Transplanting HOPE

End-organ failure, HIV and a path forward

Dr Cameron R. Wolfe

MBBS(Hons), MPH, FIDSA, FAST
Assoc Professor of Medicine
Division of Infectious Diseases

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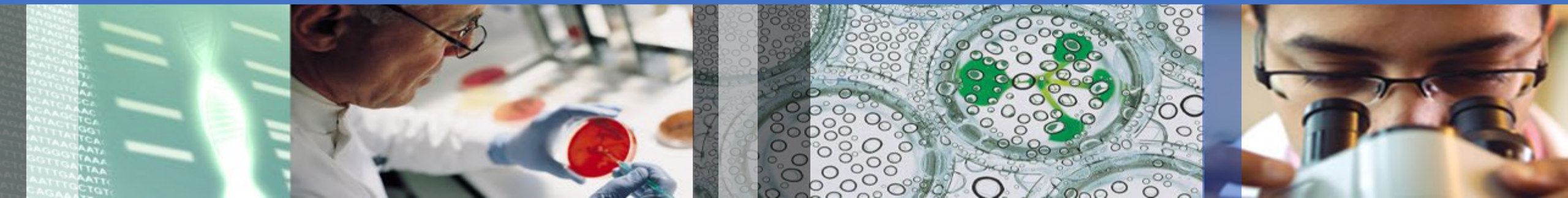
@camwolfe

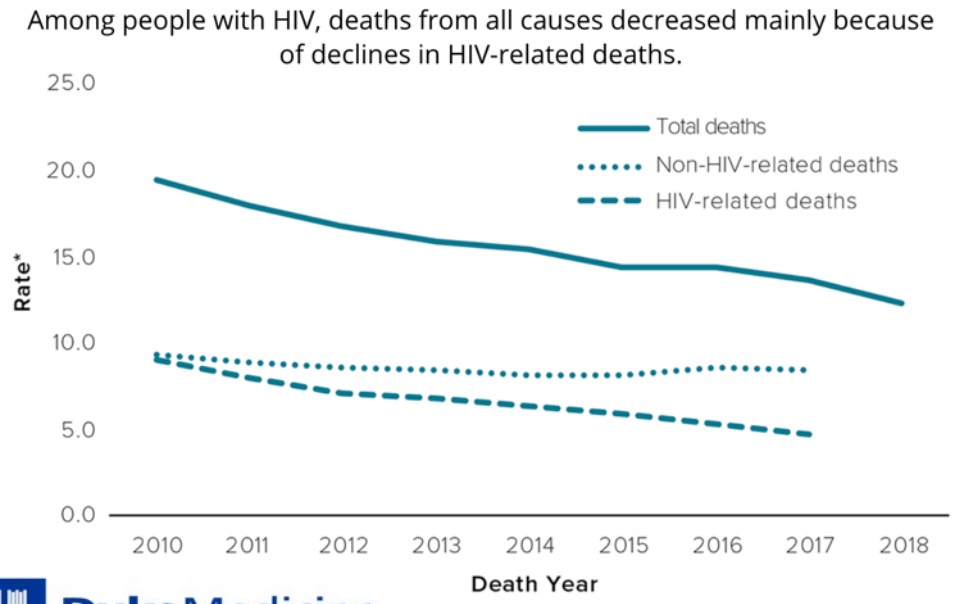


Disclosures:

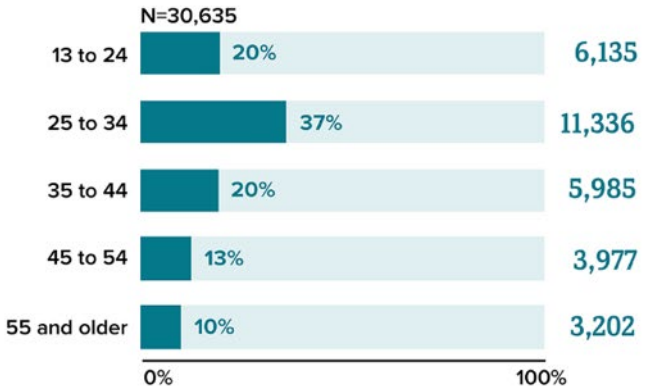
- During the last 12m:
  - Worked on drug safety monitoring boards
    - Janssen - Respiratory Vaccines
    - Biogen – Covid therapeutics
    - Adamis – Covid therapeutics
  - Worked on advisory boards
    - Gilead – Covid therapeutics
    - Regeneron – Covid therapeutics
    - Adagio – Covid therapeutics
- Nothing in the fields of Transplantation or HIV
- Nothing mentioned today will be discussed off-label

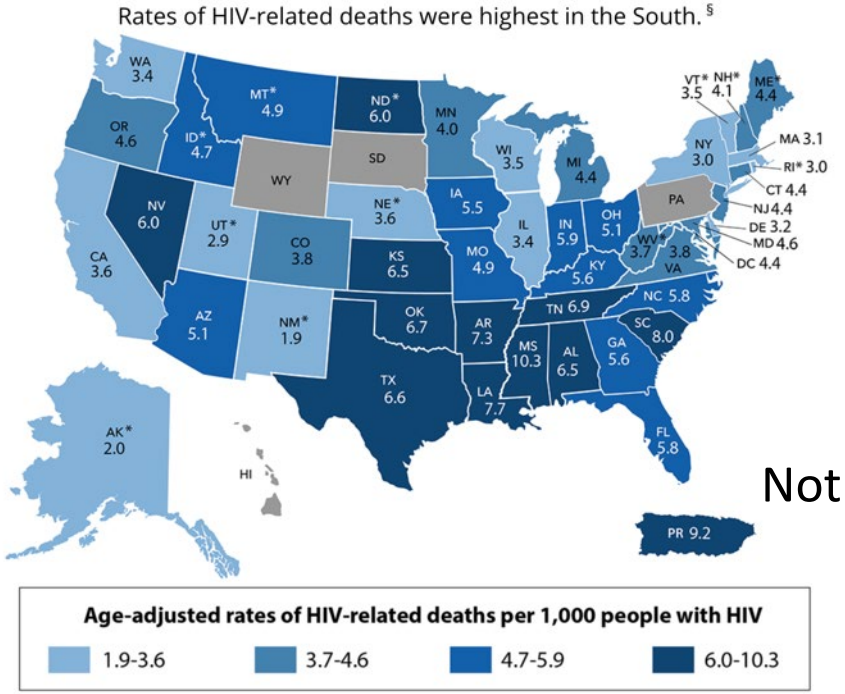
HIV for the non-ID provider

- Background US epidemiology (2019)
  - ~1.2milion infections (>13yrs) in the USA
  - 1 in 7 (15%) HIV+ patients don't know…
- ~30,600 new infections 2020, 80% men



People aged 13 to 34 accounted for more than half (57%) of new HIV diagnoses in 2020.





Not evenly distributed:

Socioeconomically variable

Racially variable

Geographically variable

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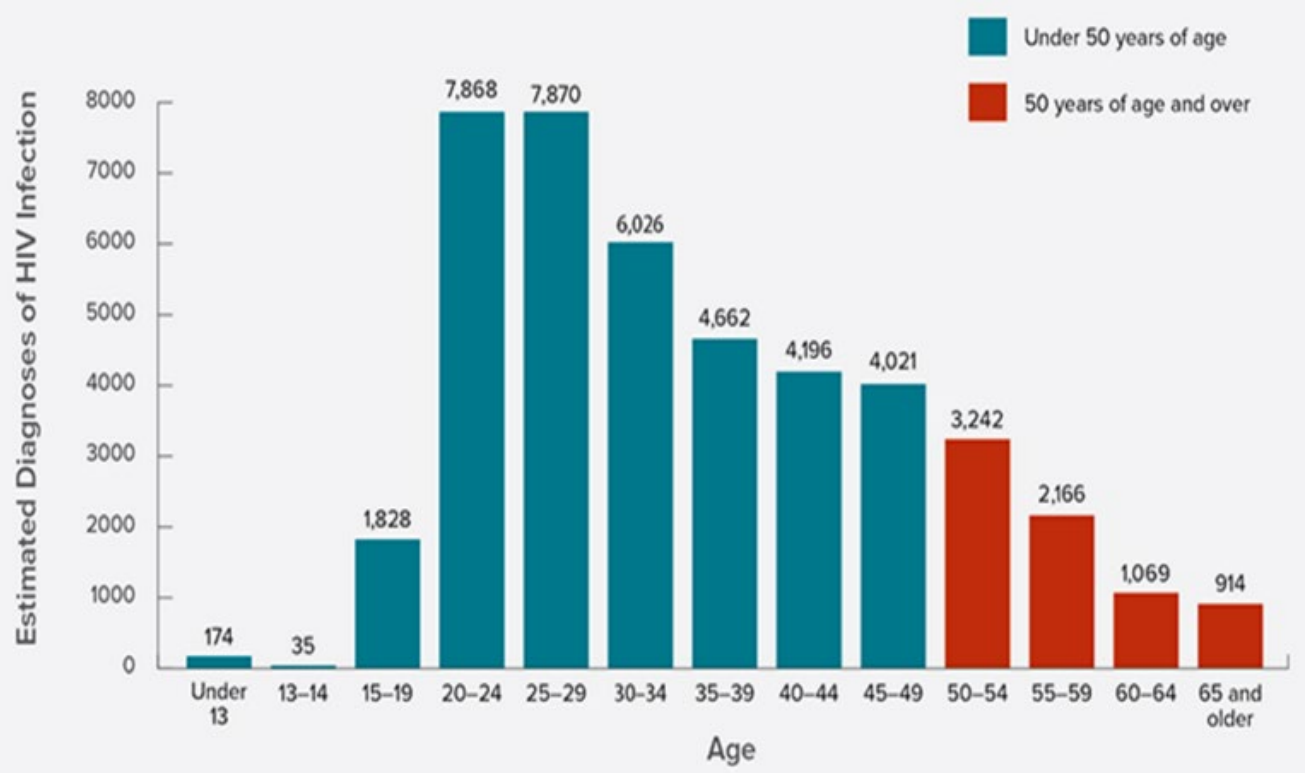
HIV for the non-ID provider

This is NOT a disease that has ‘gone away’…



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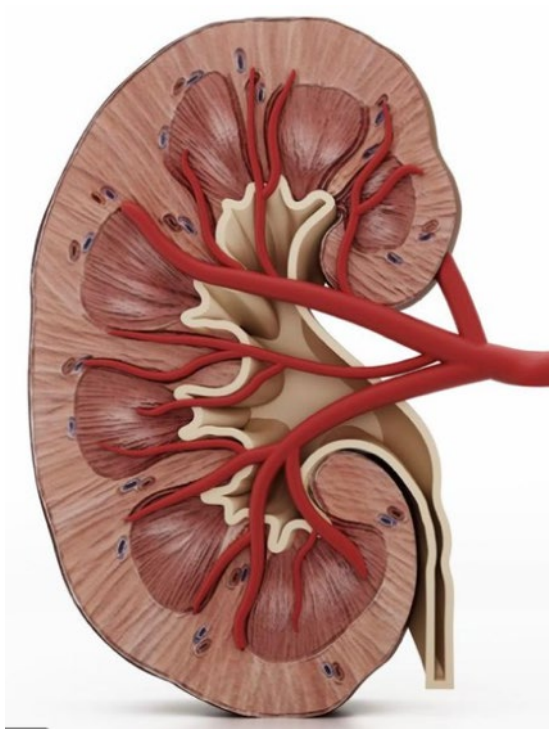
Chronic Renal Disease

- Traditional Risk Factors:
  - Age
  - Hypertension
  - Smoking
  - Diabetes
  - Intrinsic renal diseases
  - Behavioural / racial factors

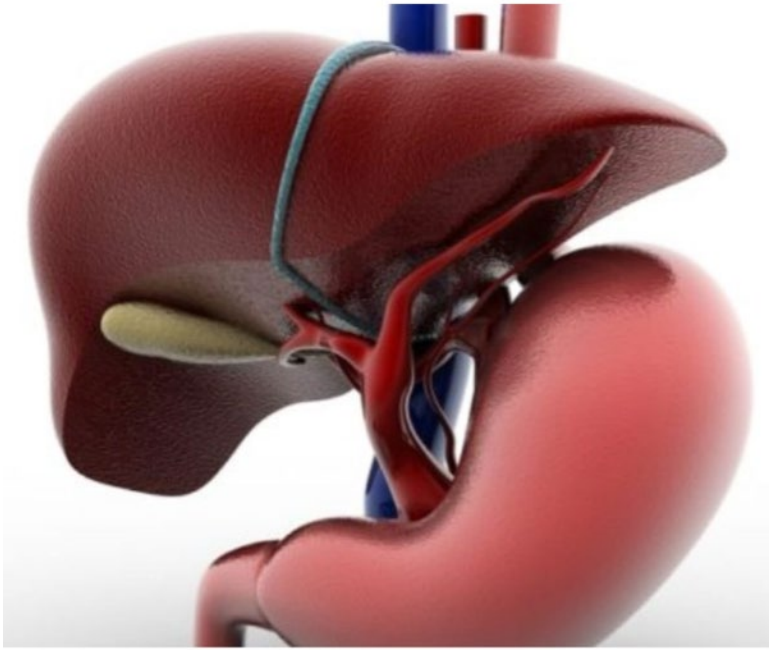


- HIV-amplified Risk Factors:
  - HIV-associated nephropathy (HiVAN)
  - ART or antibiotic mediated renal toxicity
  - Co-infection (HBV, HCV)
  - Recreational drug use
  - Total viraemia & CD4 nadir over time
  - APOL1 gene variants

Chronic Liver disease

- Traditional Risk Factors:
  - Age
  - Obesity
  - Alcohol
  - Hepatitis B
  - Hepatitis C
  - Drug toxicity
  - Intrinsic liver disease

- HIV-amplified Risk Factors:
  - HIV-associated nephropathy (HiVAN)
  - ART or antibiotic mediated liver toxicity
  - Co-infection (HBV, HCV)



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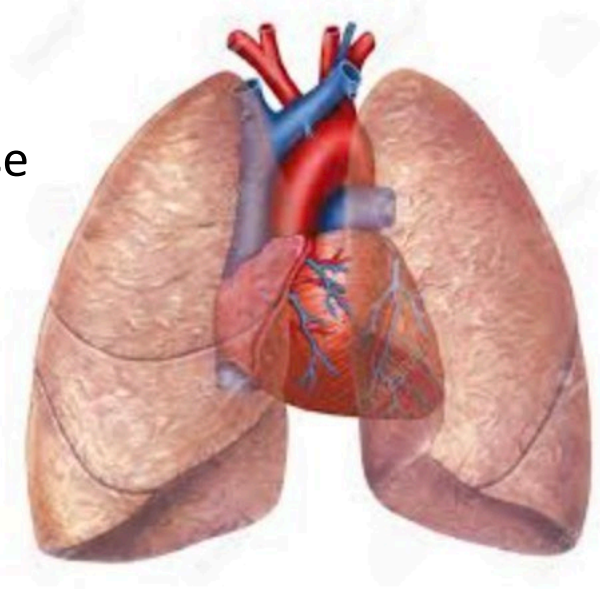
Chronic Lung / Heart disease

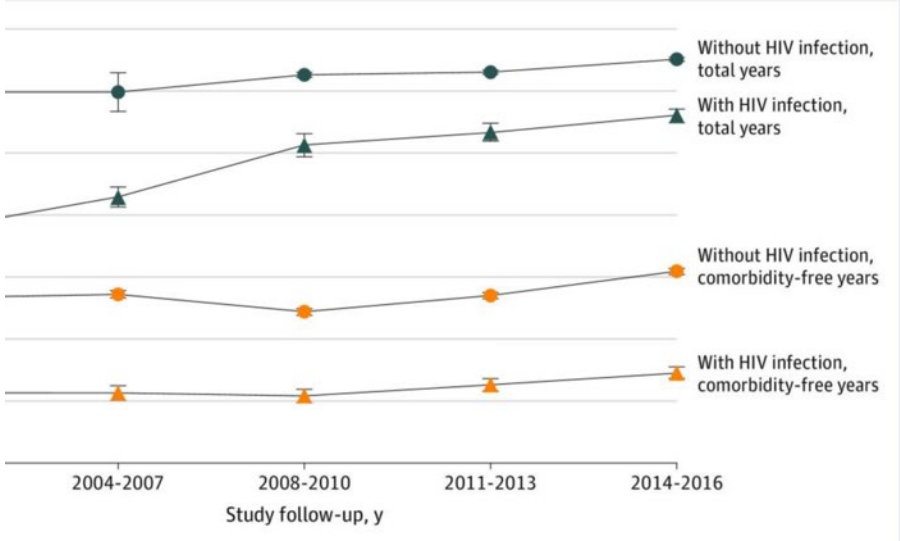
- Traditional Risk Factors:
  - Age
  - Smoking
  - Hypertension
  - Diabetes
  - Hyperlipidemia
  - Obesity
  - Family history
  - Intrinsic cardiorespiratory disease
  - Occupational diseases



- HIV-amplified Risk Factors:
  - ART or antibiotic mediated cardiovascular toxicity
  - Recreational drug use
  - Total viraemia & CD4 nadir over time
  - Co-infection (HBV, HCV)

Life expectancy for HIV patients in USA:

- Overall, improving:
  - 59 (2000 – 2003) -> 71 (2008 – 2010) -> 77 (2014-2016)
  - By comparison, HIV-negative = 86
  - If you started HIV therapy with CD4 count > 500:
    - life expectancy >85



- However:
  - HIV+ patients developed their first comorbidity 16yrs earlier
  - Average age 36yrs
  - Average age of onset of chronic organ disease:

	HIV - positive	HIV - negative
Chronic Liver Disease	55 years	79 years
Chronic Renal Disease	62 years	79 years
Chronic Lung Disease	47 years	63 years
Chronic Cardiovascular Disease	74 years	82 years

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Marcus et al, JAMA Netw Open. 2020 Jun; 3(6): e207954.

Why are we discussing this?
A therapeutic antiviral revolution:

HIV HCV HBV

Circa 2005

2022

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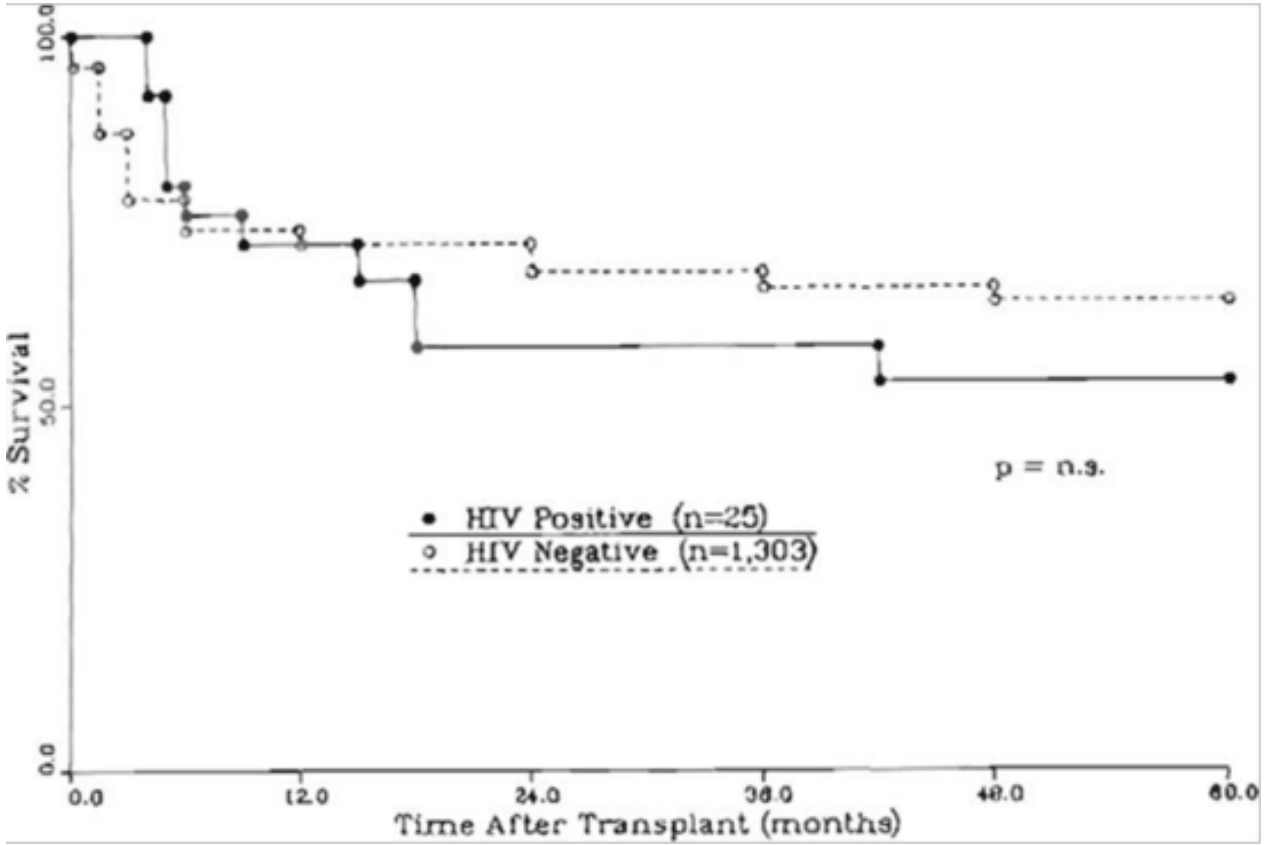
30+ years of HIV+ SOT recipients

- U of Pittsburgh, 1980-1990, Transplantation
  - 25 patients (15 livers, 5 hearts, 5 kidneys)
  - At least amongst livers: 5yr survival 53% (HIV+) versus 63% (HIV-)



First author: Adreas Tzakis,
Last author: Thomas Starzl

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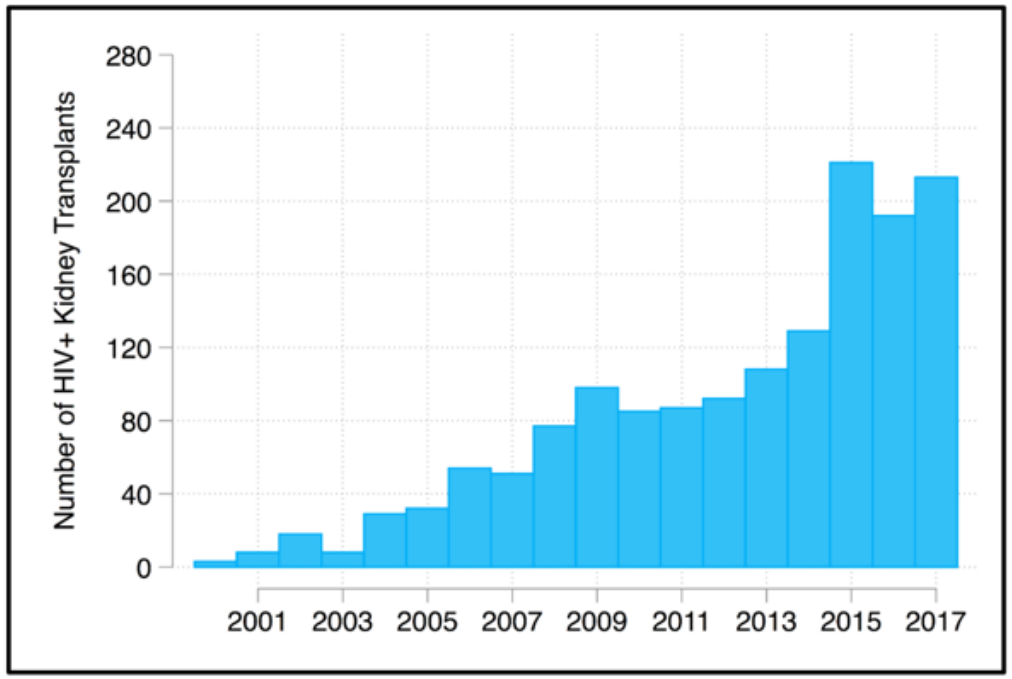
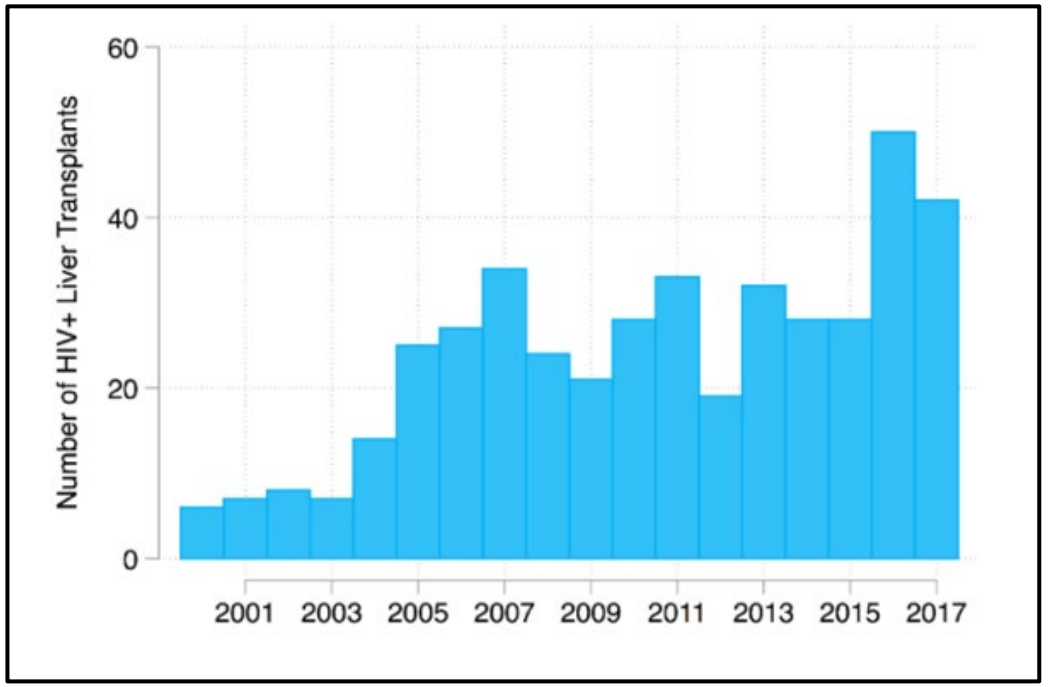
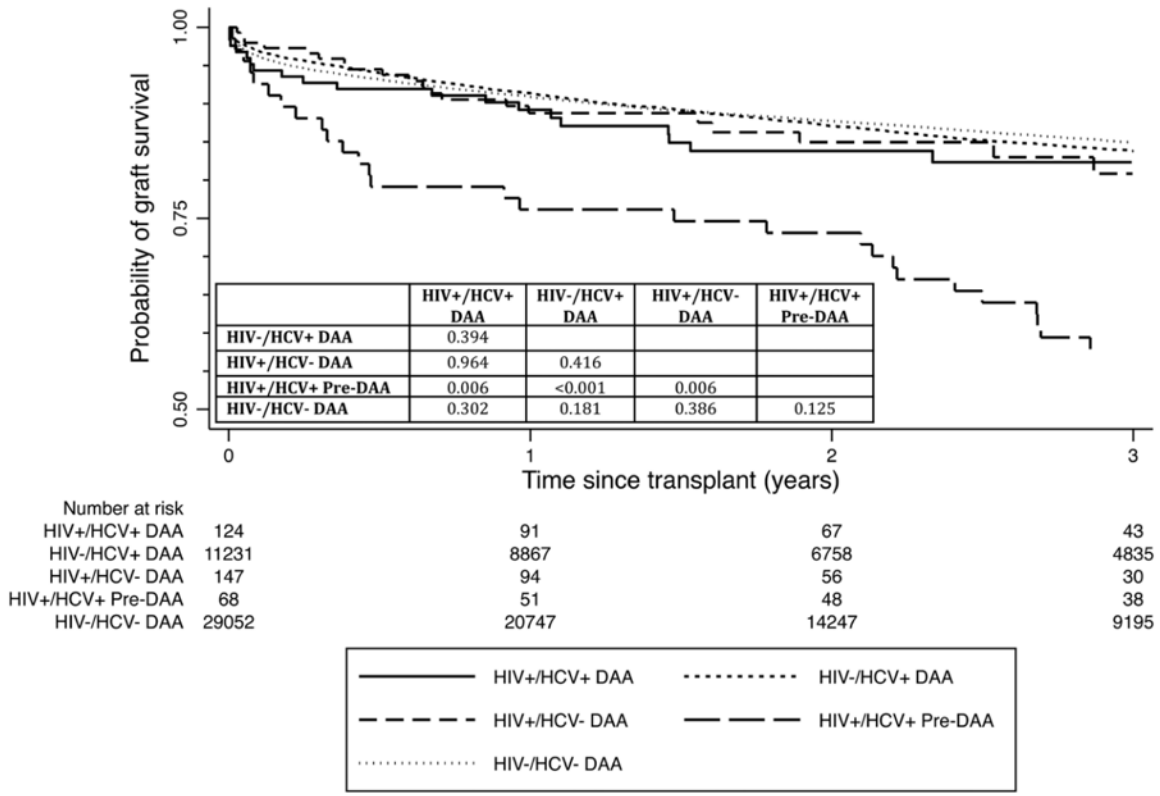
HIV Survival now so good that HIV+ recipient transplant now standard…





UNOS data, courtesy A.Wilk, personal communication, May 2018

HIV recipients - Liver:

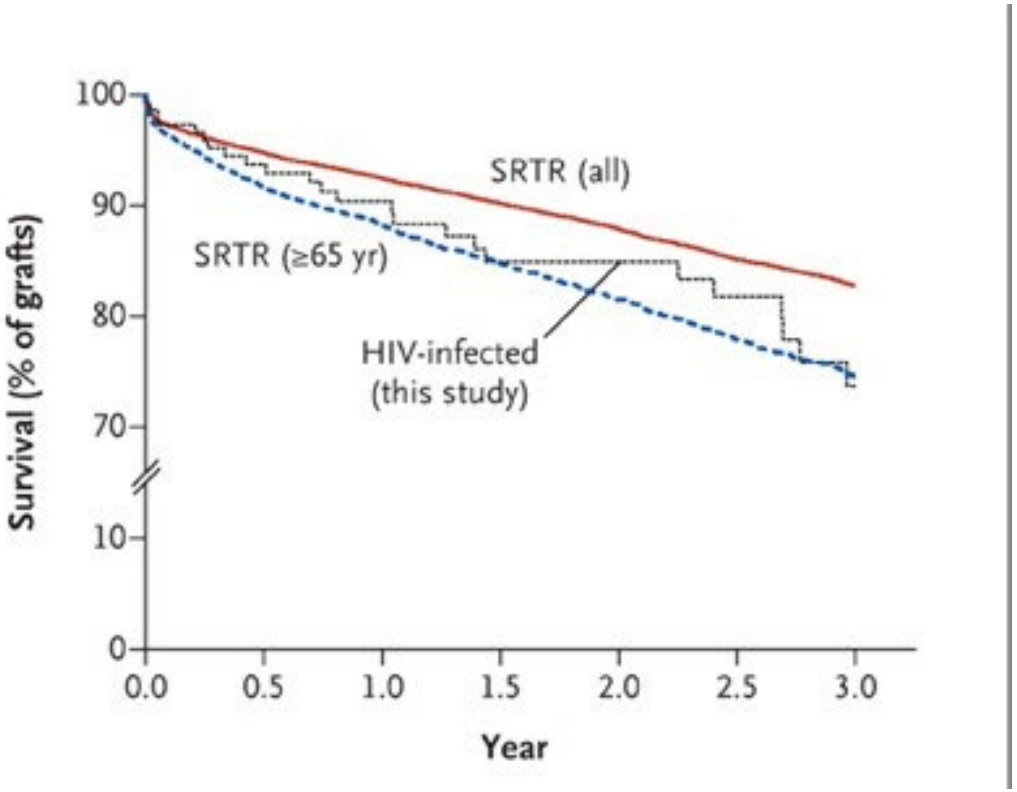


	HIV+/HCV+ DAA	HIV-/HCV+ DAA	HIV+/HCV- DAA	HIV+/HCV+ Pre-DAA
HIV-/HCV+ DAA	0.394			
HIV+/HCV- DAA	0.964	0.416		
HIV+/HCV+ Pre-DAA	0.006	<0.001	0.006	
HIV-/HCV- DAA	0.302	0.181	0.386	0.125

Number at risk				
HIV+/HCV+ DAA	124	91	67	43
HIV-/HCV+ DAA	11231	8867	6758	4835
HIV+/HCV- DAA	147	94	56	30
HIV+/HCV+ Pre-DAA	68	51	48	38
HIV-/HCV- DAA	29052	20747	14247	9195

Cotter et al, Transplantation Direct 2021;00: e707

Kidneys:



Stock et al, NEJM, 2010

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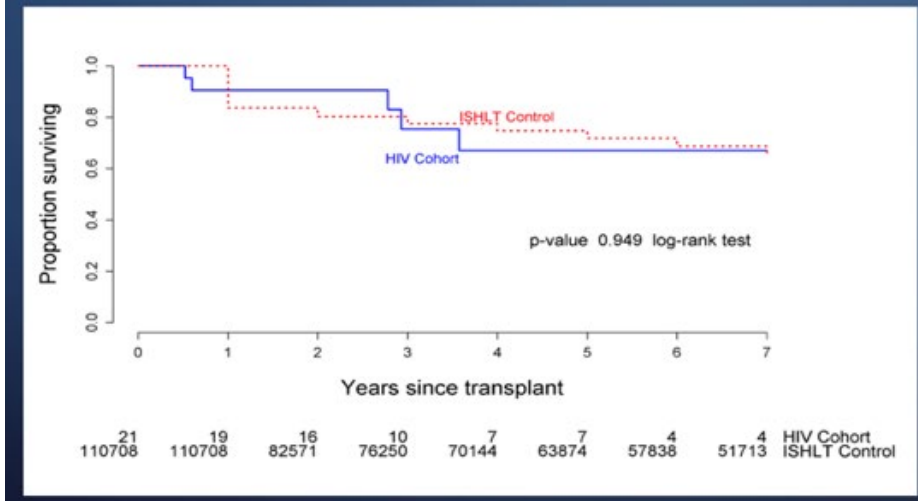
Heart / Lung Transplant for PLWH

OUTCOMES

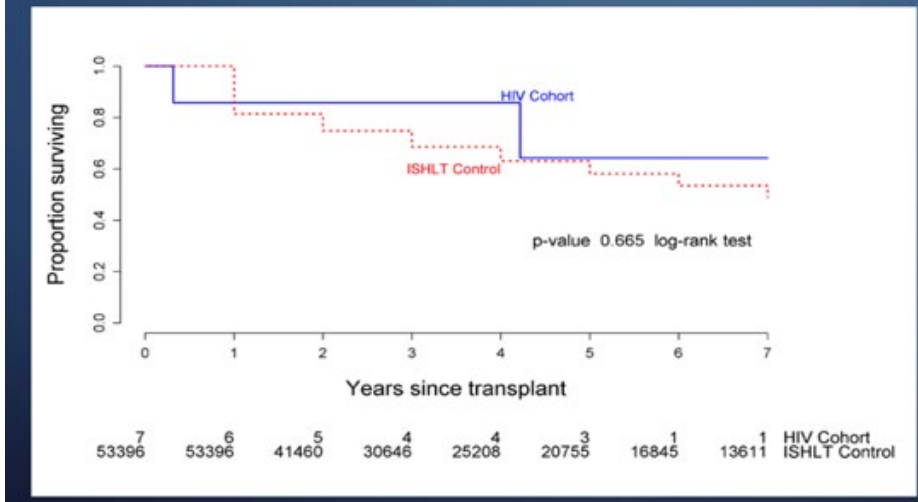
	Heart N=21 (%)	Lung N=7 (%)	Heart Lung N=1*
Patient Survival			
1 Year	19 (90)	6 (86)	1
3 year, heart N=15, lung 5	11 (73)	4 (80)	NA
5 Year, heart N=11, lung 4	7 (64)	3 (75)	NA
Functional Status 1 yr N=17,7,1*			
Acute care	0	1 (14)	0
Home, not working for income	10 (59)	4 (57)	0
Home, working for income	5 (29)	1 (14)	1
Died	2 (10)	1 (14)	0

PATIENT SURVIVAL HEART TRANSPLANT



(ISHLT Primary Adult Heart Transplant 1982-2015)

PATIENT SURVIVAL LUNG TRANSPLANT



(ISHLT Primary Adult Lung Transplant 1990-2015)

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Koval et al, 2019, J Heart Lung Transplant

What is needed to get to transplant?

When to refer?

Social, financial, behavioral stability
Great compliance
At least 2 car givers, who preferably know HIV status

Kidney:
- CrCl <20

Liver:
- severe fibrosis/ comp. cirrhosis

Pulmonary:
- O2-dependent disease

Cardiac:
- Refractory heart failure

Assessment and Monitoring of the HIV-infected Solid Organ Transplant Candidate

Pre-transplant Evaluation	Peri-transplant Considerations	Post-transplant Monitoring

• Follow standard transplant center clinical, serologic, psychosocial, & cancer screening
  • Include anal and cervical HPV/cancer screening
  • Assess for living donors
  • Ensure vaccinations up to date
	• Follow standard donor assessment	• Close monitoring for rejection

• Evaluate for & treat active OIs*
• Obtain history of any prior OIs*
	• Utilize induction immunosuppression, including ATG if indicated	• OI prophylaxis
		  • Standard CMV prophylaxis
		  • Secondary prophylaxis for prior OIs
		  • CD4-directed OI prophylaxis
		  • Lifelong PJP prophylaxis recommended

• Ensure CD4 cells ≥200/ml^3 for kidney or ≥100/ml^3 for liver
• Ensure HIV RNA < 50 c/mL on ART
  • Avoid pharmacoenhancers
  • Consider INSTIs
  • Include HBV-active NRTI if prior infection
	• Monitor for drug-drug interactions (CNI, MTOR levels) with maintenance immunosuppression
	  • Tacrolimus preferred over cyclosporine
		• Treat HCV coinfection with DAAs

• Consider treating HCV with DAAs
  • May hold if HCV+ donor organs are available
	• Treat HCV coinfection with DAAs	• Continue standard HIV care, including cancer & metabolic screening
		  • Include anal and cervical cancer/HPV screening

• Consider participation in IRB-approved HIV D+/R+ SOT study
  • Assign an independent advocate
	• For HIV+ donors, obtain history of ART use, adherence, and resistance, co-receptor tropism, OIs, as well as CD4 & viral load if available
	  • Exclude donors with active OIs
		• Close HIV RNA monitoring for breakthrough/superinfection
		  • Consider genotype & tropism assay if viremic

	• Consider APOL1 testing for HIV+ living kidney donors	• Evaluate for HIV involvement in kidney grafts#

*Chronic cryptosporidiosis, visceral Kaposi's sarcoma, and progressive multifocal leukoencephalopathy have been considered contraindications
Electron microscopy and, if available, HIV urine NAT are relevant modalities

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Werbel et al, Current HIV/AIDS Reports (2019) 16:191–203

10+ years of HIV+ SOT donors

"I started to realize I am so often refusing organs from a patient because they have HIV. Then I thought this doesn't make sense because we have patients with HIV who we can't give dialysis to. So this was a simple way of solving the problem." –Dr. Muller

HIV+/+ kidney transplantation
Results at 3 to 5 years

The NEW ENGLAND JOURNAL of MEDICINE

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.

First D+/R+ kidney transplant Sept 2008, still alive at 10 years.

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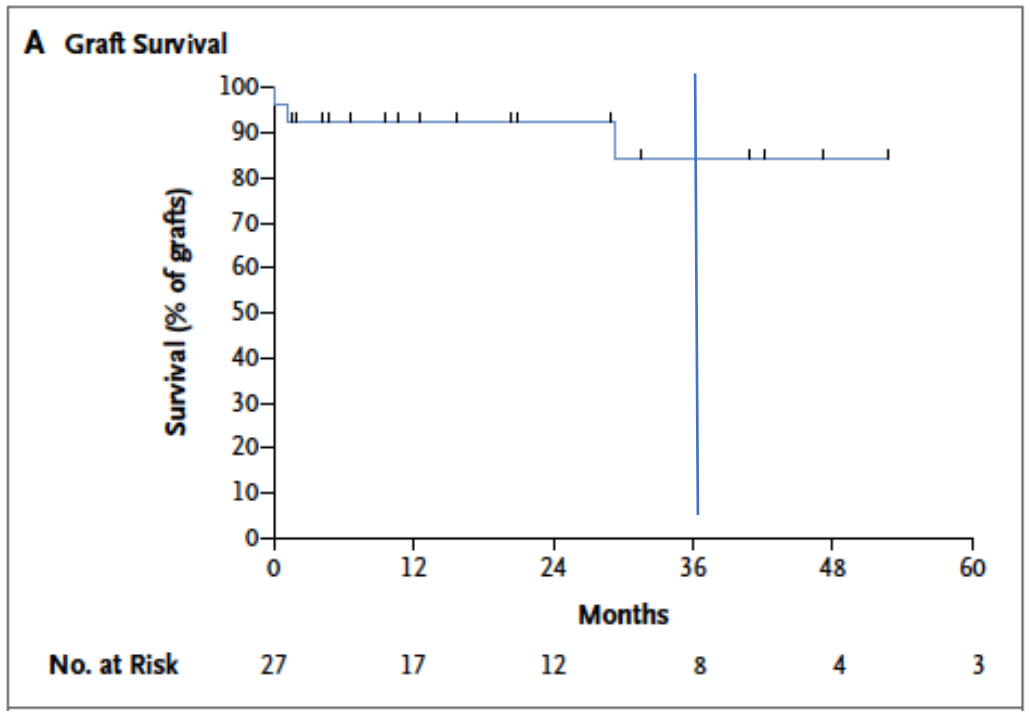
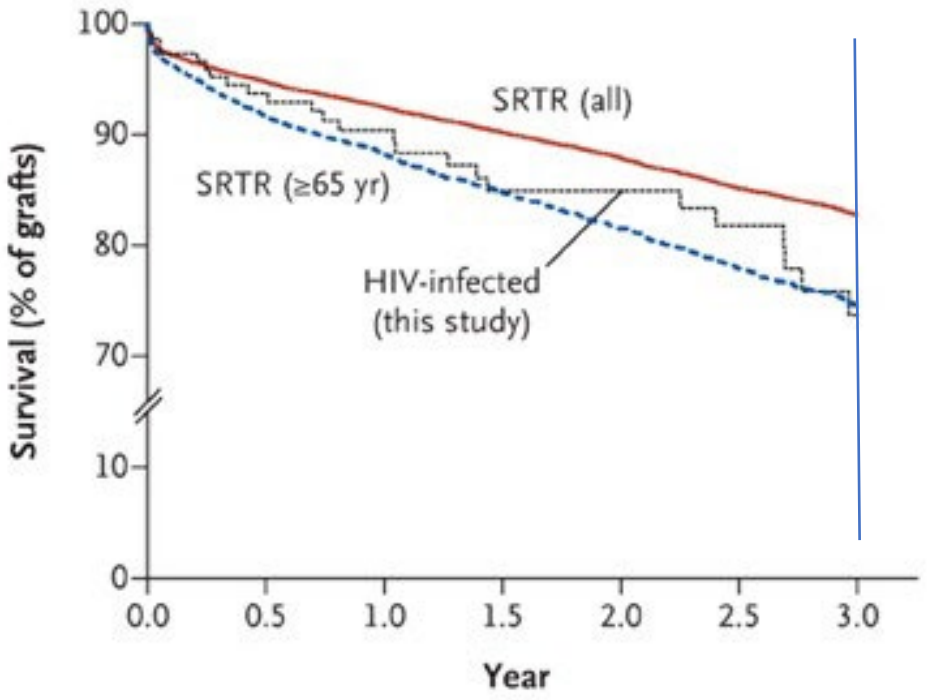
HIV+/+ positive kidney transplantation
Results at 3 - 5 years

HIV+ to HIV+



HIV- to HIV+ (Stock et al., NEJM 2010)



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HOPE Act (HIV Organ Policy Equity Act, 2013)

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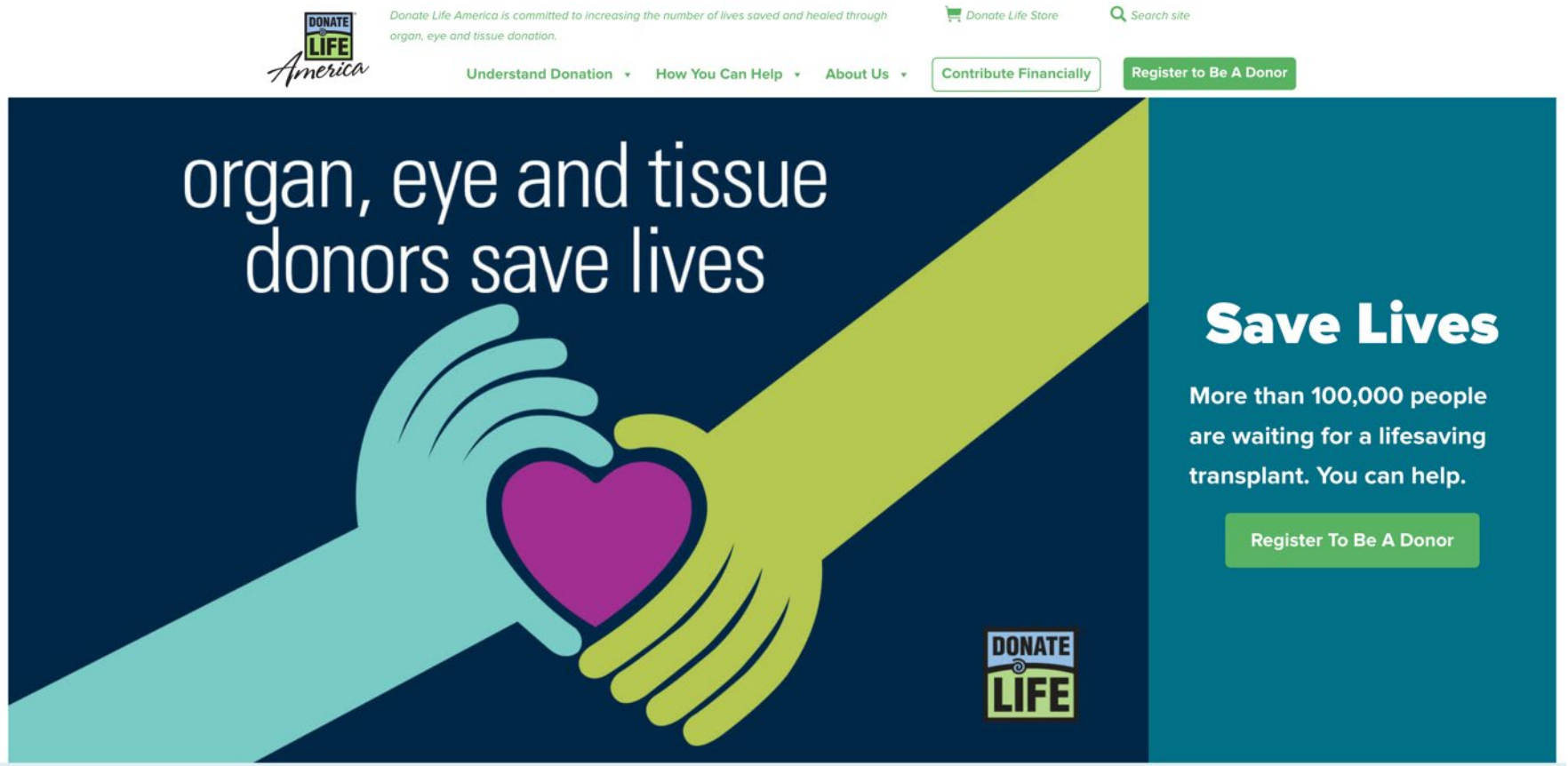
Sign up yourself
Talk to your patients!



DONATE LIFE America

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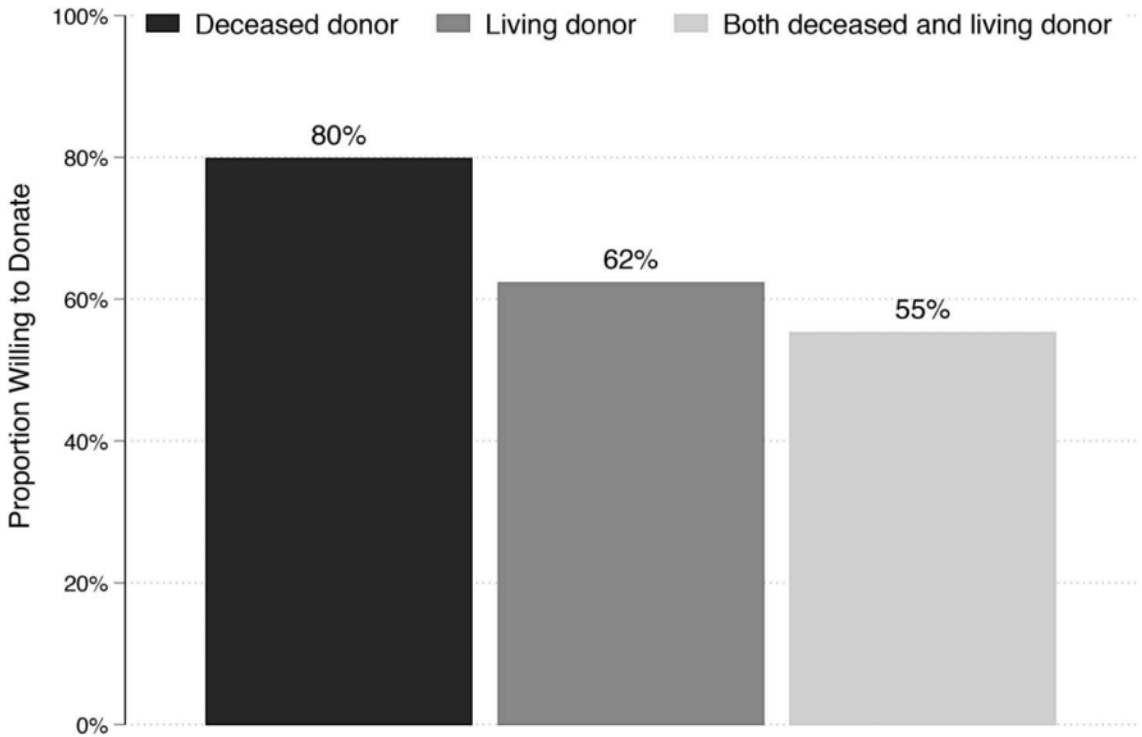
Perception of donation?



114 respondents, mainly African American
48% women, median age 55, Baltimore

J Acquir Immune Defic Syndr • Volume 79, Number 1, September 1, 2018

TABLE 2. Concerns and Beliefs About Donation

Concern/Belief	% Expressing Concern/ Belief	% Willing to Donate With Concern/ Belief	% Willing to Donate Without Concern/Belief	*P*
Factors relating to deceased organ donation				
Financial burden	5.2	66.7	80.6	0.6
Body disfigured before funeral	12.3	64.3	82.0	0.1
Organs taken before death	23.7	85.1	78.1	0.6
Adequate organ function in recipient	71.1	88.9	57.6	**<0.001**
Trust the medical system	84.2	87.5	38.9	**<0.001**
Factors relating to living organ donation				
HIV treatment would be changed	27.2	41.9	69.9	**<0.01**
Undergoing surgery	32.4	45.9	70.1	**0.01**
Poor health postdonation because of HIV	34.2	38.5	74.7	**<0.001**

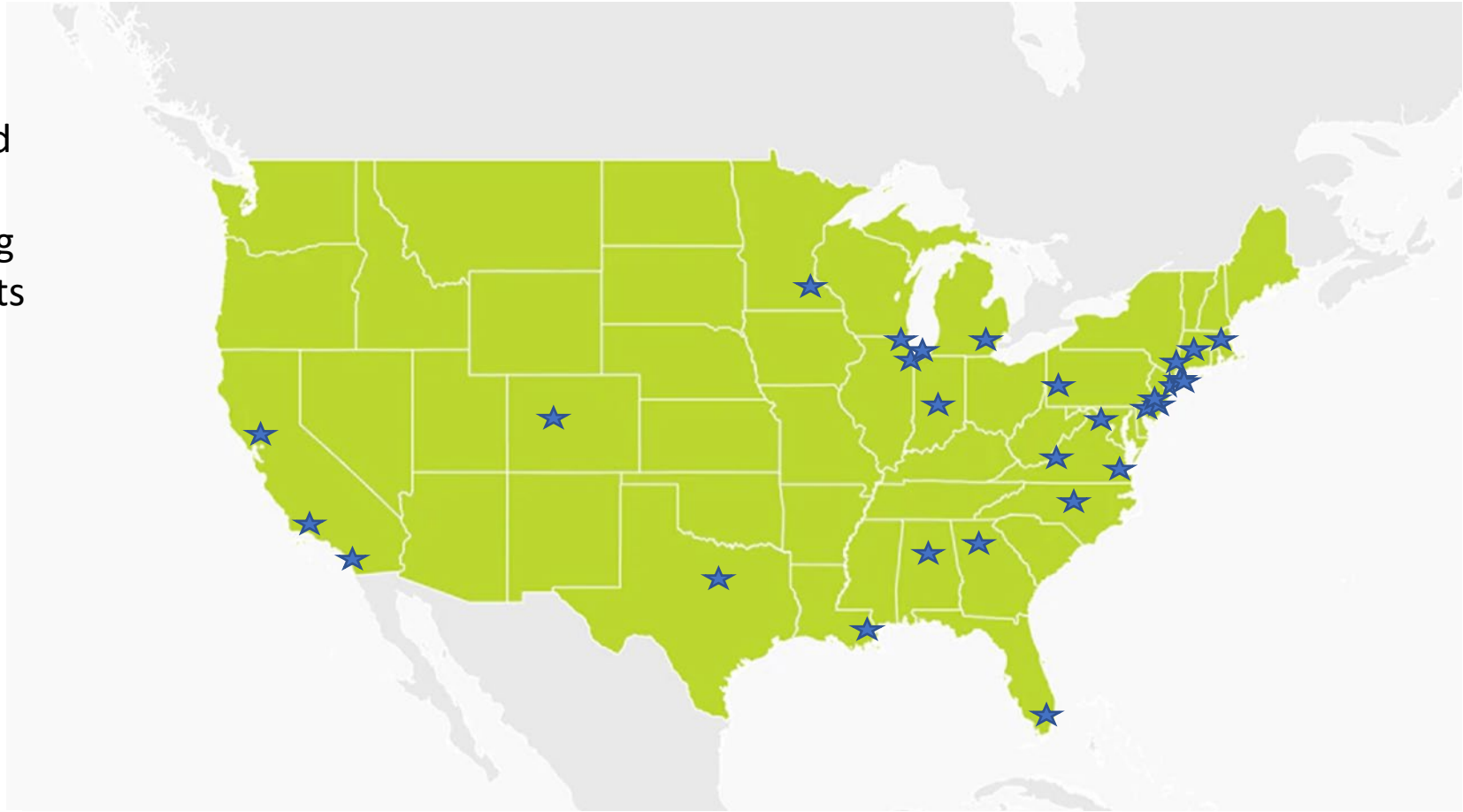
Bold text indicates a statistically significant difference with a *P*-value less than 0.05.

Currently Active HOPE Act Centers

As of Jun 30th, 2022:

226 donors recovered

223 deceased, 3 living
182 kidney transplants
76 livers
1 heart



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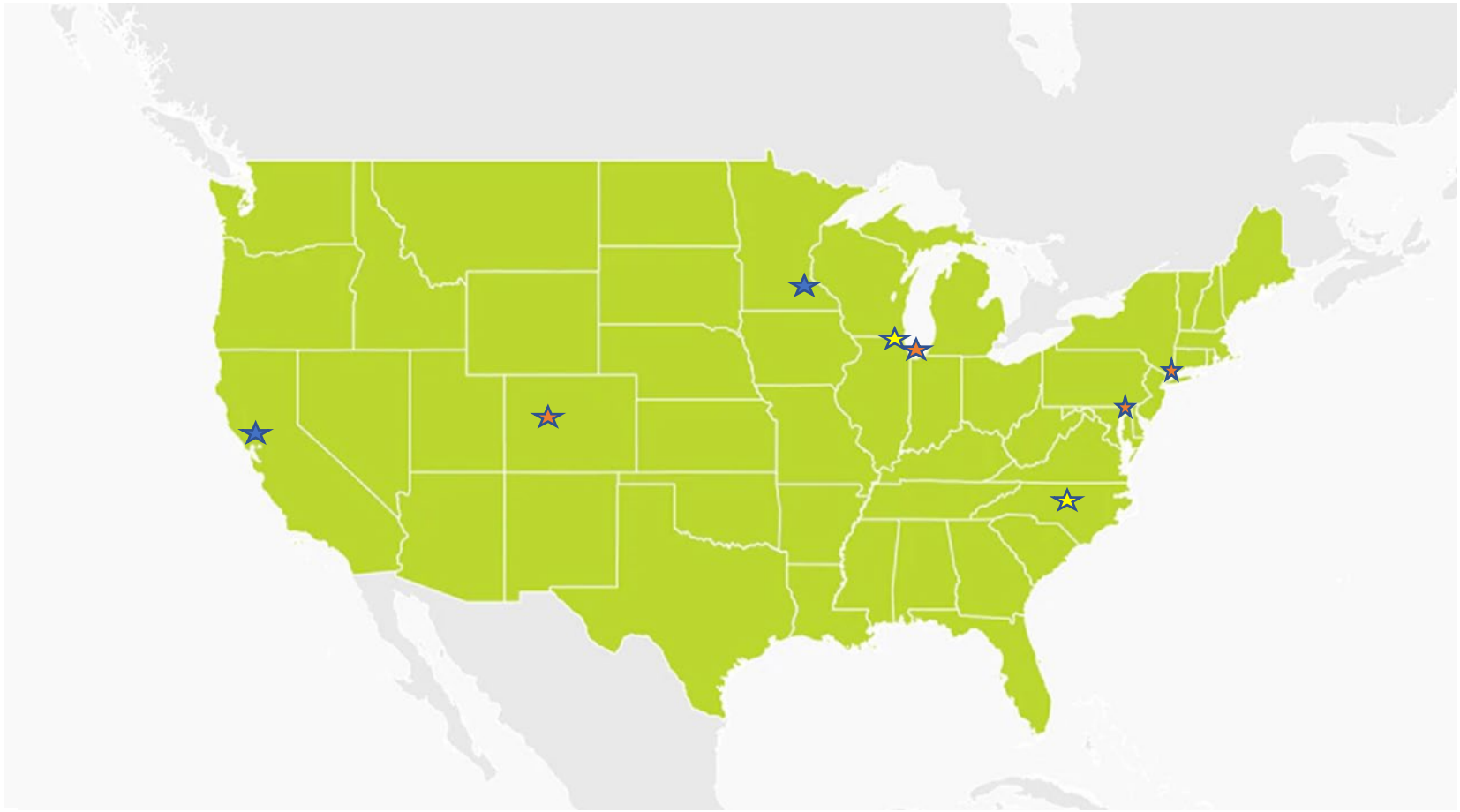
Active Living Donor HOPE Act sites:



Living Liver

Living Kidney

Both kidney/liver

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Activity so far through HOPE:

	Status					
	Active		Inactive		All	
Desired Organ	n	Percent	n	Percent	n	Percent
Kidney	63	44.4	79	55.6	142	100.0
Liver	3	60.0	2	40.0	5	100.0
Heart	0	0.0	0	0.0	0	0.0
Lung	0	0.0	0	0.0	0	0.0
Pancreas	0	0.0	0	0.0	0	0.0
Intestine	0	0.0	0	0.0	0	0.0
All	67	45.3	81	54.7	148	100.0

Table 3. Number of Registrations Indicated as Willing to Accept an HIV Positive Kidney or Liver by Active versus Inactive Status as of July 14, 2022

	Desired Organ			
Removal Reason	Heart	Kidney	Liver	All
Transplanted at another center (multiple listing)	0	28	1	29
Candidate condition improved	0	0	7	7
Changed to KP (by system)	0	4	0	4
Deceased donor transplant (HOPE Act)	1	272	72	345
Deceased donor transplant (non-HIV+ donor)	0	146	33	179
Died	0	55	9	64
Living donor transplant (HOPE Act)	0	2	0	2
Living donor transplant (non-HIV+ donor)	0	24	2	26
Other	0	29	1	30
Refused transplant	0	0	2	2
Too sick for transplant	0	30	4	34
Transferred to another center	0	5	0	5
Unable to contact candidate	0	3	1	4
All	1	598	132	731

Table 4. Registrations ever indicated as willing to accept an HIV positive organ that were removed from the Waitlist between January 01, 2016 and June 30, 2022

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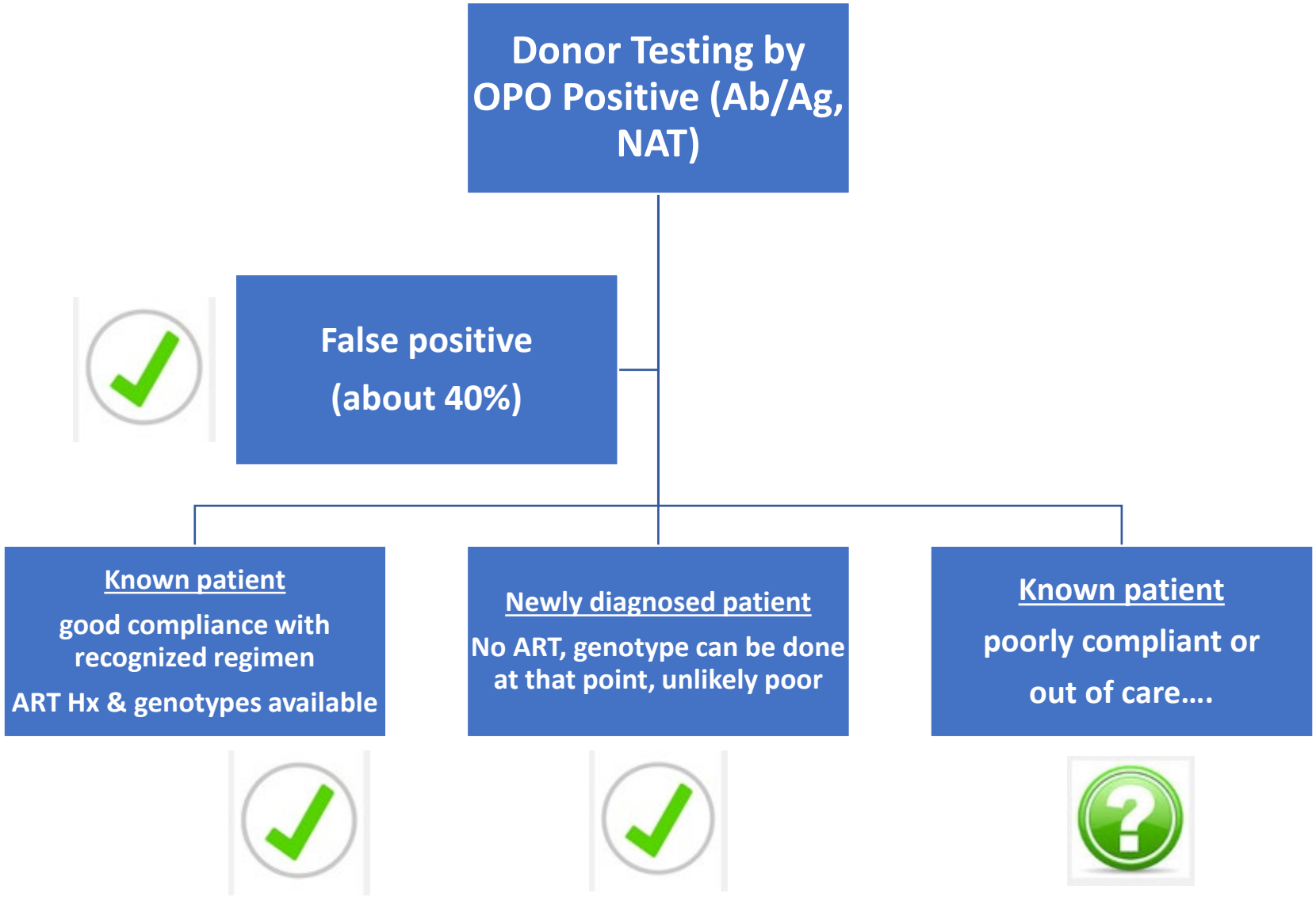
Unique role for a HIV physician?



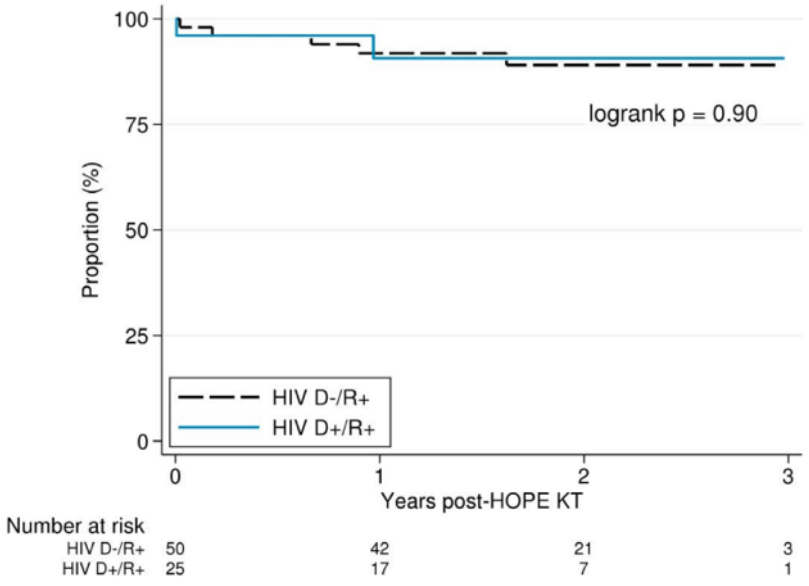
American Journal of Transplantation

HOPE Act Kidney Transplant

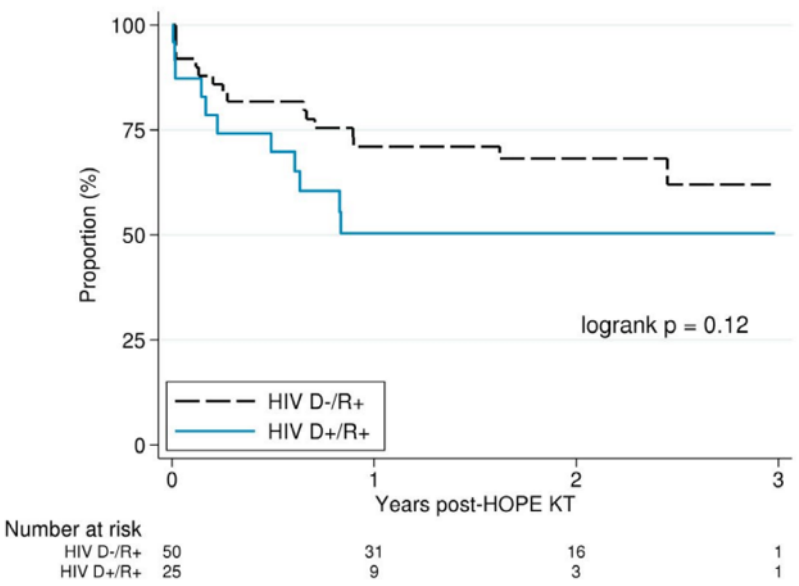
A prospective multicenter pilot study of HIV-positive deceased donor to HIV-positive recipient kidney transplantation: HOPE in action

Christine M. Durand[1] | Wanying Zhang[2] | Diane M. Brown[1] | Sile Yu[2] | Niraj Desai[2] | Andrew D. Redd[1,3] | Serena M. Bagnasco[4] | Fizza F. Naqvi[1] | Shanti Seaman[1] | Brianna L. Doby[1] | Darin Ostrander[1] | Mary Grace Bowring[2] | Yolanda Eby[4] | Reinaldo E. Fernandez[1] | Rachel Friedman-Moraco[5,6] | Nicole Turgeon[6,7] | Peter Stock[8] | Peter Chin-Hong[8] | Shikha Mehta[9] | Valentina Stosor[10] | Catherine B. Small[11] | Gaurav Gupta[12] | Sapna A. Mehta[13] | Cameron R. Wolfe[14] | Jennifer Husson[15] | Alexander Gilbert[16] | Matthew Cooper[16] | Oluwafisayo Adebiyi[17] | Avinash Agarwal[18] | Elmi Muller[19] | Thomas C. Quinn[1,3] | Jonah Odim[20] | Shirish Huprikar[21] | Sander Florman[21] | Allan B. Massie[2] | Aaron A. R. Tobian[4*] | Dorry L. Segev[2*] | on behalf of the HOPE in Action Investigators

A Graft survival by donor HIV status



B Rejection-free survival by donor HIV status



Outcomes	HIV D+/R+ N = 25	HIV D−/R+ N = 50	*P* value
Median follow-up time, y (IQR)	1.4 (1.1-2.3)	1.8 (1.4-2.6)	.14
Patient survival, no. (%)*	25 (100%)	75 (100%)	
Graft survival, no. (%)	23 (92%)	45 (90%)	>.99
Participants with delayed graft function, no. (%)	3 (12%)	21 (42%)	.01
Serious adverse events, per person-year**	1.1	1.1	.78
Participants with hospitalization due to infection, no. (%)	7 (28%)	13 (26%)	.85
Participants with opportunistic infection, no. (%)	4 (16%)	6 (12%)	.72
CMV viremia, no. (%)	3 (12%)	3 (6%)	.39
Esophageal candidiasis, no. (%)	0 (0%)	2 (4%)	.55
Candida glabrata fungemia, no. (%)	0 (0%)	1 (2%)	>.99
Bartonella infection of liver, no. (%)	1 (4%)	0 (0%)	.33
Participants with breakthrough HIV viremia, no. (%)	1 (4%)	3 (6%)	>.99
Participants with malignancy, no. (%)	0 (0%)	3 (6%)	.55
Kaposi sarcoma, no. (%)	0 (0%)	1 (2%)	>.99
Gastric adenocarcinoma, no. (%)	0 (0%)	1 (2%)	>.99
Oropharyngeal cancer, no. (%)	0 (0%)	1 (2%)	>.99
1-y eGFR filtration rate, mean, SD***	63 (28)	57 (17)	0

American Journal of Transplantation

HOPE Act Liver Transplant

HOPE in action: A prospective multicenter pilot study of liver transplantation from donors with HIV to recipients with HIV

Outcomes	HIV D+/R+ (*N* = 24)	HIV D−/R+ (*N* = 21)	*p*-value
Median follow-up time (months), (IQR)	18 (12, 24)	28 (21, 40)	.002
Deaths, no. (%)	6 (25)	2 (10)	.25
Graft failure, no. (%)	2 (8)	1 (5)[a]	>.99
Recipients with any liver rejection[b], no. (%)	4 (17)	4 (19)	>.99
SLK recipients with any kidney rejection, no. (%)	1 (33)	0 (0)	.38
Recipients with a SAE[c], no. (%)	15 (68)	16 (80)	.66
Recipients with an infectious hospitalization[c], no. (%)	8 (36)	5 (25)	.43
Recipients with an opportunistic infection, no. (%)	6 (25)	3 (14)	.47
Opportunistic infection episodes[d], no.	8	3	.049
Pulmonary aspergillosis, no.	1	0	
Candida esophagitis, no.	0	1	
CMV[e], no.	7	2	
Recipients with HIV breakthrough, no. (%)	2 (8)	2 (10)	>.99
Recipients with cancer, no. (%)	6 (25)	2 (10)	.25
Bowen's disease (squamous cell carcinoma in situ), no.	1	0	
Kaposi's sarcoma and/or HHV8-related lymphoma[f], no.	3	0	
Myoepithelial carcinoma of right parotid gland, no.	1	0	
Anal cancer, no.	1	0	
Recurrent hepatocellular carcinoma, no.	0	2	

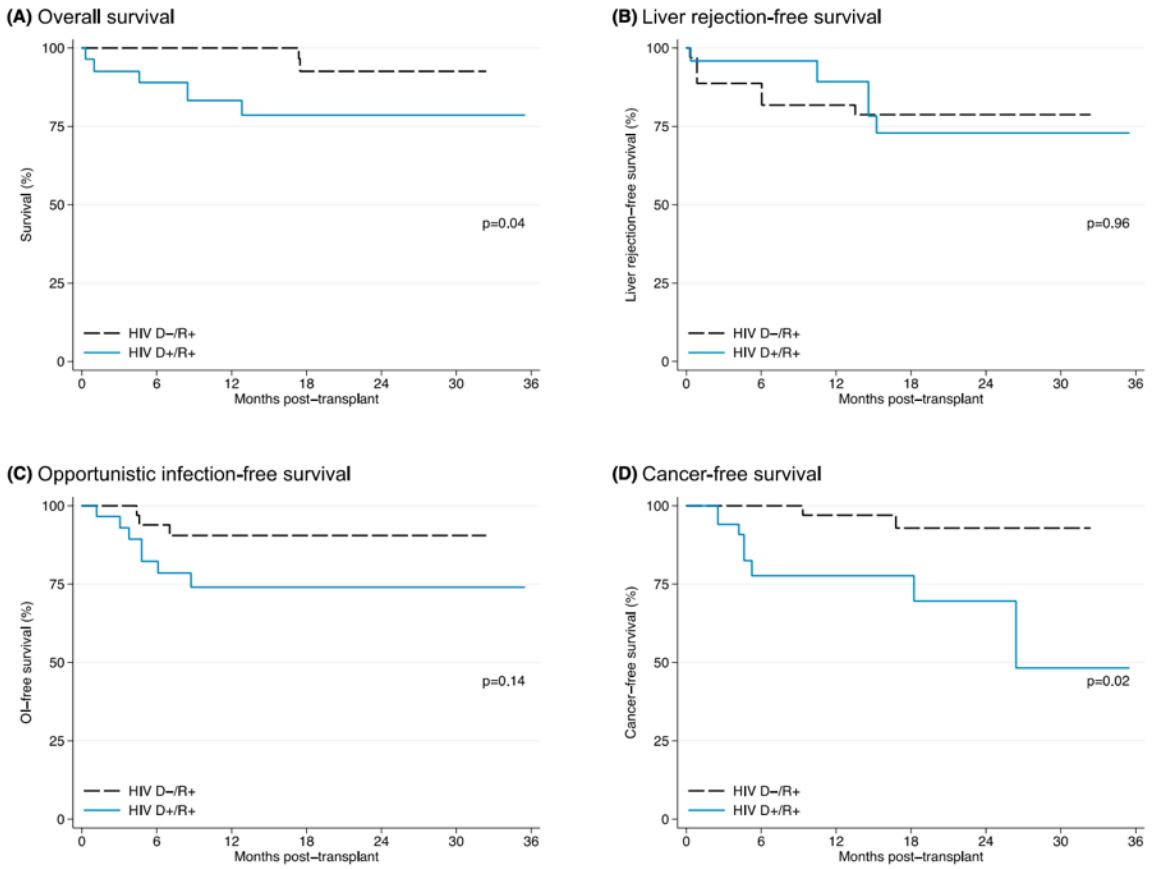


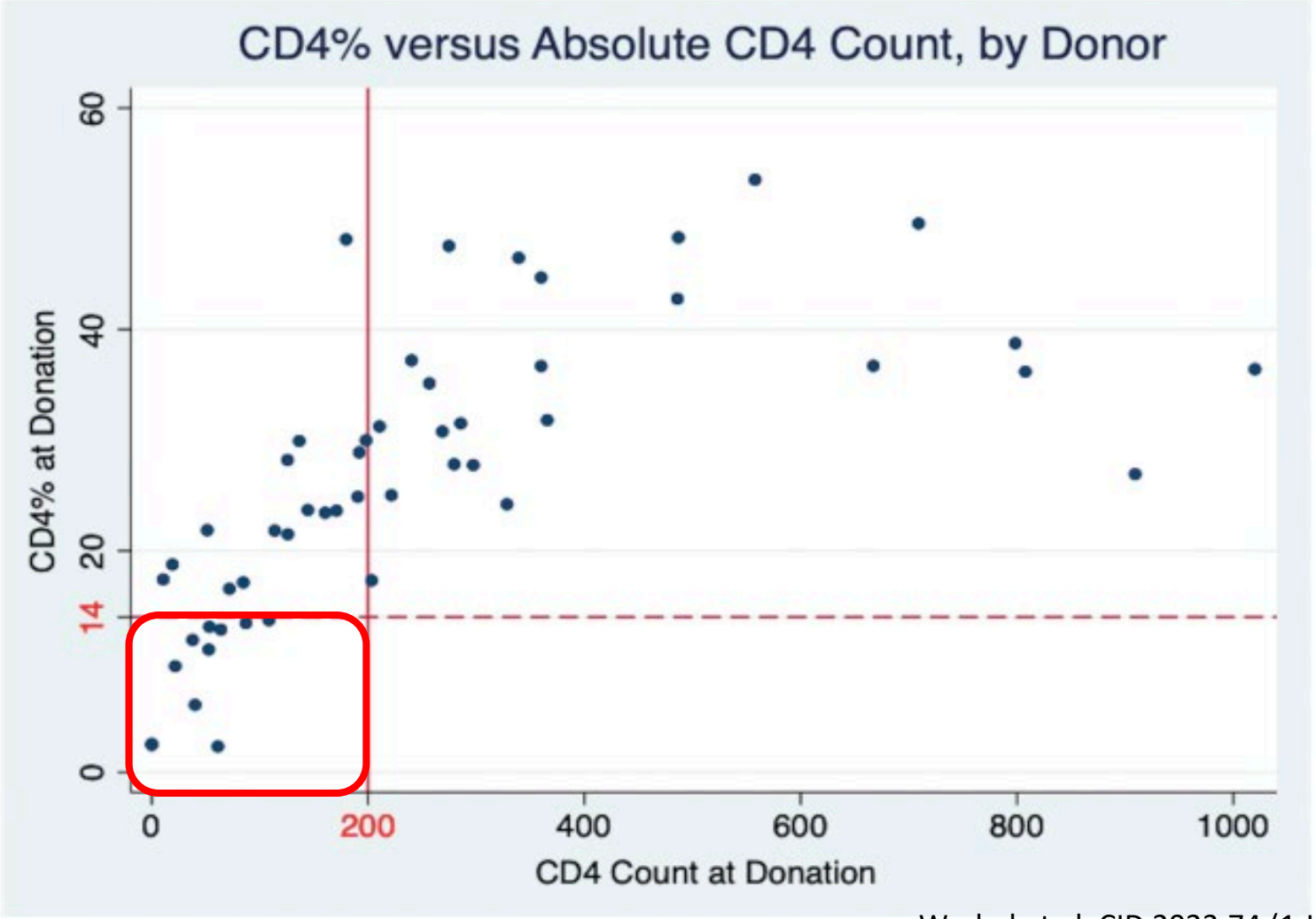
FIGURE 1 Post-transplant survival (A), liver rejection-free survival (B), opportunistic infection free-survival (C), and cancer-free survival (D) for liver and simultaneous liver-kidney recipients by donor HIV status, after weighting

Durand et al, Am J Transplant. 2022;22:853–864.

What do the donors look like?

Between March 2016 and March 2020, 92 donors (58 HIV positive, 34 FP), representing 98.9% of all US HOPE donors during this period, donated 177 organs (131 kidneys and 46 livers)

HIV Factor	Donors, No. (%)[a] HIV Positive (n = 58)	HIV FP (n = 34)
Reactive HIV screening assay[b]		
Anti-HIV I/II Ab	58 (100)	27 (79)
HIV qualitative NAT	40 (69)	5 (15)
Ab/Ag+	…	1 (3)
Confirmatory rule-out assay[c]		
Western blot	…	25 (74)
Ag/Ab (4th generation)	…	7 (21)
Quantitative PCR	…	4 (12)
Time of HIV diagnosis		
Prior knowledge	41 (71)	…
At admission	14 (24)	…
Unknown	3 (5)	…
HIV risk category[d]		
MSM	25 (43)	…
IDU	13 (22)	…
Heterosexual sex	16 (28)	…
Perinatal	1 (2)	…
Other or unknown	16 (28)	…
Reported ART use		
Yes	37 (64)	…
No	15 (26)	…
Unknown	6 (10)	…

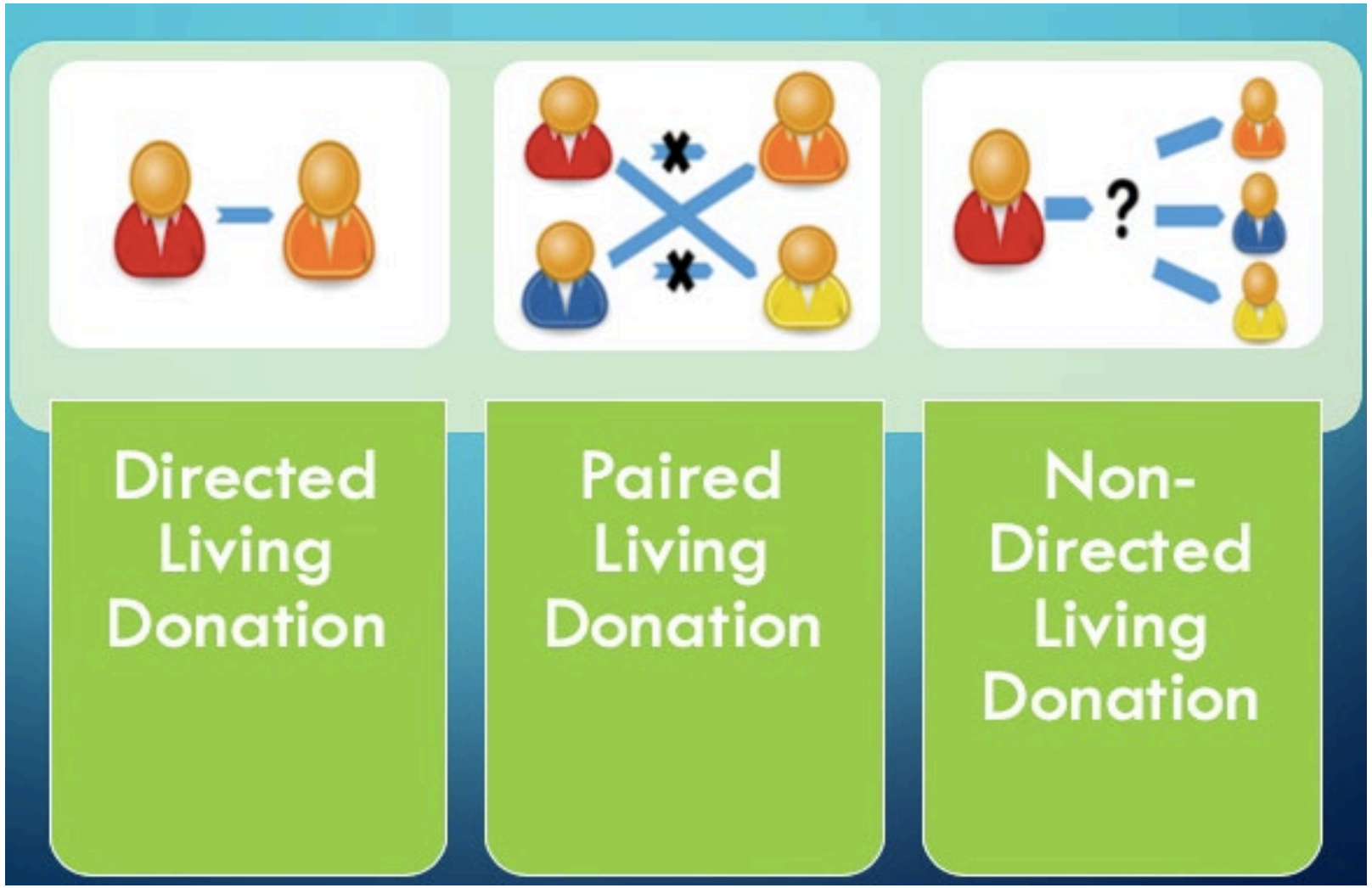


Werbel et al, CID 2022:74 (1 June)

HIV-positive LIVING donation:

- How do we *spread awareness* of Living Donation for PLHIV, while maintaining high ethical standards?
- What *operational* changes are required within our Center to ensure success?
- What *medical differences* should be considered for an HIV+ Living Donor?

3 Key Pathways



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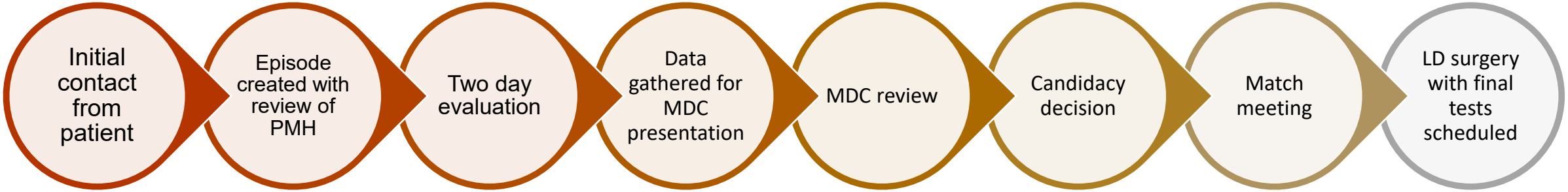
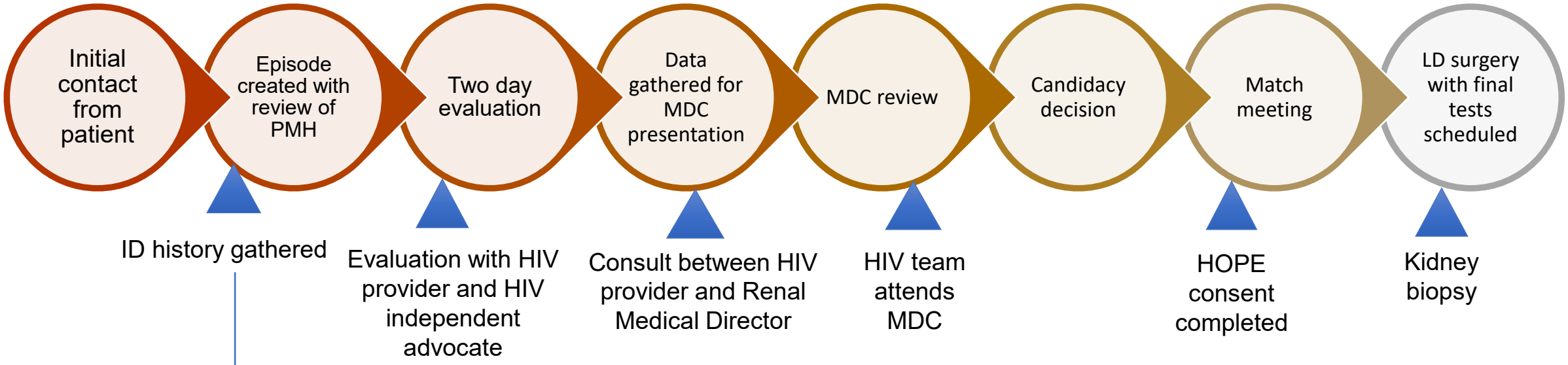
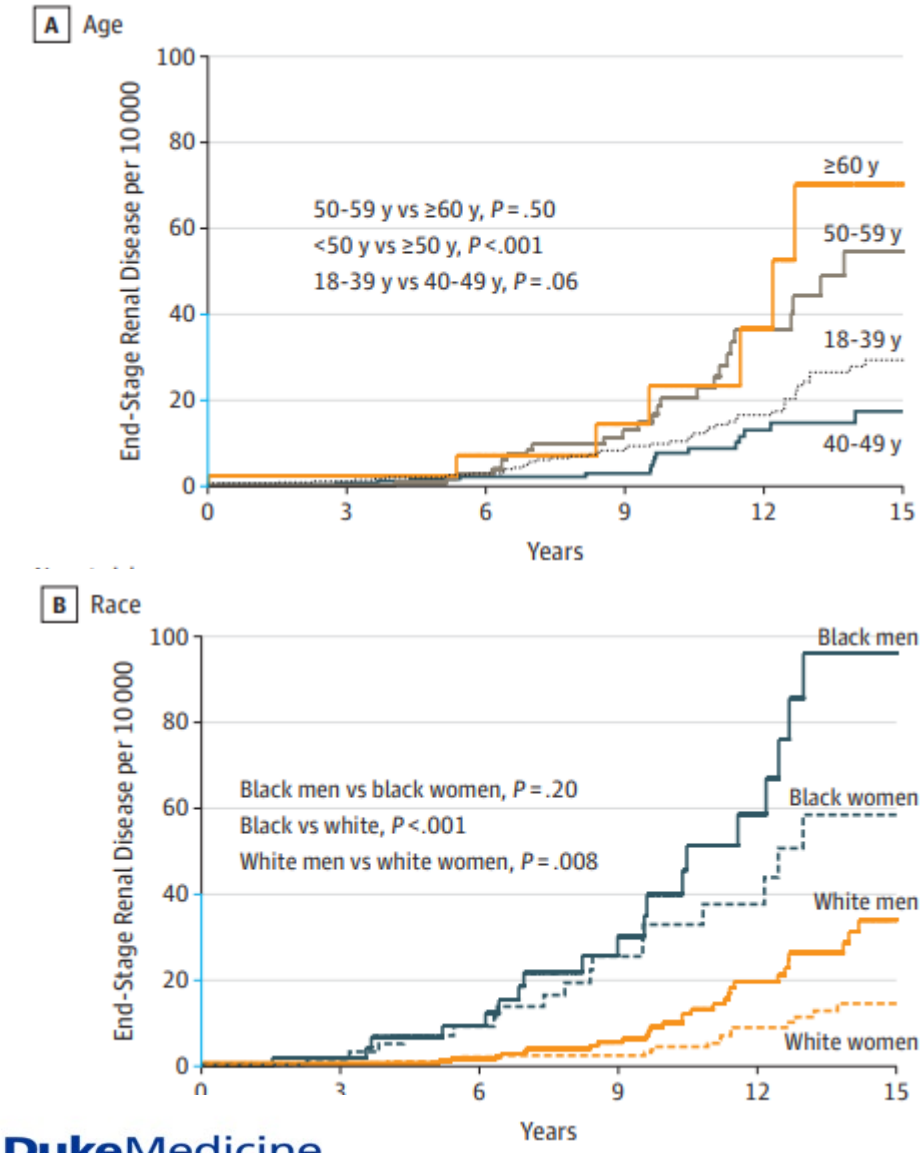
Living Donor Evaluation Process

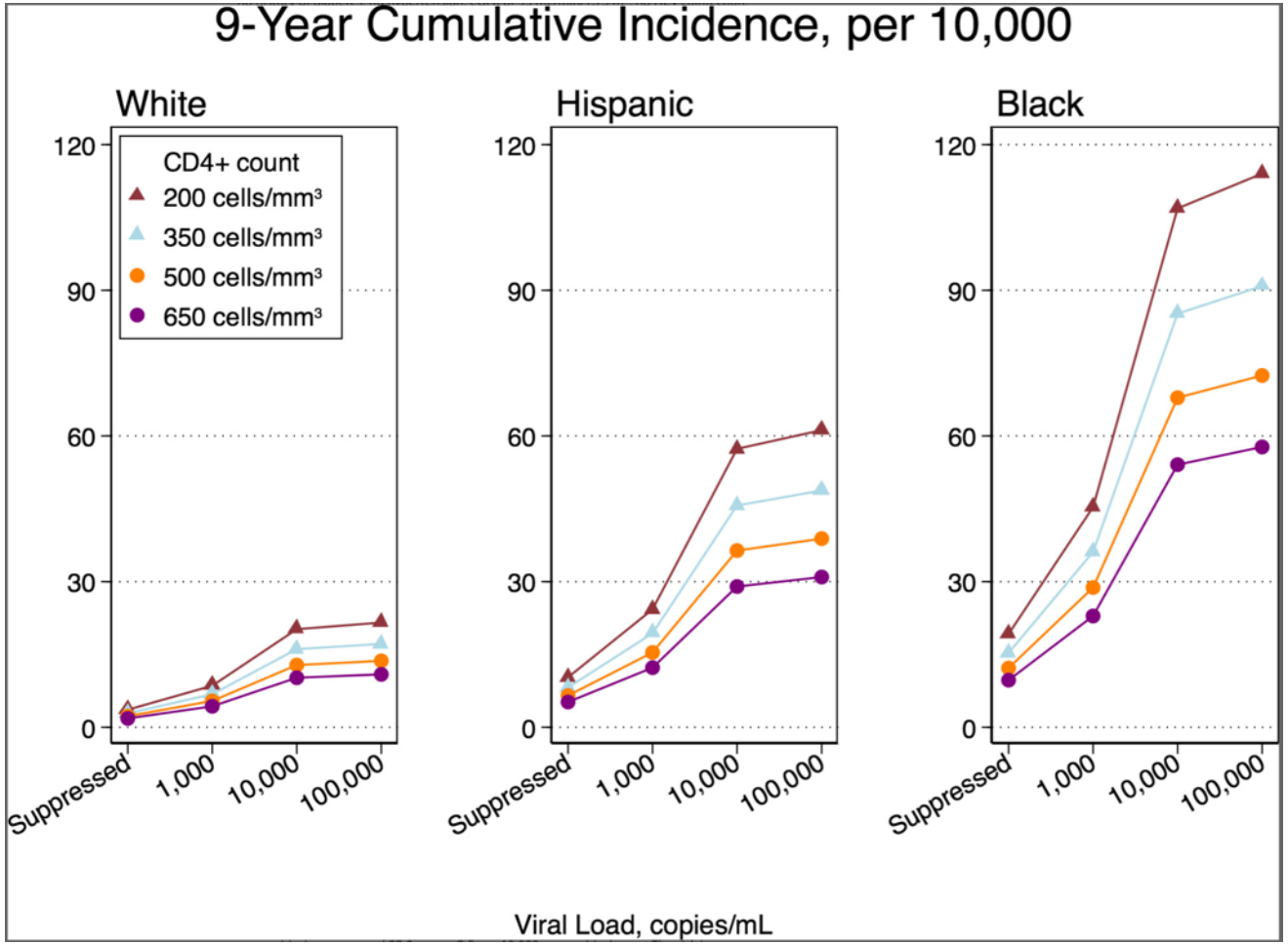


Living Donor Evaluation Process



Does organ donation put the donor at risk?





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Case #1 – Near Miss?

43 yo female admitted this am for questionable seizure. Pt was admitted prior on 5/2 for acute encephalopathy secondary to behavior issues from bipolar and possibly seizure activity. Pt discharged 5/3 and readmitted 5/12 with left tibial pilon and distal fibula fracture sustained during seizure activity. Pt underwent ORIF on May 16th and was recovering in rehab at Healthsouth when this am was found in her room having a seizure. CT head showed cerebral edema c/w global anoxic/hypoxic injury and possible acute R frontal cortical infarct. Pt absent of all reflexes on admission. Pt declared BD on 5/19.

PMH: HTN, depression, bipolar 1 disorder, anxiety, abnormal pap 2015, depression, manic depressive disease manic phase, PTSD, appendectomy, cervical biopsy with loop electrode excision; cholecystectomy, knee surgery, reduction mammaplasty;

Terminal Creatinine = 0.8
Listed "Cause of Death" = Intracranial Stroke

HIV history unknown, not on ART

HIV NAT +, HIV Ab I/II +

CrCl > 100, good urine output;
LFT's normal, hepatitis B/C negative

INFECTIOUS DISEASES

Test:	Hemodiluted Specimen?	Result:
Anti-HBc:	No	Negative
HBV NAT:	No	Negative
HBsAg:	No	Negative
HBsAb:	No	Negative
Anti-HCV:	No	Negative
HCV NAT:	No	Negative
Anti-HIV I/II:	No	**Positive**
HIV Ag/Ab Combo:		Not Done
HIV NAT:	No	**Positive**
Anti-HTLV I/II:	No	Negative
HTLV NAT:		Not Done
Anti-CMV:	No	**Positive**
Syphilis:	No	Negative
EBV (VCA) (IgG):	No	**Positive**
EBV (VCA) (IgM):	No	Negative
EBNA:		Not Done
Toxoplasma (IgG):	No	**Positive**

Case #1 – Near Miss?

Other, specify: MRI Brain	05/20/2018 20:39	N/A	N/A	N/A

FINDINGS: There is diffuse cerebral and cerebellar swelling present with complete effacement of the cerebral sulci and cerebellar folia. The ventricles and basilar cisterns are completely effaced and there is downward herniation of the brain through the foramen magnum. There is also compression of the midbrain from bilateral uncal herniation. There are absent arterial and venous flow voids. There are no findings to suggest underlying infection, but the study is technically limited for the assessment of intracranial infection secondary to the absence of intravenous contrast and the absence of intracranial blood flow. IMPRESSION: IMPRESSION: Diffuse cerebral and cerebellar swelling with downward herniation of the brain and compression of the brainstem. There is no evidence of intracranial blood flow. The findings are consistent with brain death.

From DRAI and speaking to the OPO:

- long history of mental illness. This was felt related to seizure meds +/- new psych drugs.

- first presented to hospital in early May, first seizure ever…
- admitted overnight for 24hrs , loaded with Keppra, discharged
- re-admitted following a fall , open # tib / fib. Ortho took to OR for ORIF – transferred to rehab
- at rehab, noted to be drowsy, complaining of headaches (? Pain meds, seizure meds)
- found one morning obtunded, down time unknown (?aspiration)

Case #1 – Near Miss?

	05/19/18 0749		Reference	
WBC	4.0		3.5-11.0	K/uL
RBC	4.45		3.79-5.11	M/uL
Hemoglobin	12.1		11.7-15.0	g/dL
Hematocrit	35.4		35.0-46.0	%
MCV	79.6		78.0-98.0	fL
MCH	27.2		25.0-34.0	pg
MCHC	34.2		31.5-36.0	g/dL
RDW	14.1		11.5-15.0	%
Platelet Count				
MPV	12.2		8.4-12.7	fL
Neutrophils #	3.46		1.60-8.30	K/uL
Lymphocytes #	0.28	(L)	0.70-4.00	K/uL
Monocytes #	0.18		0.10-1.00	K/uL
Eosinophils #	0.00		0.00-0.60	K/uL
Basophils #	0.02		0.00-0.20	K/uL
Immature Granulocytes #	0.01	C3	0.00-0.06	K/uL
Neutrophils %	87.5			%
Lymphocytes %	7.1			%

C3 Immature granulocytes, including metamyelocytes and myelocytes.

Cryptococcal Antigen, Titer

Status: **Final result** Visible to patient: **No (Not Released)** Next appt:

05/31/2018 at 09:45 AM in Orthopedic Surgery (Daniel E. Kronk, DO) Order:

	Ref Range & Units	7:56 PM
Cryptococcal Antigen	Negative	
Titer		1:640 (C)

Case #2 - Success – Living D+/R+ donation

- Outcomes - Donor:
  - Encouraged to change from Atripla → Triumeq given microalbumin
  - 3m later, albumin fell from 43 → 17 mg/L
  - Transplant approved, occurred in Aug 2019

  - Continues to do well, discharged from hospital 3 days later
  - Already back at work
  - Cr now 1.7, 3 months post-transplant

- Outcomes – Recipient:
  - Uneventful surgery, delayed graft fn
  - 1x early rejection biopsy, thymo given
  - Now Cr stabilized 1.7, well
  - Currently takes 0.5mg tac q14days (level =6.1)
  - ART pending simplification to
    - DOR / DOL / TAF / FTC

“ *Like many 20 year old gay men in the 80’s, one of things in the forefront of my mind was staying alive. Now 30 years later as a healthy undetectable HIV + transplant coordinator, I have the ability to help someone else worried about staying alive. Donation was not a difficult decision to make.* “

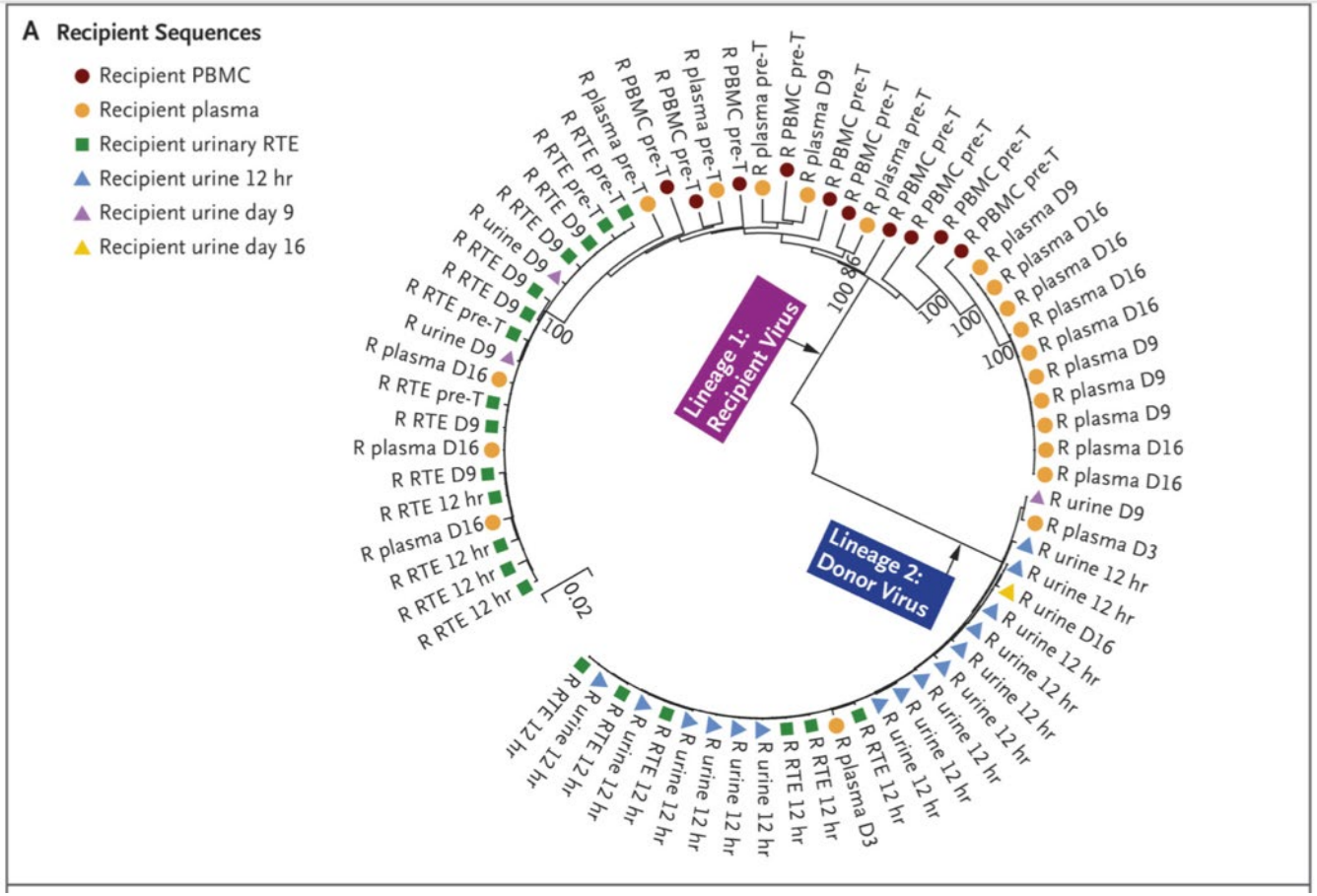
- Karl

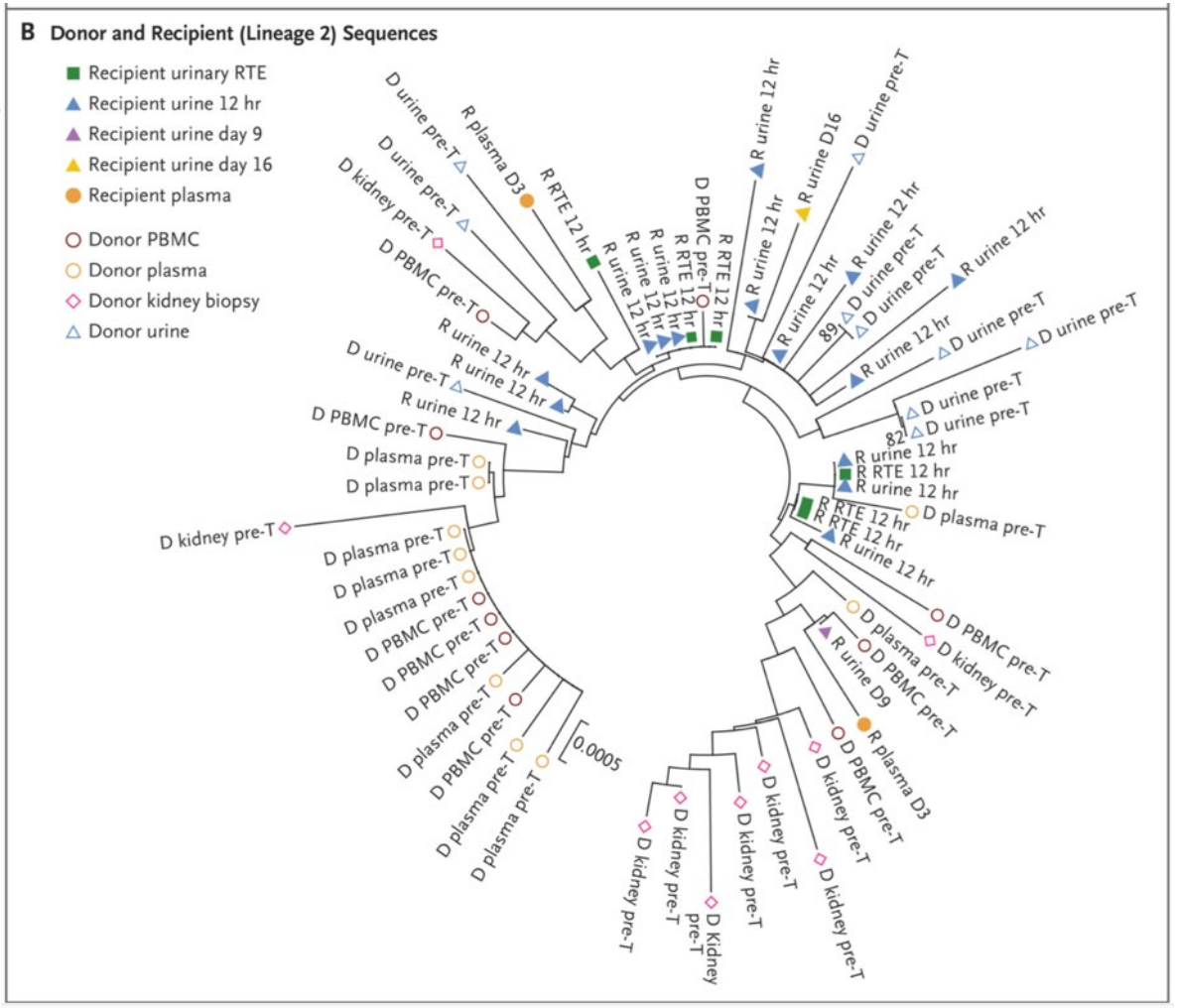
The NEW ENGLAND JOURNAL of MEDICINE

N Engl J Med. 2020 Jan 9;382(2):195-197. doi: 10.1056/NEJMc1910189.

Detection of Donor's HIV Strain in HIV-Positive Kidney-Transplant Recipient.

Blasi M[1], Stadtler H[1], Chang J[1], Hemmersbach-Miller M[1], Wyatt C[1], Klotman P[2], Gao F[3], Wolfe C[3], Klotman M[3].





So where to from here?

1. Improved awareness of options
   - Deceased organ donation
   - Living organ donation
   - Family discussions

2. Reduced barriers to getting people to transplant centers
   - Financial barriers
   - Connections between HIV + PCP providers and transplant centers
   - Acceptance rates at transplant programs

HIV D+/R- transplantation – the *final* frontier:

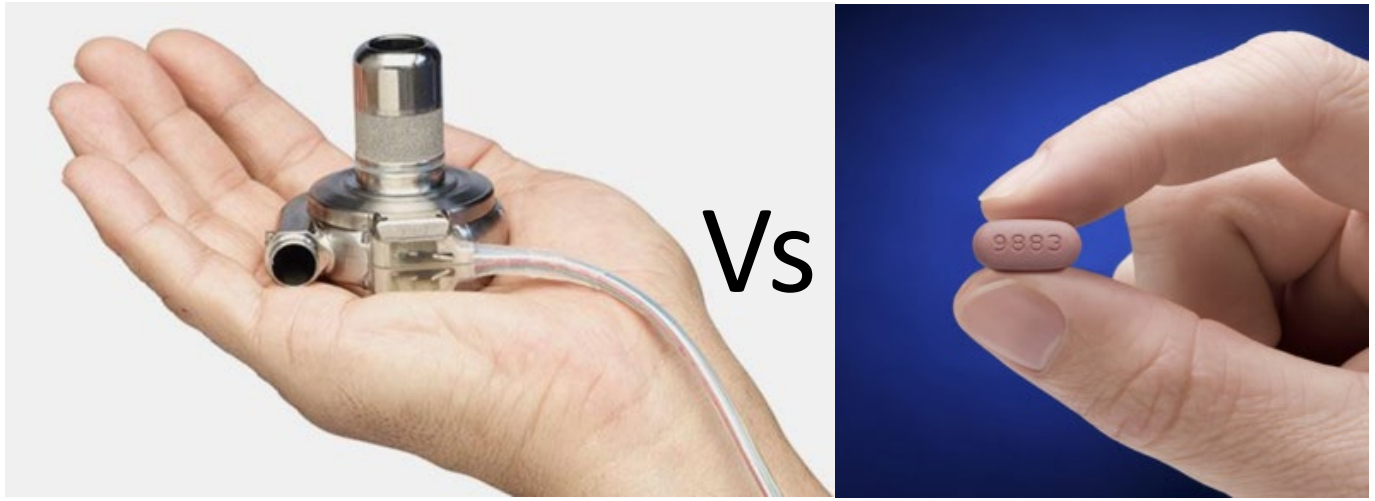
AIDS
An official International AIDS Society Journal

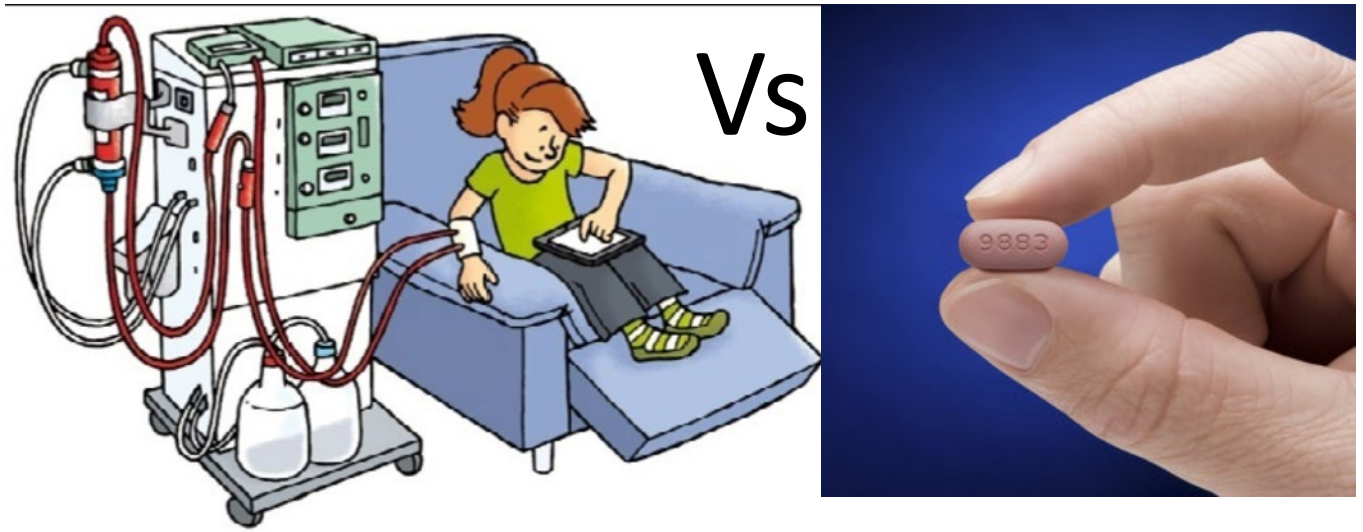
HIV solid organ transplantation: looking beyond HOPE

Michael A. Kolber

AIDS 2018, **32**:1733–1736

Keywords: combination antiretroviral therapy, HIV, solid organ transplantation, transplantation ethics, transplantation immunology





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HIV D+/R- transplantation – **the final frontier:**

HIV positive mom's liver transplanted into HIV negative child

NEWS / 4 OCTOBER 2018, 1:37PM / TEBOGO MONAMA

Minister of Health Aaron Motsoaledi at the Wits Donald Gordon Medical Centre. Picture: Karen Sandison/African News Agency(ANA)

Johannesburg- In what is believed to be the first in the world, researchers at Wits University have transplanted a liver from an HIV positive mother to her HIV negative child.

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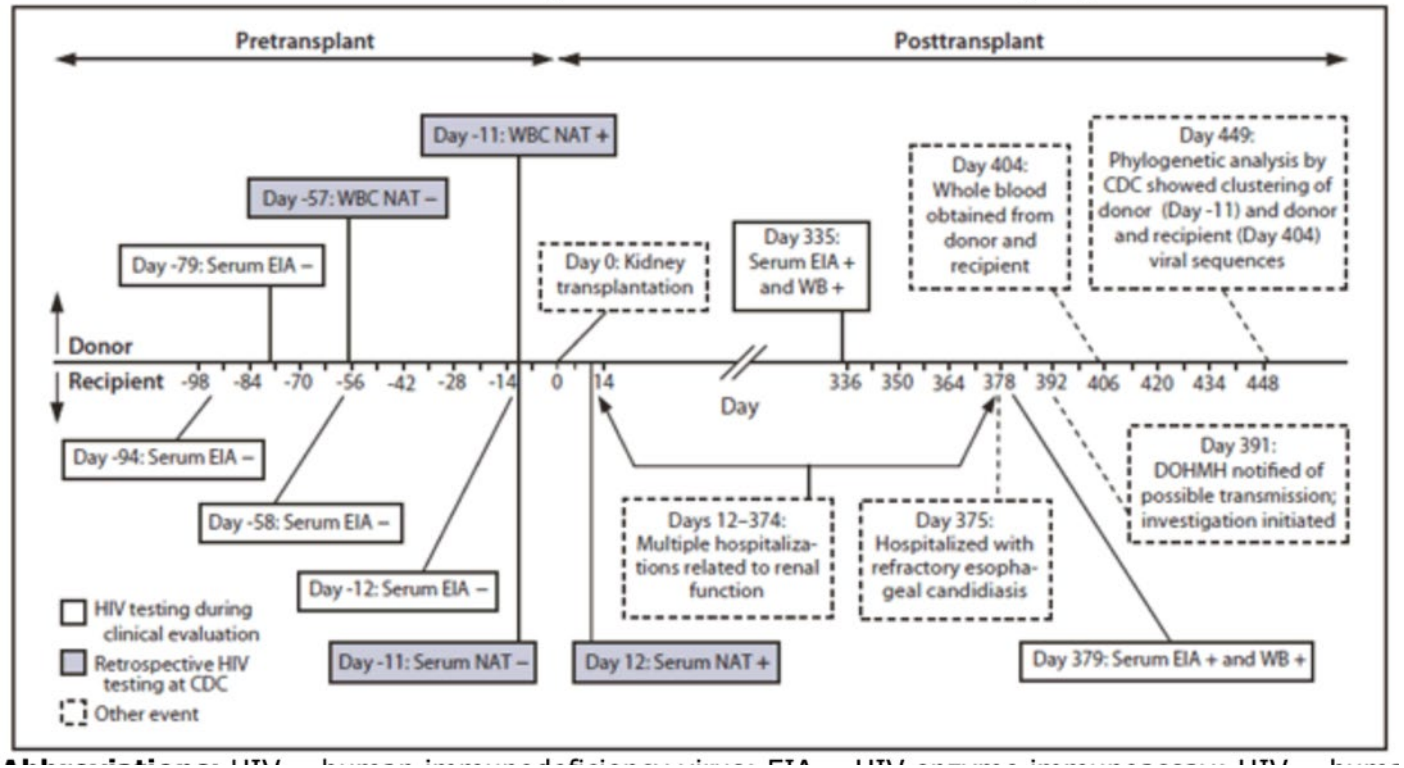
Wait – but what about safety data?



Occurred in 2011, NYC

10 years on:
Living donor remains healthy, on HAART
With normal residual renal function

Recipient remains healthy, on HAART,
with normal transplanted kidney function

Wait – but what about safety data?

Outcomes of Solid Organ Transplantation from an HIV Positive Donor to Negative Recipients.

S.-N. Lin,[1] M.-K. Tsai,[1] C.-Y. Luo,[2] C.-Y. Lee,[1] R.-H. Hu,[1] J.-M. Lee,[1] H.-S. Lai.[1]

[1]Department of Surgery, National Taiwan University Hospital, Taipei, Taiwan
[2]Department of Surgery, National Cheng Kung University Hospital, Tainan, Taiwan.

1 heart, 1 lungs, 1 liver, 2 kidneys (2011) – all placed immediately on HAART

Conclusions:

With HAART, all 5 HIV-negative recipients accepted the solid organ transplantation from the HIV-positive donor with normal CD4 T-cell counts. The patient and graft survival at 4 years were both 100%.

A network of friends: