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HIV and Organ Transplantation: Ethical Issues

THE 2ND MUHAS BIOETHICS WORKSHOP

THEME: ETHICAL, LEGAL AND SOCIAL ASPECTS OF ORGAN
TRANSPLANTATION IN TANZANIA

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Outline

1. Problem Statement:

- ❑ HIV and growing need for organ transplantation

2. Special Considerations:

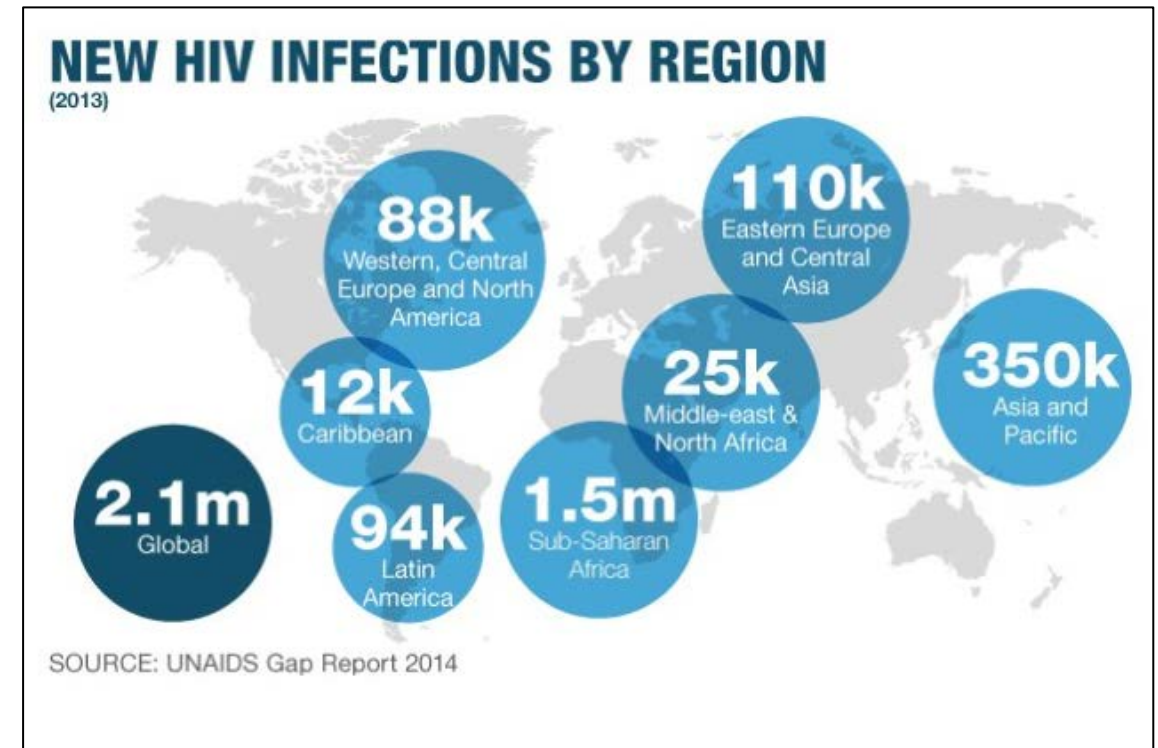
- ❑ Organ transplantation and people living with HIV/AIDS
- ❑ HIV to HIV transplantation

3. US case:

- ❑ 2013 HIV Organ Policy Equity (HOPE) Act – reverses 1980s law banning HIV+ organ donation

Growing Need for Organ Donations

1. HIV chronic disease; patients living fuller lives
2. Many HIV patients develop organ failure – especially kidney and liver
3. In some areas, kidney dialysis limited; organ transplantation preferable
4. Policies restricting HIV+ organ donations = added burden to wait list and impacted mortality
5. Viable organs from HIV+ recipient thrown away



Global Shortage of Organ Donations & Activity in Organ Transplantation 2014 Estimates

Kidney	Liver	Heart	Lung	Pancreas	Small bowel
84347	27759	7023	5046	2299	196

Percent of Transplantation					
66%	22%	5%	4%	2%	<1%

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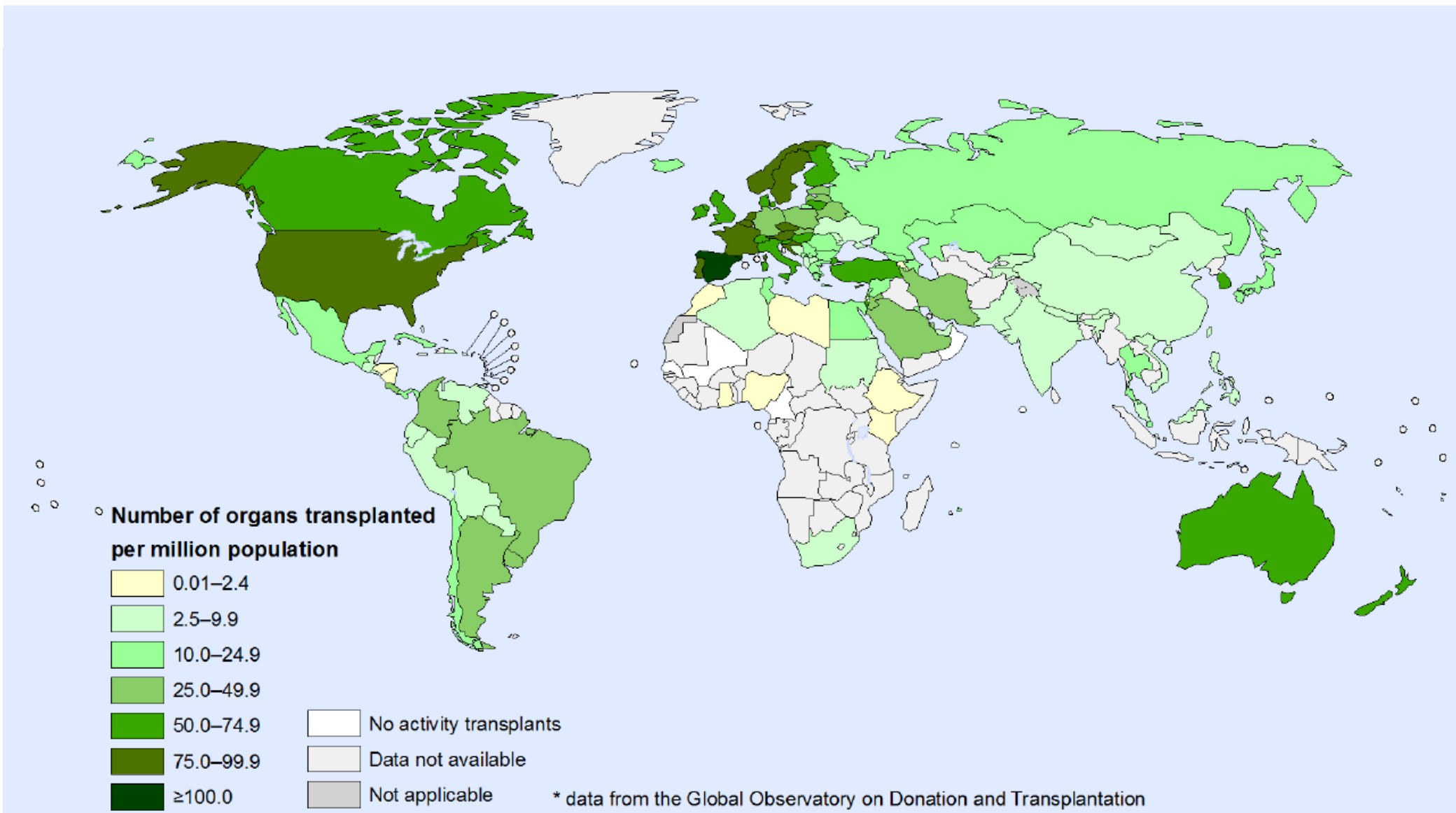
≈ 126,670 solid organs reported to be transplanted in 2015

≈ 5.8 % of increase over 2014

≤ 10% of global needs

41.8% of living kidney transplants and 21% of living liver transplants

Global Transplantation Activities of Solid Organs, 2015*



HIV and Kidney Disease

ckj

OXFORD



Leading European Nephrology

Clinical Kidney Journal, 2016, vol. 9, no. 6, 772–781

doi: 10.1093/ckj/sfw104

Advance Access Publication Date: 25 October 2016

CKJ Review

CKJ REVIEW

HIV and kidney diseases: 35 years of history and consequences

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SUMMARY:

- Common co-morbidity
- Affects up to 33% of HIV+ patients
- 1.5% of HIV+ are on dialysis*

HIV and **Liver** Disease

Arch Intern Med. 2006 Aug 14-28;166(15):1632-41.

Liver-related deaths in persons infected with the human immunodeficiency virus: the D:A:D study.

Weber R¹, Sabin CA, Friis-Møller N, Reiss P, El-Sadr WM, Kirk O, Dabis F, Law MG, Pradier C, De Wit S, Akerlund B, Calvo G, Monforte Ad, Rickenbach M, Ledergerber B, Phillips AN, Lundgren JD.

SUMMARY:

- Liver disease a leading cause of death for HIV+; 13% of deaths***
- High prevalence of co-infection with Hepatitis B & C**

Is There a Supply of HIV+ Organs?

Am J Transplant. 2011 June ; 11(6): 1209–1217. doi:10.1111/j.1600-6143.2011.03506.x.

Estimating the Potential Pool of HIV-infected Deceased Organ Donors in the United States

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National data sets and assessing health status of viable donors, concluded:

- 500-600 viable donors per year**
- Would decrease wait list of HIV+ and HIV- candidates**

Concerns with HIV+ Recipients

- ❑ HIV+ patients are immunosuppressed
- ❑ Organ transplants require patients to take immunosuppressive drugs to accept transplanted organs
- ❑ Concerns that organs transplant might actually do more harm than good: rapid progression of HIV to AIDS and death
- ❑ However, Stock et al (2010) found there was no evidence of accelerated HIV disease for kidney transplants with HIV+ patients*

Concerns with HIV+/HIV+ Transplants

- Healthy donor – what standards are needed?
- Healthy recipient – what criteria are required?
- Matched virus strains – crucial and demands additional review and screening

Small Group Discussions: Ethical Considerations for Your Country

- 1. Procurement:** Extra considerations for screening/eligibility of donors and recipients?
- 2. Procurement:** Expand donor pool to living donors?
- 3. Allocation of Resources:** Care coordination – burden or boom?
- 4. Consent Process:** Changes in outreach and education?
- 5. Consent Process:** Additional requirements?
- 6. Fairness/Common Good:** Donation Failure – does the next organ originate with HIV- donor? Implications for waiting lists?
- 7. Other?**

HOPE *IN ACTION*

HIV Organ Policy Equity (HOPE)

US CASE STUDY:

THE ROAD TO HOPE: HIV TO HIV TRANSPLANTATION IN THE US



South African Surgeon Elmi Muller: First HIV+ to HIV+ Kidney Transplant



1. HIV+ patients are living longer; other diseases occur, especially kidney disease.
2. Until recently, these patients were not eligible for dialysis in South Africa.
3. “Physicians have specific criteria to choose patients suitable for donors,” said Muller.
4. Since 2008, Muller has completed 43 successful transplants Cape Town’s Groote Schuur Hospital.*
5. A purely practical initiative:
“this group of young and working people with an excellent prognosis for therapy were good candidates for transplantation” ~ Elmi Muller



Dr. Dorry Segey, a transplant surgeon with the Johns Hopkins University.

"It occurred to us that there are thousands of patients with HIV in need of kidney transplants, liver transplants, who were waiting on waiting lists and suffered high risks of dying while waiting for these organs.

And at the same time, we were throwing away organs from donors infected with HIV just because they were infected with HIV. These were potentially perfectly good organs for these patients."

History of HIV+ Organ Transplant in the US

1988: Law prohibited HIV+ organ donation

1980s+: Organs screened for HIV status

2010s: Movement to overturn law

2013: HIV Organ Policy Equity (HOPE) Act enacted



Source: Google Images

HOPE Act Mandates

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3. Establish standards for transplant centers (IRB approval & data and monitoring reporting)

4. Establish research criteria for HIV+: HIV+ organ transplantation



US Donor Eligibility

Category	Requirements
All HIV+ deceased donors	<ul style="list-style-type: none">✓ No evidence of opportunistic infections✓ Pre-implant biopsy✓ Viral load – no requirement
Deceased donor with treatment history	Study articulates safe and effective post-transplant treatment
Living donors	Well controlled disease: <ul style="list-style-type: none">✓ CD4 \geq 500✓ HIV- RNA <50 copies✓ No evidence of opportunistic infections✓ Pre-implant biopsy



US Recipient Eligibility

Category	Requirements
Recipient	CD4 & T cell count ≥ 200
	HIV-1 RNA <50 copies
	Health status:
	<ul style="list-style-type: none">✓ Thorough review of medical history and concurrence with study team that candidate is eligible✓ No evidence of opportunistic infections✓ No history of CNS lymphoma✓ No history of progressive multifocal leukoencephalopathy (PML)



US Treatment Site Eligibility

- ✓ Established HIV program and HIV expertise on transplant team
- ✓ Experience with HIV- to HIV+ transplants
- ✓ Standard operating procedures related to organ transplantation
- ✓ IRB approved research protocol & biohazard plan
- ✓ Provide and support trained “independent advocate” to donor and recipient



In a first, HIV-positive donor's kidney, liver given to HIV-positive patients



March 20, 2016

Nation's First HIV-Positive Transplants

Liver transplant surgeon Andrew Cameron (left) performs the nation's first HIV-positive to HIV-positive liver transplant; kidney transplant surgeon Niraj Desai performs the nation's first HIV-positive to HIV-positive kidney transplant. Both patients respond well.

Source: Johns Hopkins Medical Institute

KIDNEY RECIPIENT

- ✓ Patient was HIV+ for >30 years.
- ✓ Suffered from hypertension and autoimmune problems, and had been on dialysis.
- ✓ On organ donation waiting list for years.

LIVER RECIPIENT

- ✓ Patient was HIV+ for > 25 years.
- ✓ Hepatitis C led to significant damage to liver.
- ✓ On organ donation waiting list for years.

Tribute from Hopkins HIV+ Donor's Family

“She was a daughter, a mother, and auntie, best friend and sister.

She was able to leave this world helping those underdogs she fought so hard for.

Our family was fortunate to have had her for the time we did and blessed she is able to continue on within our hearts and the souls of so many she is able to help!”

Key Differences: US and South Africa

	South Africa	US
Population	53 million	316 million
Persons living with HIV	5.6 million	1.1 million
HIV+ prevalence	17.8%	0.6%
Predominant subtype	C	B
Annual HIV+ deaths	310,000	17,000
Transplant wait list	4300	123,992

HOPE

IN ACTION →

IN 2016

HIV-to-HIV Transplants Save Lives

LIVES SAVED BY
TRANSPLANT **20**

9 ORGAN DONOR
HEROES

TRANSPLANT
CENTER
PARTNERS **13**

7 ORGAN
PROCUREMENT
ORGANIZATIONS

Visit transplantepi.org for more about HOPE
Register to be an organ donor at registerme.org

Source: Google Images

Conclusion: Novel approach highlights ethical concerns & benefits

CONCERNS

RECIPIENTS

- Access
- Risk
- Consent

DONORS

- Privacy
- Fairness
- Right to donate

BENEFITS

- Potential to reduce wait time:
 - In US, wait time for healthy kidney is 8 years
 - HIV+ kidney, the wait time is 1 year
 - By product, reduce wait time for HIV- organs
- Prolong life; improve quality of life

Next Steps

In Tanzania?

Next Steps

- Can we visualize a world where HIV+ to HIV+ transplants occur in Tanzania?

In Tanzania?

Next Steps

- Can we visualize a world where HIV+ to HIV+ transplants occur in Tanzania?

In Tanzania?

- Can we visualize a world where **HIV-** recipients receive HIV+ organs?

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