mol/L}$) or Insulin dependent DM
- Ability to withstand surgery (Cardio vascular)
- Withstand immunosuppression.
- Emotional and psychosocial suitability.
- Age < 60 / physiologic reserve
- Presence of secondary diabetic complications (neuropathy, retinopathy, gastropathy, nephropathy, **hypoglycemic unawareness**)



What Determines Success in Pancreas Transplantation?



Indications and Patient Selection

Exclusion Criteria

- Insufficient cardiovascular reserve.
- Ongoing substance abuse.
- Major ongoing psychiatric illness.
- Significant history of noncompliance.
- Active infection or malignancy.
- Lack of well-defined diabetic complications.
- Significant obesity (>50% ideal BW)
- Lack of insight.



Evaluation of Potential recipient

- Cardiovascular Disease
 - Present in up to 80%
 - Major cause of post transplant mortality
- Screening
 - Non invasive
 - Cardiac cath
- Peripheral vascular disease
 - ABI – may not be reliable due to calcification
 - Arteriogram
- Exclude active infection or malignancy



Donor Selection and Management

Indications

- Brain death
- Informed consent
- Age 6-55
- Weight 30-100kg
- Hemodynamically stable
- No infectious disease
- Negative serology
- Absence of malignancy
- Absence of pancreatic disease

Contraindications

- Type I or II DM
- Pancreatic surgery
- Pancreatic trauma
- Pancreatitis
- Intraabd. infection
- Major infection
- Chronic ETOH
- Recent IVDA
- High risk behavior
- Prolonged hypotension/
hypoxia w/ end organ
damage

Donor Selection and Management

Pancreas Donor Risk:

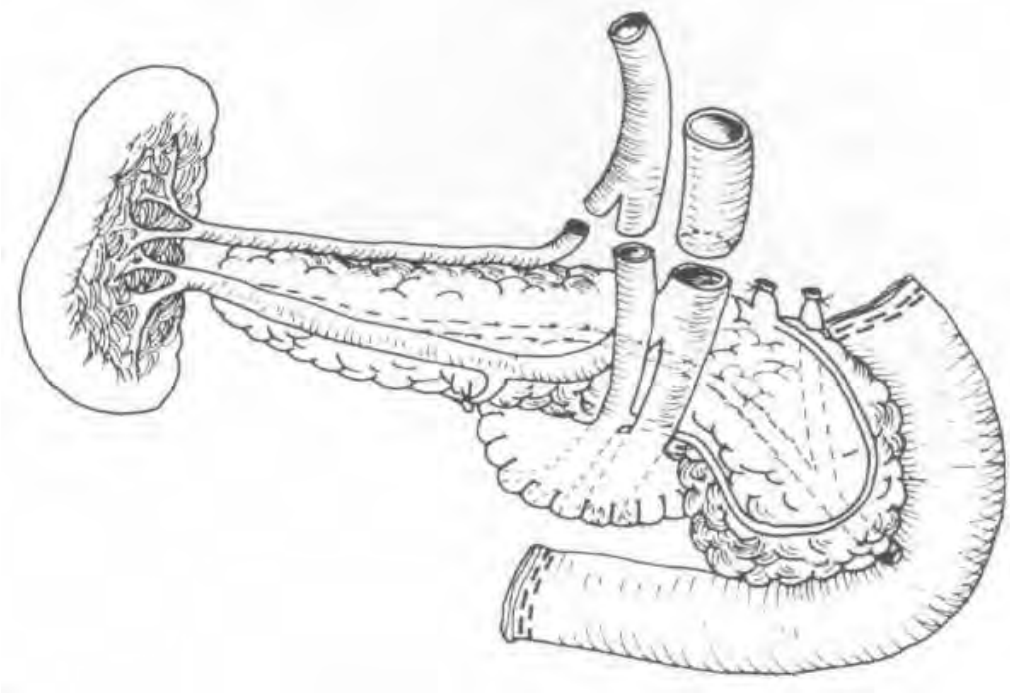
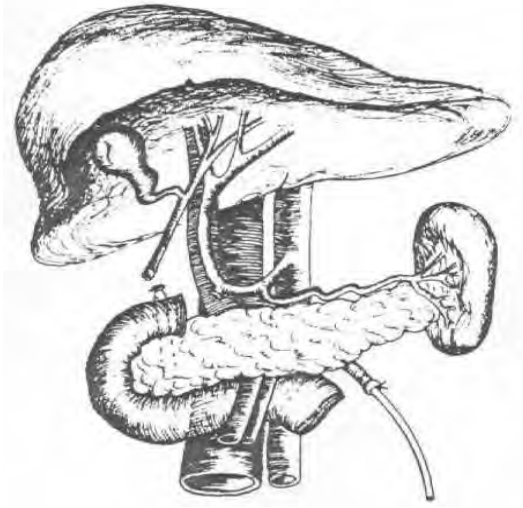
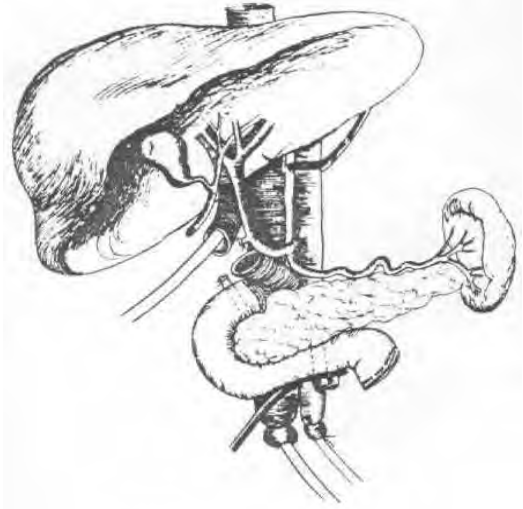
- Age (28)
- Gender (Female)
- Ethnicity (AA/Asian)
- Creatinine (1.0 mg/dL)
- Body Mass Index (25)
- Height (173 cm)
- Cause of death by CVA
- Donation after cardiac death
- Cold ischemic time (>12 hrs)

Organ Procurement

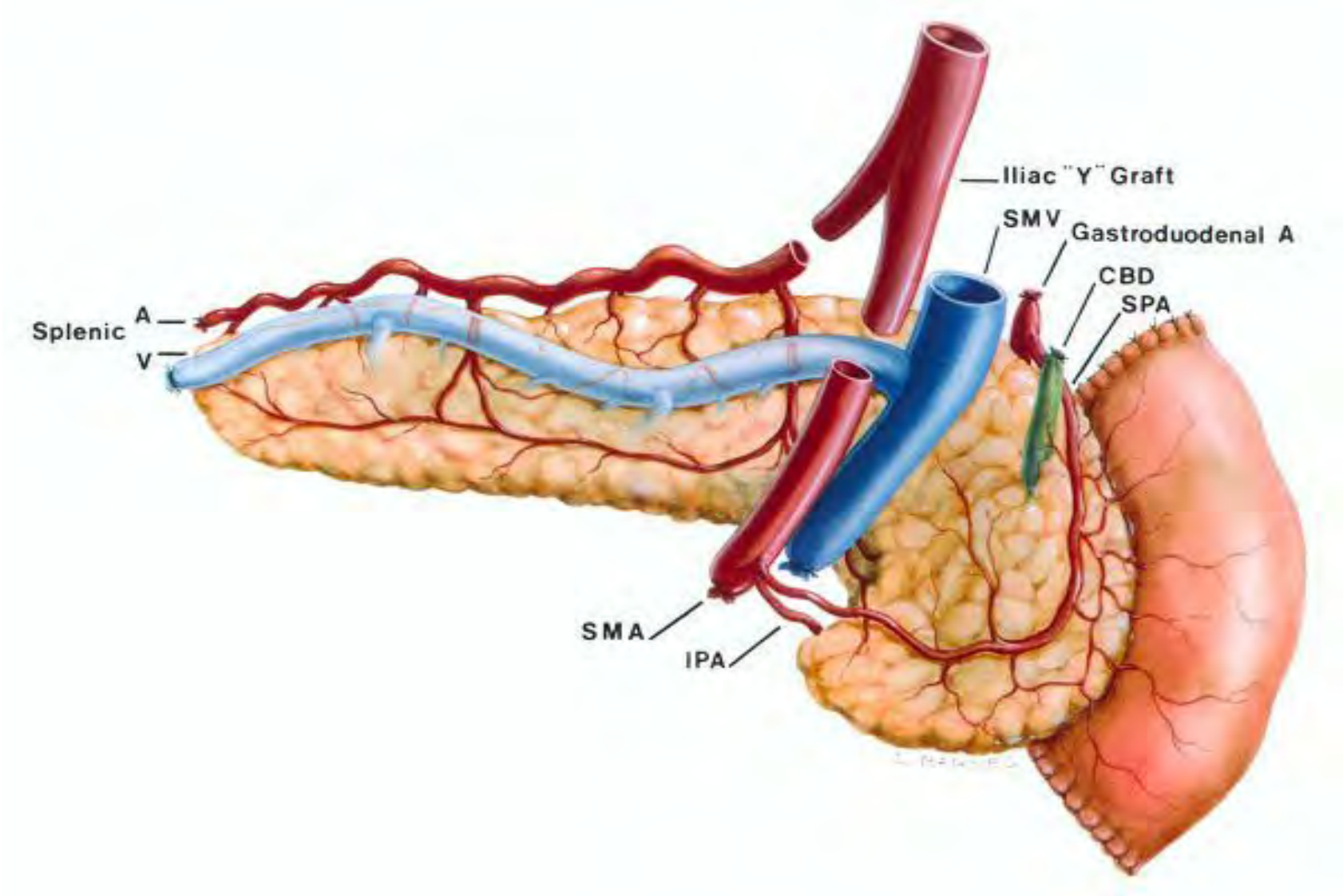
- In past, could use either liver or pancreas, but not both, from same donor.
 - Fear of compromising anatomic/functional integrity.
- Procurement of liver and pancreas from same donor now routine.
- Enbloc hepatico-pancreatico-duodeno-splenectomy with backtable separation.
- Technically demanding. Success influenced by expertise of retrieval.



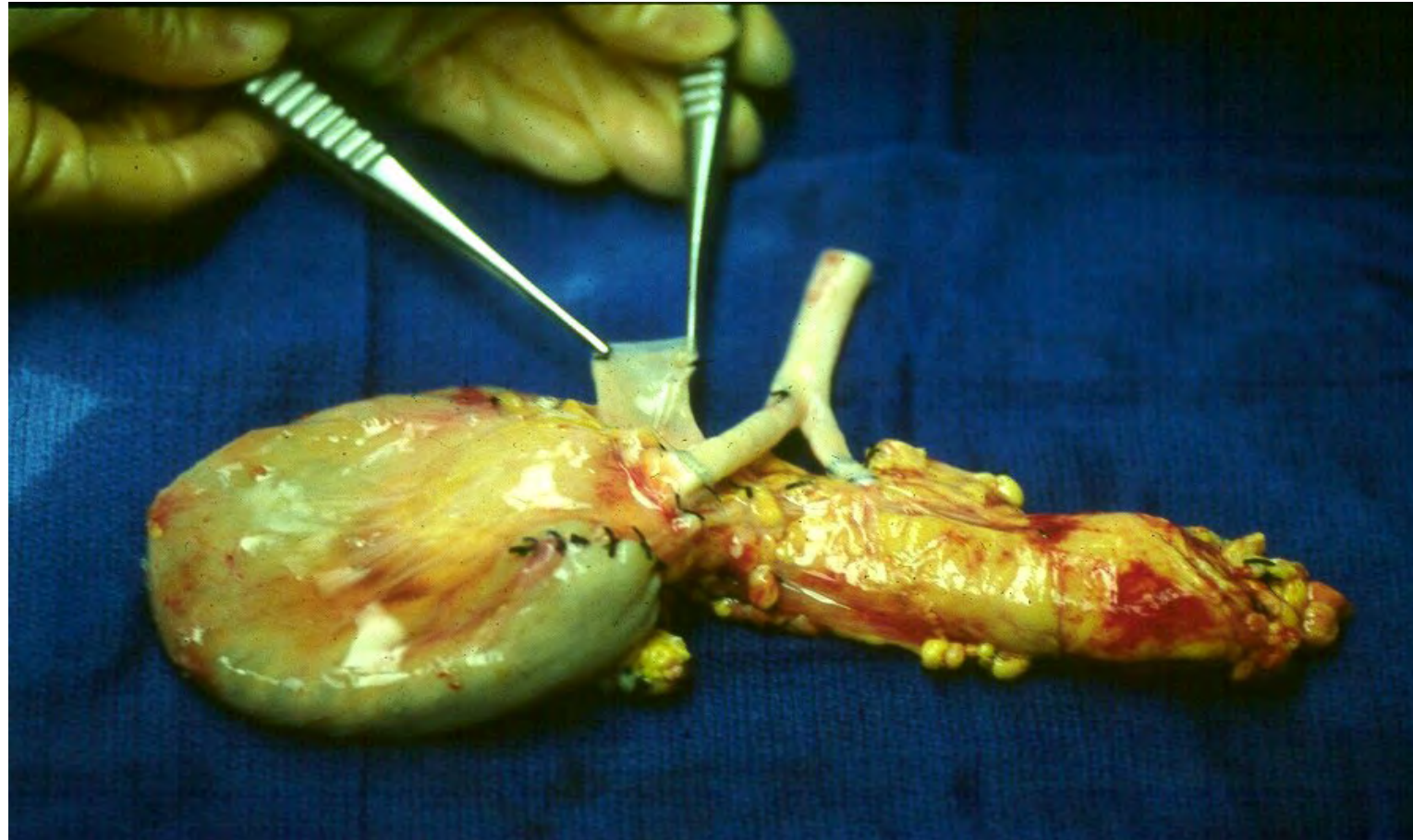
En bloc Retrieval and Vascular Reconstruction



Pancreas Transplant -Donor



Pancreas after back table preparation completed



Preservation

- Introduction of UW solution has allowed for:
 - Safe and extended cold storage for up to 30 hrs.
 - Distant organ procurement and sharing.
 - Minimal organ waste.
 - Improved efficiency of retrieval.
 - Time for X-match and recipient preparation.
 - Better initial graft function with fewer complications (ie. pancreatitis, vascular thrombosis).



Surgical Techniques

Operative Approach

- **Traditional**
 - Pancreas in R. iliac fossa. Vessels more superficial. Kidney in L. iliac fossa.
 - Midline incision - shortens procedure but exposure limited
 - Separate incisions - lengthens procedure, but separates PTx and KTx (retroperitoneal). Protects KTx from PTx anastomotic leak.
- Portal enteric requires midline
- Kidney transplanted first if total preservation time is < 16 hours



Surgical Techniques

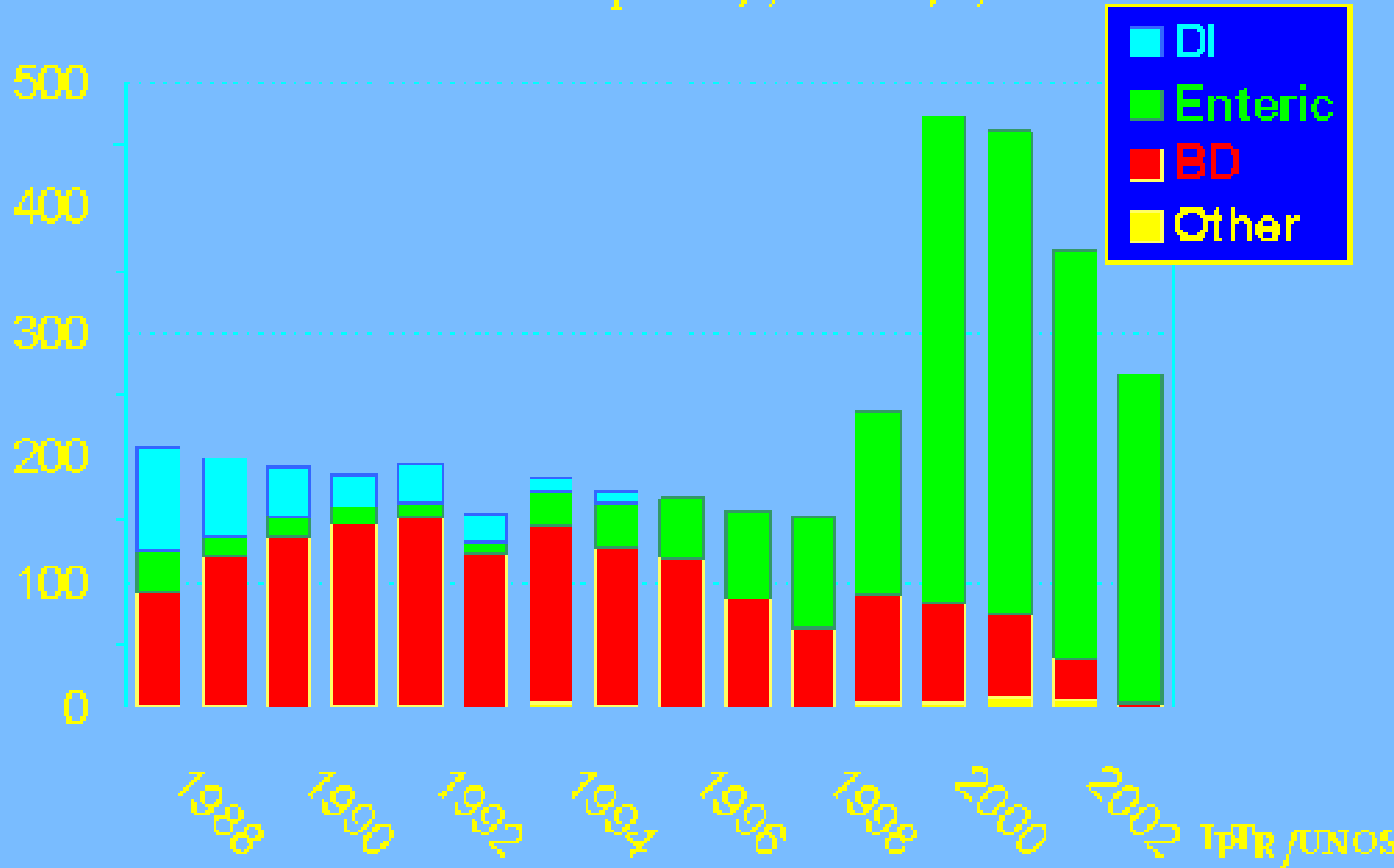
Enteric Drainage of Exocrine Secretions

- Initially avoided because of widespread belief that it was associated with increased surgical complications and lower graft survival.
- Since 1995, shift back to enteric drainage.
 - Avoids urologic and metabolic complications associated with BD.
 - More physiologic.
 - Recent studies - No sig. difference in graft survival or surgical comps. compared to BD.



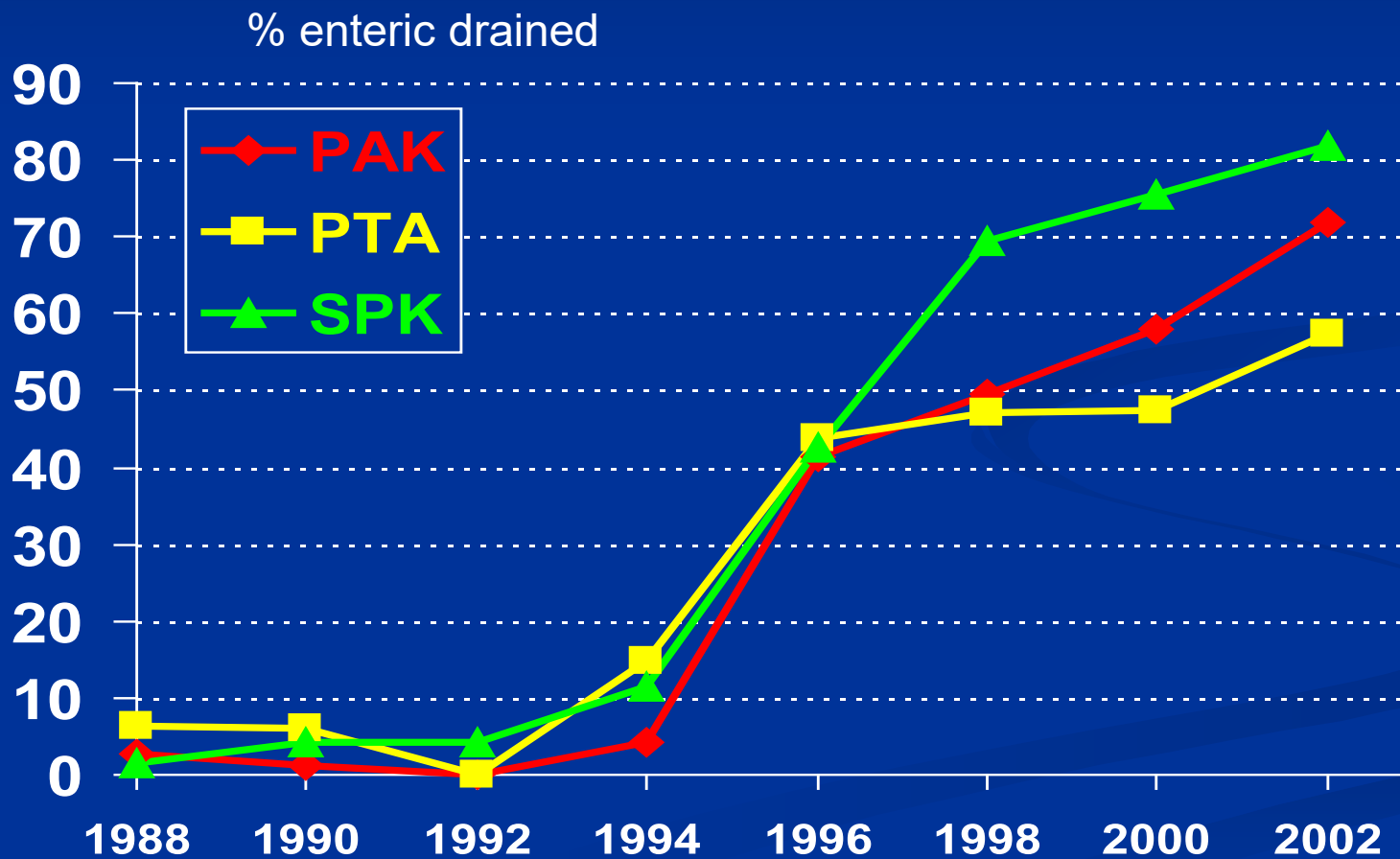
Duct Management - Technique

Non-US Pancreas Transplants 1/1/1988 - 12/31/2003

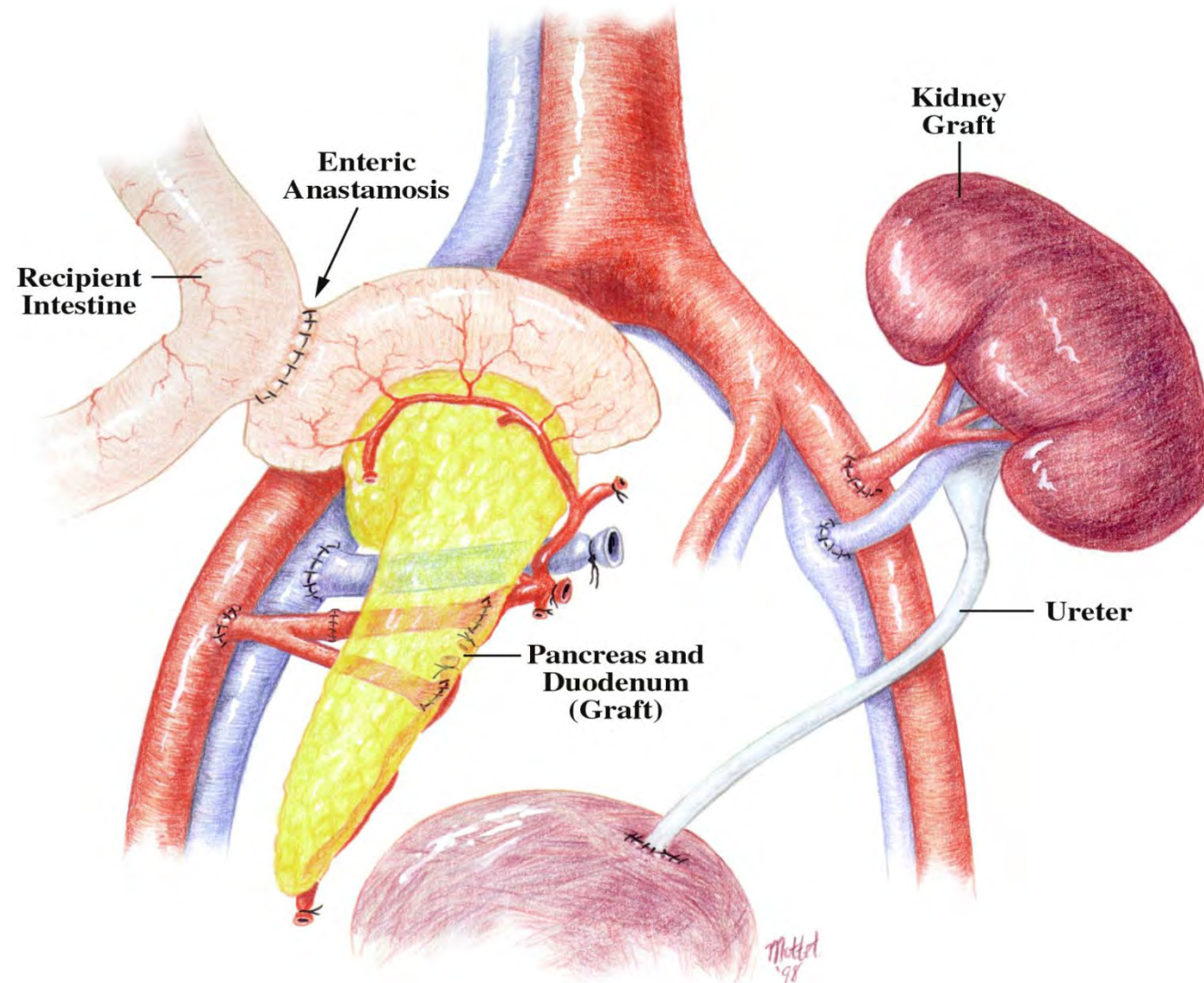


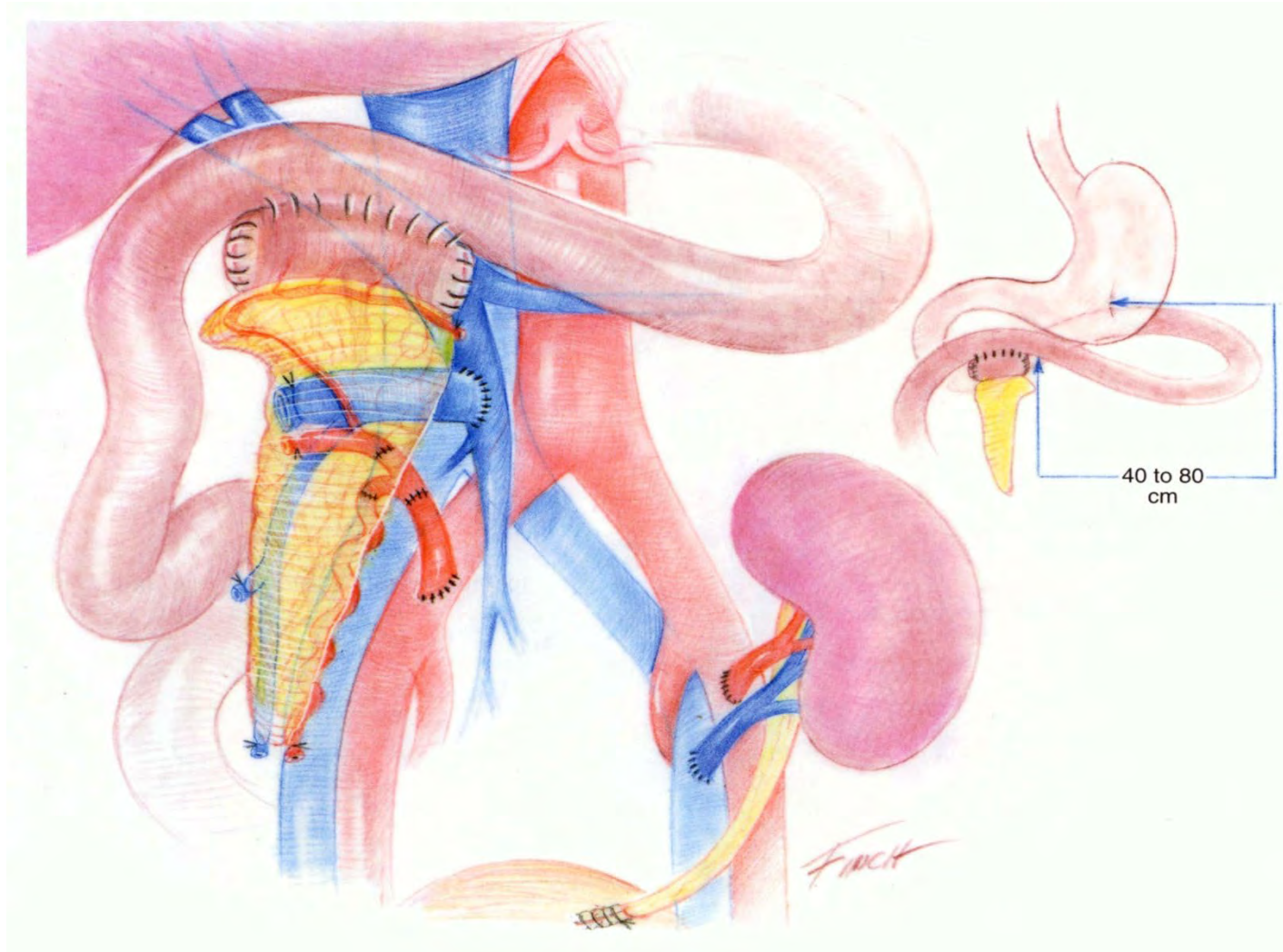
Duct Management Technique

USA Pancreas Transplants 1/1/1988 □ 12/31/2003



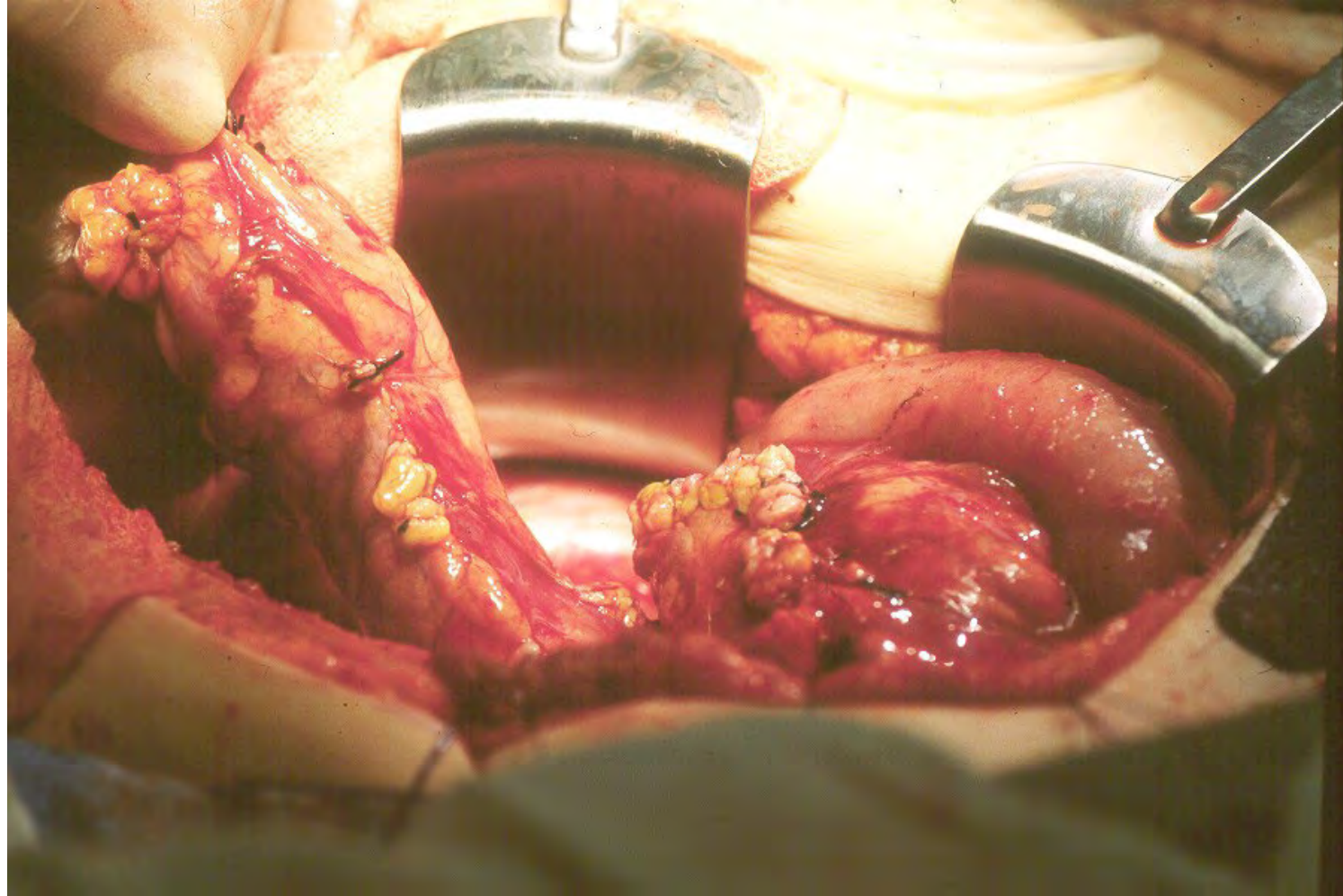
Kidney Pancreas Transplant with Enteric Drainage





Kidney Pancreas transplantation Portal-enteric drainage





RLQ Pancreas after reperfusion

Success after Pancreas Transplantation

Figure III-12. Unadjusted 1-Year, 3-Year, 5-Year, and 10-Year Pancreas Patient Survival, by Transplant Type



Figure III-13. Unadjusted 1-Year, 3-Year, 5-Year, and 10-Year Pancreas Graft Survival*, by Transplant Type



*Death is included as an event.

Loma Linda Pancreas Transplant Program



LOMA LINDA UNIVERSITY
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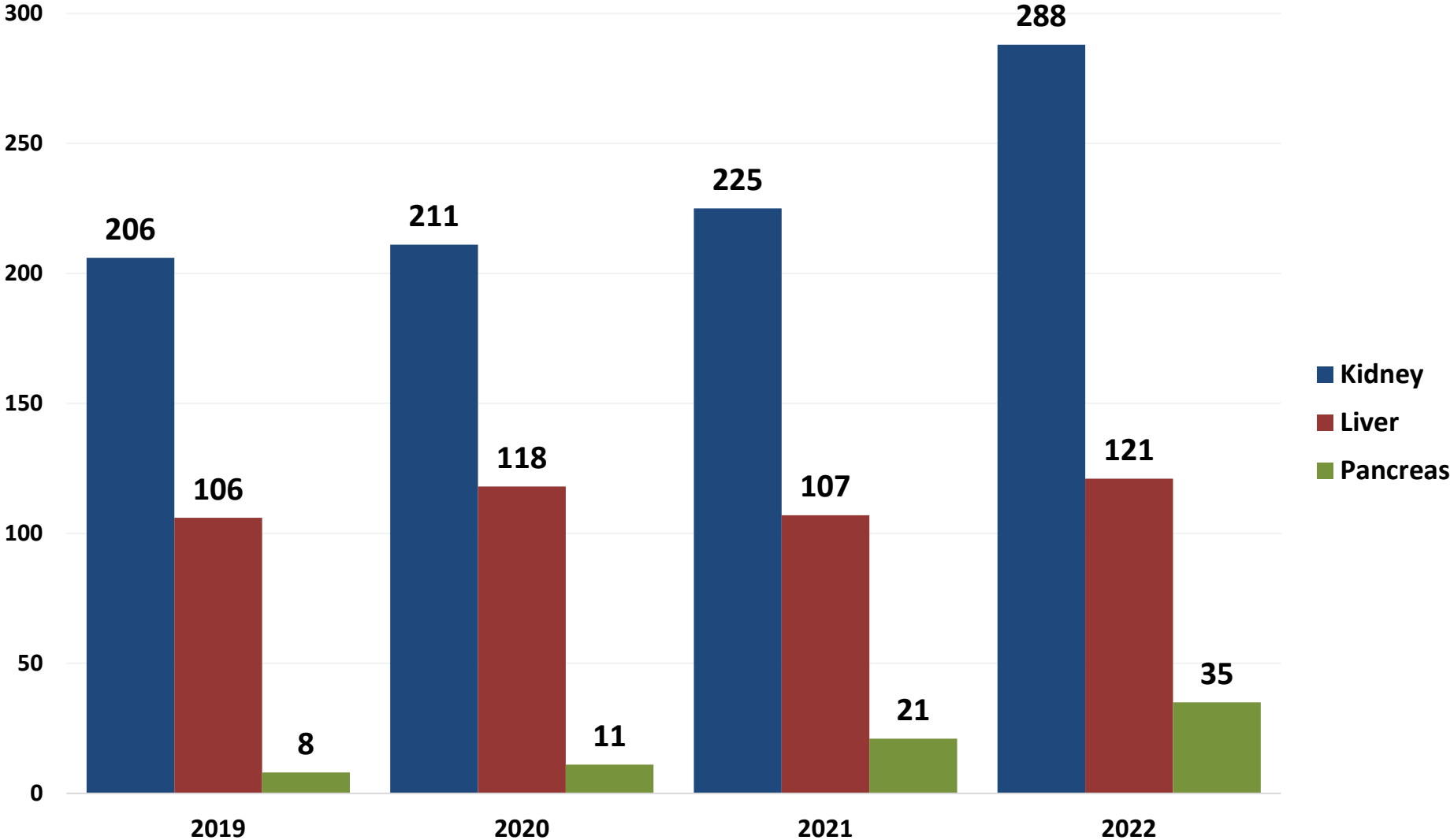
Transplant Institute

Transplant Institute

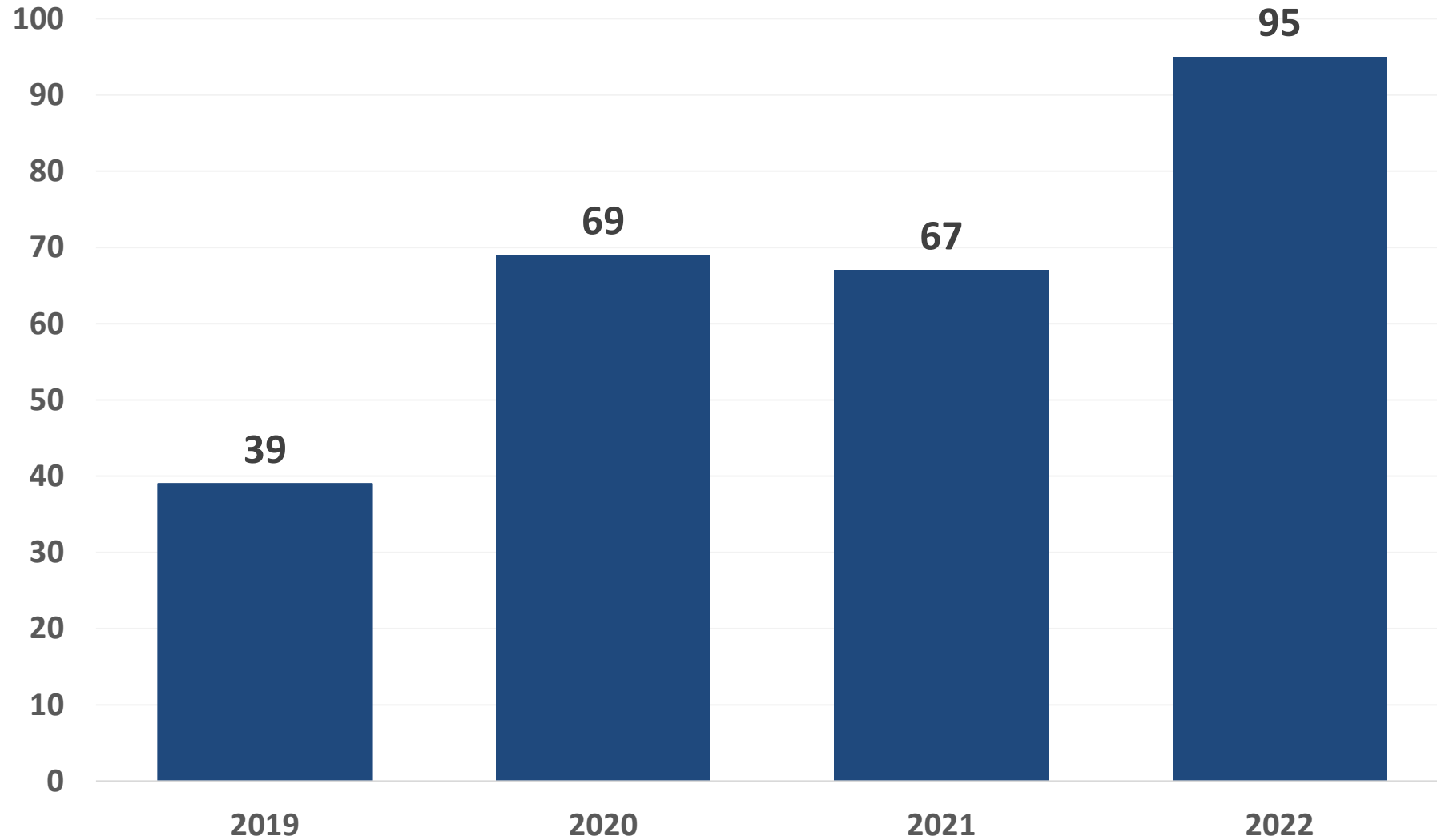
- Established in 1993
- Transplant Services and Highlights:
 - Heart (adult/peds)
 - Liver (adult)
 - Pancreas (adult)
 - 3rd largest pancreas program in the U.S. in 2022
 - Leader pancreas program in the Western U.S. in 2022
 - Kidney (adult/peds)
 - 5th most kidney transplant listings in the U.S. in 2022
 - Bone marrow (peds)



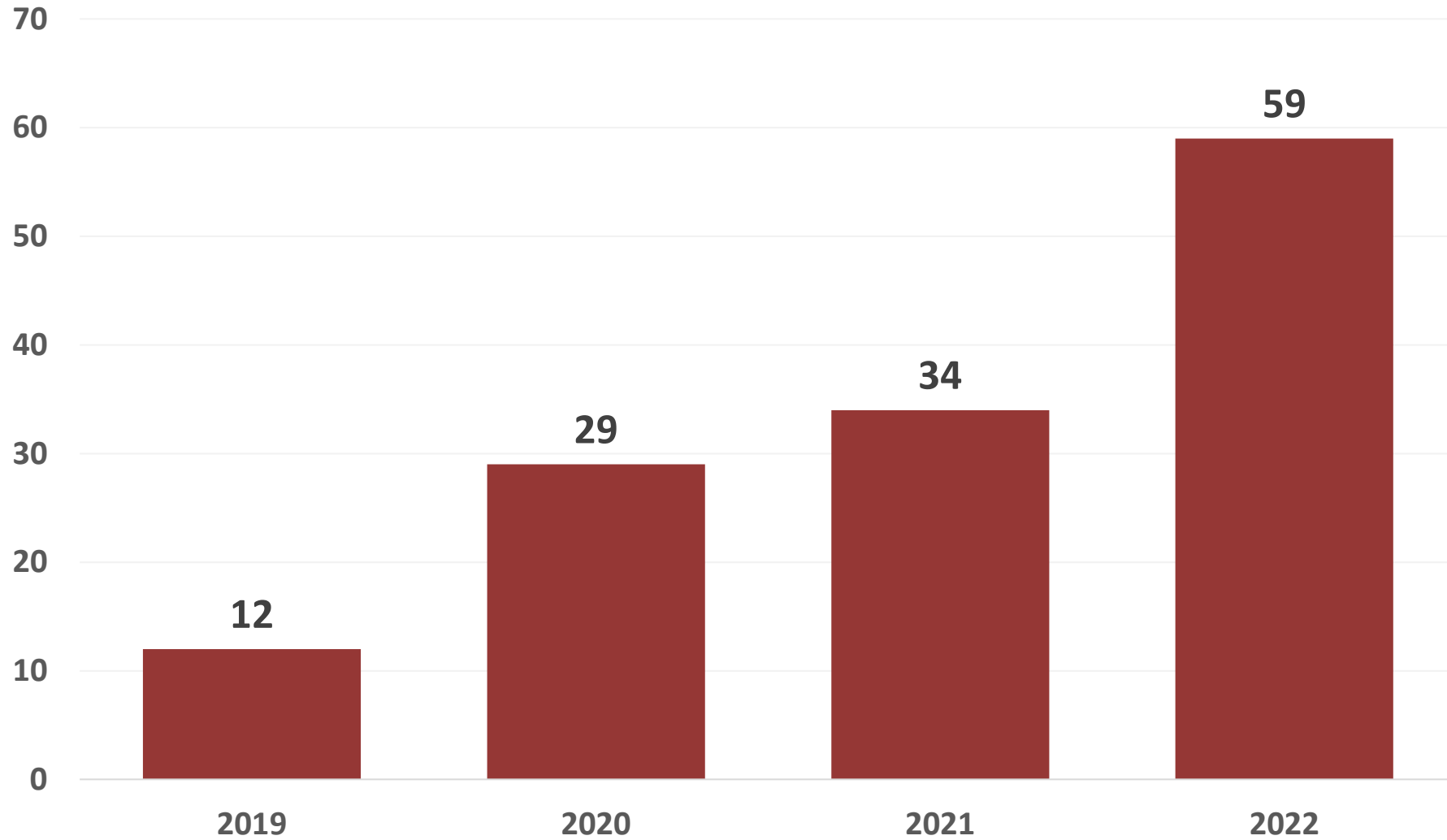
Transplant Volumes



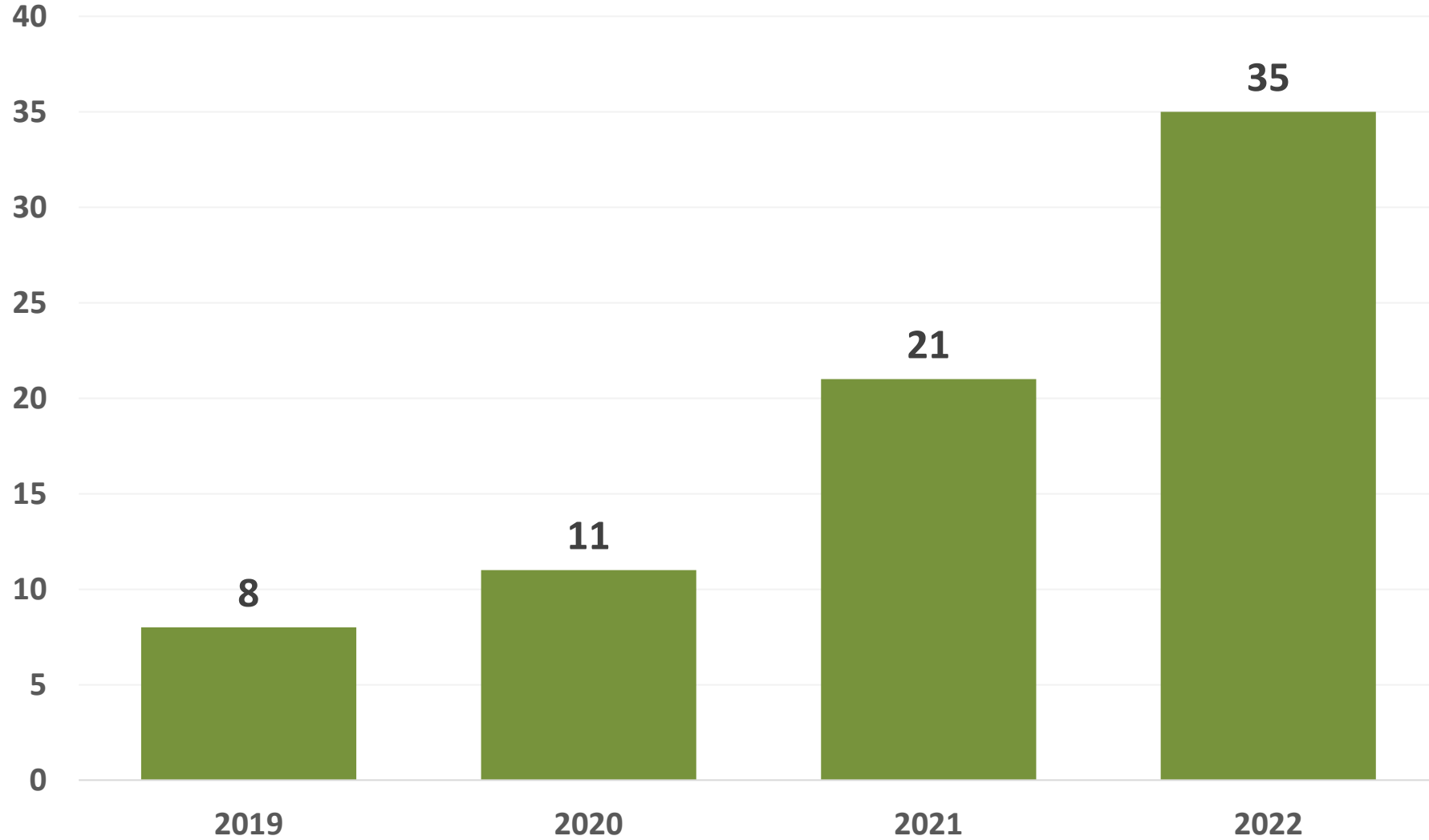
Pancreas Evaluations



Pancreas Waitlist Additions



Pancreas Waitlist Additions



Objectives

- **3. Understand the benefits of whole organ pancreas transplantation**

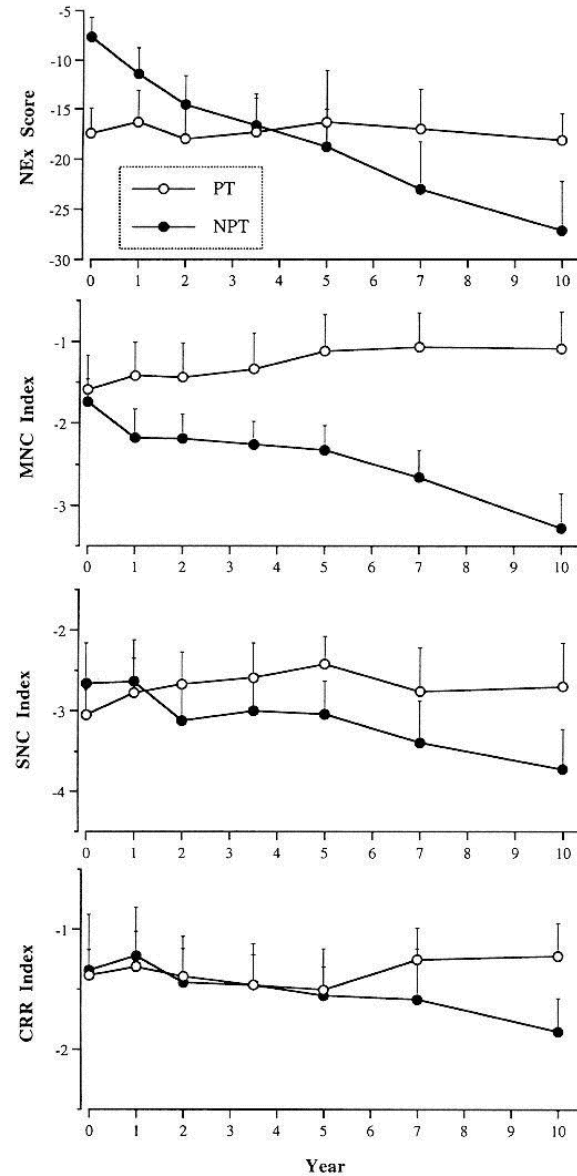
Diabetic Neuropathy

Diabetic Angiopathy (micro and macrovascular)

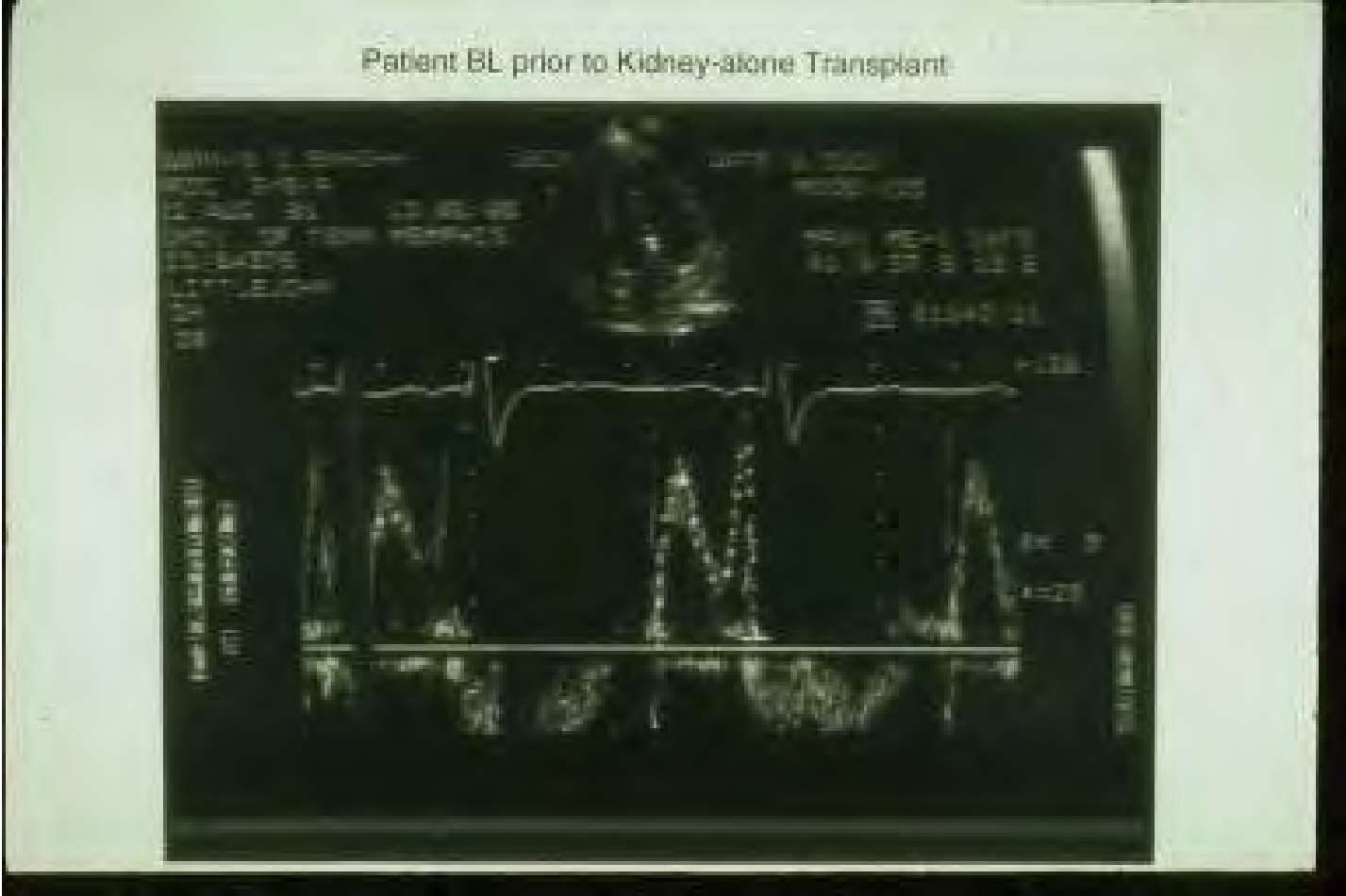
- Carotid artery intimal medial thickness (correlates with future vascular disease risk)
- Left ventricular ejection fraction, peak filling rate to peak ejection rate ratio, and endothelial-dependent dilation of the brachial artery also improved after SPK vs KTX with DM
- Diastolic dysfunction normalized by 4 yr
- Fewer cardiovascular events, specifically **acute myocardial infarction**



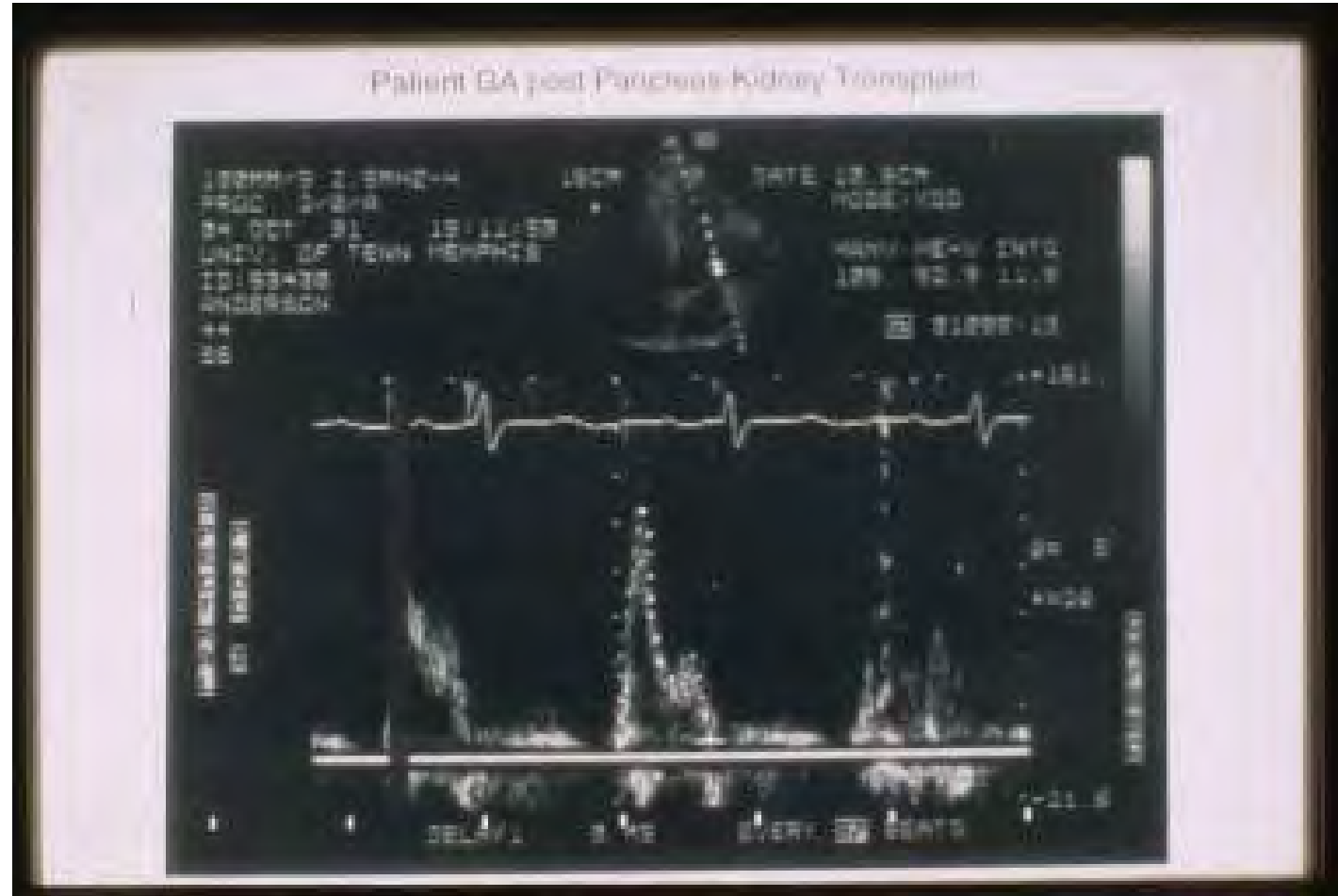
Navarro X, Sutherland D **Long-term effects of pancreatic transplantation on diabetic neuropathy.** *Annals of Neurology* 42(5) 727-736, 1997



Diastolic Dysfunction in Diabetic Uremia



Normalization of Diastolic Function after SPK Transplantation

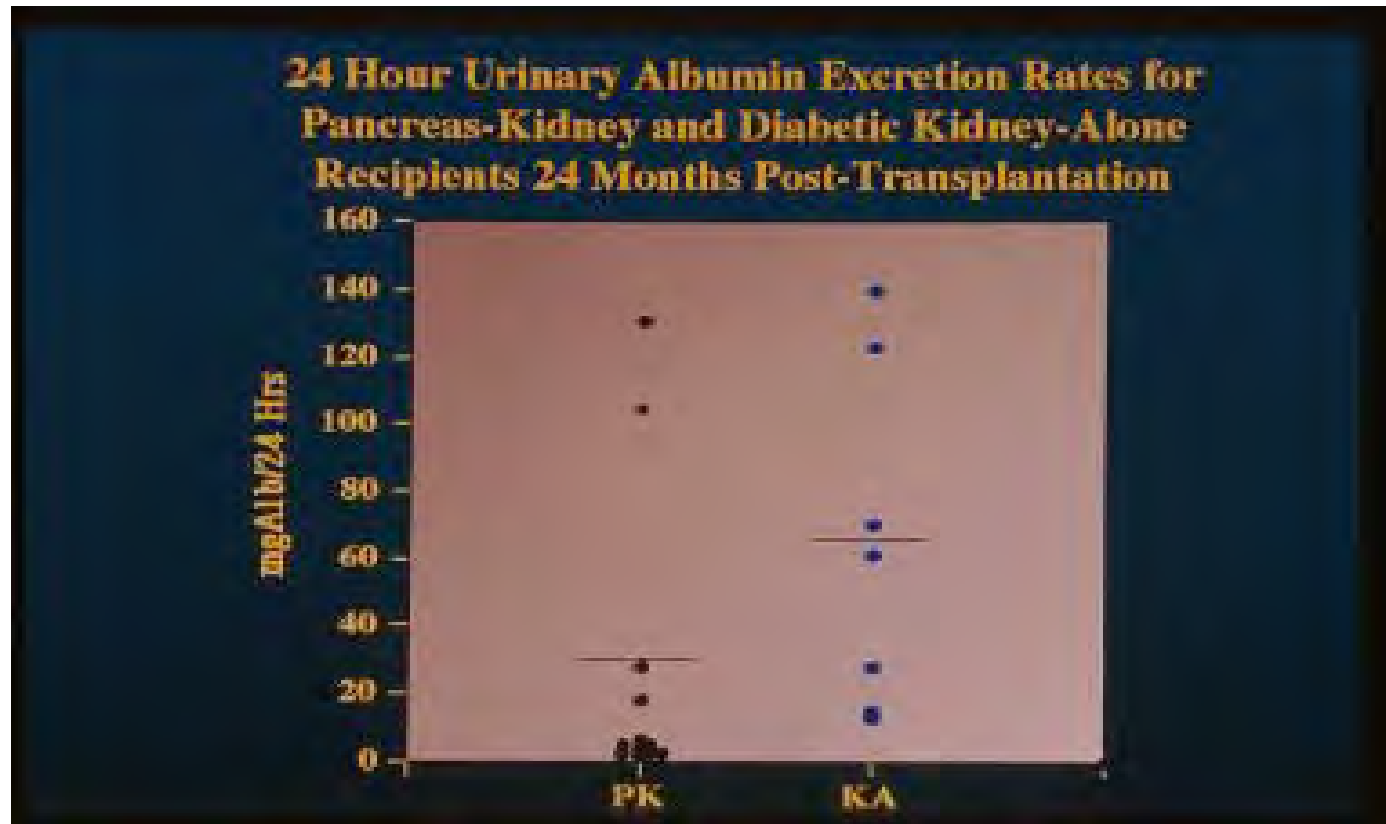


Pancreas Transplantation and Diabetic Nephropathy

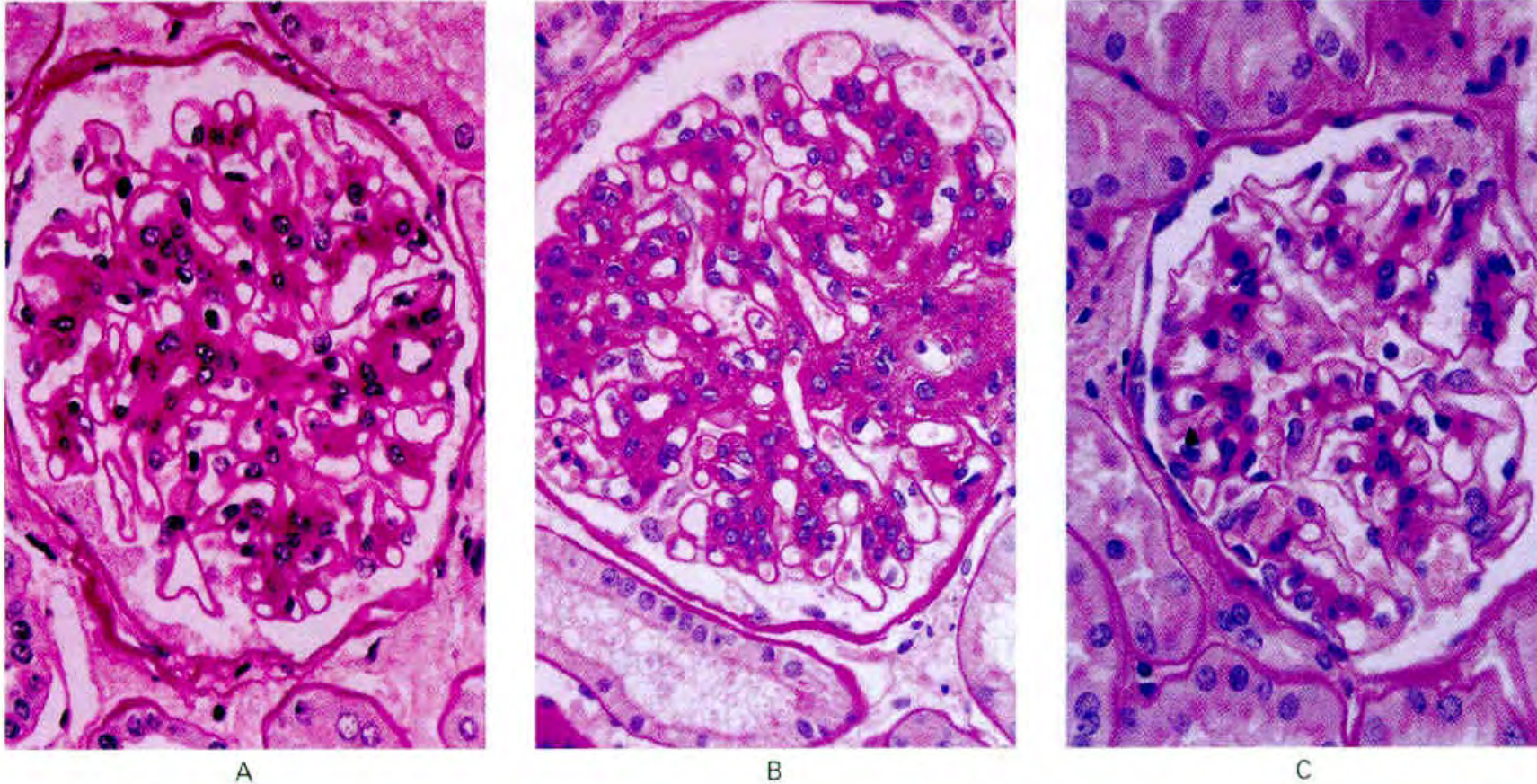
- Recurrent diabetic nephropathy is observed as early as 2 yr after kidney transplant in a diabetic recipient or upon failure of the pancreas graft after simultaneous pancreas-kidney transplant
- Diabetic nephropathy has never been reported in a kidney graft when the graft is accompanied by a functioning pancreas graft.

Urinary Albumin Excretion Rate

A Hall mark of Diabetic Nephropathy



Reversal of Lesions of Diabetic Nephropathy after Pancreas Transplantation



A-before transplant

B- 5yrs post panc tx C- 10 yrs post panctx

Beneficial effect of SPK on Macro Vascular disease

Two prospective studies:

• **Coronary artery disease**

- Jukema JW et al *
- 26 SPK with functioning graft vs 6 SPK failed pancreas mean follow up 3.9 yrs
- Quantitative Coronary angiography
- Regression of coronary lesions in 38% vs 0% controls

• **Carotid disease**

- Larsen JL et al **
- Measured Carotid intima-media thickness
- 25 panc tx vs 20 diabetics without nephropathy, 20 non diabetic Ktx & 32 normals
- Improvement in Carotid IMT after Pancreas Transplant

*Jukema JW et al Diabetes Care
2002, 25:996 **LarsenJL et al.
Diabetes care 2004,27:1706

Objectives

- 1. Understand the limits of medical therapy for diabetes
- 2. Understand the indications for whole organ pancreas transplantation
- 3. Understand the benefits of whole organ pancreas transplantation



Conclusions

- More than 20,000 PTx worldwide (86% SPK).
- Excellent near term patient and graft survival
- Overall 1-year patient survival >90%, graft survival > 80%.
- SPK is treatment of choice for carefully selected patients with type I and II DM and advanced nephropathy.
 - Superior glycemic control.
 - Improved quality of life.
- PAK results have improved to approach SPK
- Promise of improvement in not only micro vascular disease but Macro Vascular disease as well



World's first pancreas transplant could open up new diabetes treatment



Acknowledgements

“The LLU team”

Transplant surgeons

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Thank You

Questions?



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Becky Mintz
Heart Recipient

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