

# The Evolving Landscape of Kidney Transplantation

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# Disclosures

- Financial: none
- Operational:
  - Former Chair of UNOS Multiorgan Committee
  - Former Chair, UNOS Operations and Safety Committee
  - Former co-Chair, OPTN Expeditious Task Force

# Objectives

- To describe recent trends and challenges in kidney transplantation, including changes in donor profiles, allocation systems, and utilization rates.
- To explain the clinical, operational, and systematic factors that contribute to underutilization of donor kidneys and identify strategies to optimize organ acceptance and outcomes.
- To discuss the principles and implementation of the IOTA model as a framework for enhancing kidney utilization and equity in transplantation.

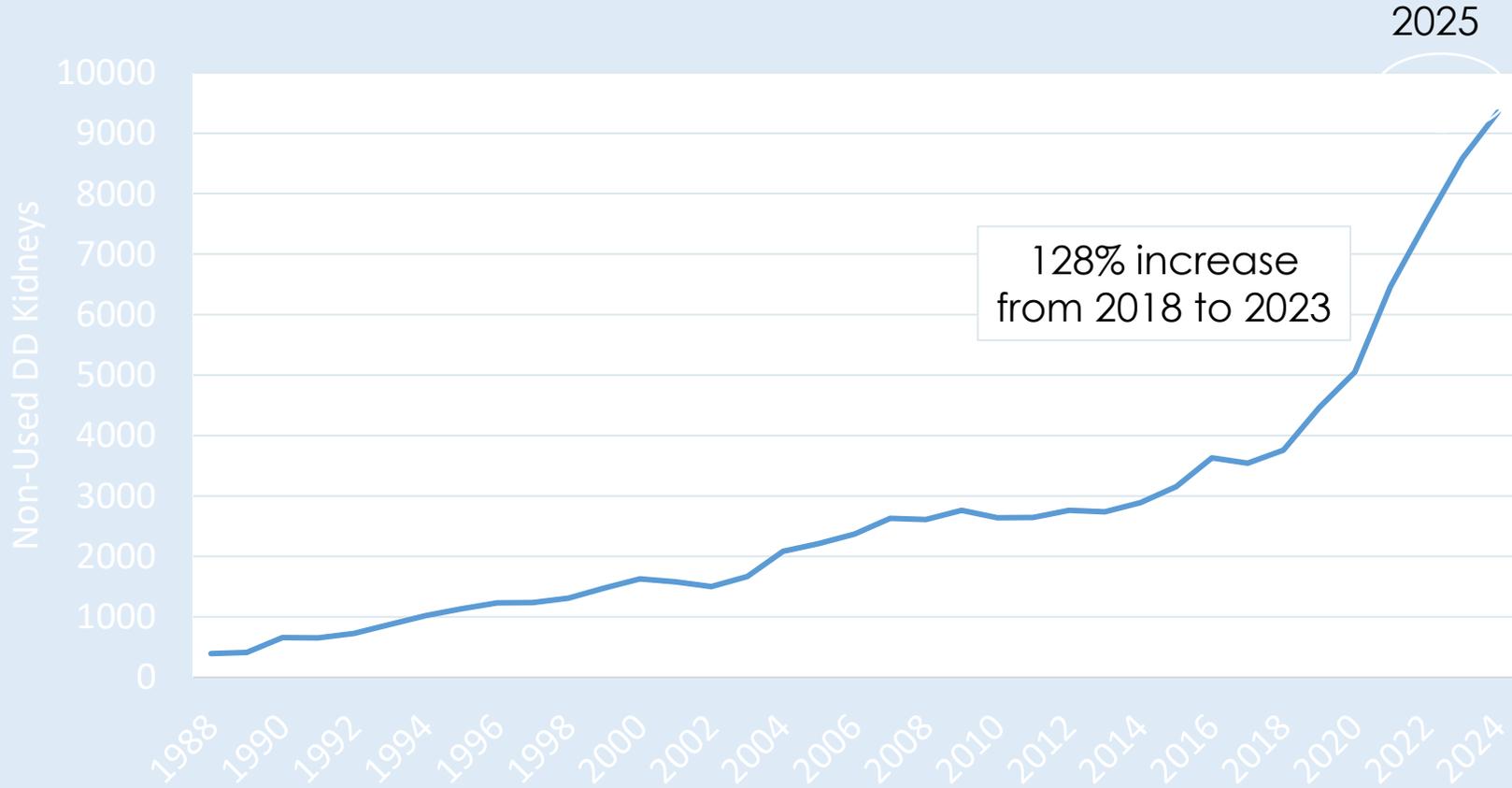
# Transplant in the U.S is Growing but Still Not Keeping up with Demand

- Patients and donors are both more complex
- Organ allocation is not always equitable and generally not efficient
- Access to transplant care and organs for transplant is uneven
- The U.S. system of transplant is facing considerable challenges and under intense, often negative, scrutiny.

# Donors and Recipients are More Complex

- Not the system I trained in or stepped into as a junior faculty
- Perhaps representative of the U.S. as a whole
- Some trends are challenging, but positive - like the reduction of brain dead donors because of improvements in the opioid epidemic

# Non-use rate of deceased donor kidneys is increasing- now 28%



# The System Has Not Caught Up with the Current Reality

- Allocation system designed for a different era
  - Non-use and non-utilization rates are unacceptably high
  - Expensive and complex
  - Much more work to do, modestly more transplants
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- **Donors aged 65+:** 72.2% nonuse.
  - **Biopsied kidneys:** 41.4% nonuse.
  - **DCD (Donation after Circulatory Death):** 34.8% nonuse.

# Technologies Are Changing Transplant Landscape

- Donor Centers
- Ex vivo machine perfusion
- Organ rehabilitation
- Organ transport
- Data-driven donor and allocation processes

# The Chapter of Donor Care Management Is Being Written Now

- NASEM Report called for Donor Care Units (DCUs) to be available all across the country
- Many OPOs, centers, opening DCUs now
  - UVA has a nascent virtual DCU, hoping to expand to brick and mortar DCU soon
- Critical care, as it turns out, is very different for donors whose goals are organ donation rather than preservation of life, as for patients.
- DCD issues for donor centers are being sorted out now
- NRP is being more broadly applied, but remains quite variable
  - TA vs. abdominal

# What is a Medically Complex Donor

- Medically complex does not equal “marginal” and are not unwanted
- Broad definition that encompasses different complexities
  - Medical history: age, HTN, DM, vascular disease, kidney abnormalities
  - Transmissible diseases- Infection and malignancy
  - Pre-mortem management
  - Anatomy and surgical damage
  - Warm and cold ischemia and variable preservation
  - Ex vivo resuscitation
  - Biopsy findings of donor-derived disease
- Not all medically complex donors are suitable for all recipients

# Examples of Donors That Are Now Usable

- Hepatitis C
- Hepatitis B
- Covid+
- AKI-D
- Certain malignancies
- Anatomic kidney abnormalities
- Broadly, complex medical histories

# Recipient Factors Considered for Medically Complex Donors

- Age or longevity of the recipient
- Peripheral arterial disease
- Obesity- especially central abdominal
- cPRA
- Severe hypertension
- Prior transplant status
- Surgical complexity
- Ability to withstand prolonged DGF
- Time to get to the transplant center

# Recipient Management and Selection

- Shared decision making with patients, education, and consent
- Surgical and medical team co-involvement
- Adapted peri- and post-transplant care for recipients, individualized to donor characteristics
- Donor review
- QAPI-driven efforts to standardize risk tolerance across transplant centers and follow through with data-driven approaches

# IOTA

- CMS risk-and-reward pilot to encourage growth in kidney transplant
- 3 Domains:
- Discuss at Listing Committee meeting and record
- Different medical conditions demand different listing beyond KDPI

# IOTA- in CMS's Words

- **Problem:** Kidney transplantation is the best treatment for most patients with chronic kidney disease and ESRD, but there are far more people in need of a kidney than there are organs available. Many people die every day while waiting for a kidney transplant.
- **Solution:** The IOTA Model provides incentives for kidney transplant hospitals to increase the number of kidney transplants, by maximizing the use of deceased donor kidneys and facilitating more transplants from living donors and improving the process and quality of care for people awaiting treatment.
- **Outcomes:** Improving the transplant system helps patients with chronic kidney disease access life-saving, high quality treatment resulting in optimal long-term health outcomes and reducing Medicare spending.
- **Strategy:** The IOTA Model demonstrates the critical impact of receiving high value care to promote healthier living and drive down long-term medical expenses.

# IOTA Goals

- Maximize the use of deceased donor kidneys
- Improve [quality of care](#) before, during and after kidney transplantation
- Create greater access to kidney transplants by addressing barriers to care
- Identify more living donors and assist potential living donors through the donation process
- Improve [care coordination](#) and [person-centeredness](#) in the kidney transplant process



# Landscape Changing

- HRSA Modernization Initiative
- Changing OPTN Board
- UNOS diminished and no longer sole contractor
- Multiple companies in logistics, testing, ex vivo care
- Heightened interest with Congress, news media, public
- Appropriate balance between stick and carrot not clear

# Summary

- A growing number of deceased donors are *medically complex*
- Innovation happening rapidly for donor management and ex vivo technologies, growing programs will need to lean into these changes
- Successful program growth requires an awareness of the dynamic aspects of the transplant ecosystem and adoption of multiple tactics to be successfully transplant a wide range of patients with a wider range of donors
- IOTA is CMS program that tries to encourage transplant growth