An Overview of Organ Allocation
The OPTN, Geography, & Policy

John J. Friedewald, MD
Northwestern Medicine
Past Chair, OPTN/UNOS Kidney Committee

Overview

• NOTA and the OPTN
• Evolution and Geography
• Policy Development

Evolution of Regulation

• 1980’s – transplantation grows with success of cyclosporine
• 1983-1984 – Unregulated transplant system publicized and congress intervened
• 1984 Congress passes National Organ Transplant Act (NOTA)

Transplant Policies

• NOTA established:
  – Task Force on Organ Procurement and Transplantation
  – Organ Procurement and Transplantation Network (OPTN) (contract held by UNOS since 1986)
  – Scientific Registry of Transplant Recipients (SRTR) (contract held by UNOS ’83-’03, Arbor Research ’03-’10 and Minnesota Medical Research Foundation ’10-present)
• Outlawed buying and selling of organs (“valuable consideration”)

OPTN

• Improve the effectiveness of deceased donor organ procurement and distribution
• Increase patient access to state-of-the-art transplantation technology
• Maintain and improve the skills of hospitals and professionals involved in organ procurement and transplantation
• Assure quality control by collection, analysis and publication of data

Disclosures

• Pfizer – grant support
• Transplant Genomics Inc. – equity, consulting, grant support
• Sanofi - consulting
OPTN Goals

• Improve the system for sharing organs so as to:
  – Facilitate donor and recipient matching, based on specific criteria established for each organ
  – Improve transplantation outcomes
  – Decrease the wastage of organs

OPTN Goals

• Maintain a computer-based organ allocation system and an Organ Center:
  – 24-hour transplant program access to the donor/recipient matching system
  – Collect data on transplant recipients from the time of the transplant until graft failure or patient death

Definitions

• OPO: Organ Procurement Organization
• Transplant center: Hospital that is an OPTN member
• Transplant program: A transplant center may have more than one transplant program
• OPTN waiting list: computerized list of patients waiting to be matched with a specific donor

Geography

• To achieve efficiency in the system (minimize cold ischemic times of organs, etc.) and promote donation in local areas allocation in most cases is:
  – Local
  – Regional
  – National

Definition of Local

• Local unit (the transplant list) is the OPO in most cases (also known as donor service area or DSA):
  – The kidney sharing unit consists of all transplant programs served by an OPO (usually multiple programs)
  – May be several different sizes
• Alternative local unit (ALU) requests have been granted on occasion
  – The kidney sharing unit may comprise more than one OPO
  – Dissolved in the new Kidney Allocation System initially, but requests may be considered after the first year

NOTA & OPOs

• Qualified organizations
  – [A] is a nonprofit entity
  – [II] rely on outcome and process performance measures that are based on empirical evidence, obtained through reasonable efforts, of organ donor potential and other related factors in each service area of qualified organ procurement organizations
  – [F] has a defined service area that is of sufficient size to assure maximum effectiveness in the procurement and equitable distribution of organs
  – [A] have effective agreements, to identify potential organ donors, with a substantial majority of the hospitals and other health care entities in its service area which have facilities for organ donation
Examples of Different Sized Local Units for Kidney Sharing

Examples of Different Sized Local Units for Kidney Sharing

Geographic Disparities in Allocation

- Given the regionality of organ allocation, disparities in access to transplant based on geography have developed and worsened over time
- Not addressed for many years, now an issue being addressed by UNOS Committees on an organ-specific basis
- Starts with defining metrics of equity (MELD score, LAS score, waiting time, etc.)

Optn Board of Directors

- Officers
- Regional representatives
- Patient and donor family representatives
- Voluntary health organization representatives
- Medical/scientific organization representatives
- Histocompatibility lab, OPO and transplant coordinator representatives
- Approximately 50% physicians and surgeons
Membership in the OPTN

• Congress has ruled that it is mandatory for every transplant center to belong to the OPTN and to abide by its rules and regulations
• Non-compliance with OPTN rules and regulations can lead to withholding of all Medicare funding for that hospital

OPTN Data Collection

• All data is collected via an online Web application called UNet™
• Transplant programs, histocompatibility labs and OPO’s use UNet™ for the following:
  – Manage lists of waiting patients
  – Complete electronic data collection forms
  – Add donor information and run donor-recipient matching lists
  – 26 different forms contain 3,500 data fields

Optn Data Collection

• Mandatory to submit data to the OPTN at the designated times
  – Pretransplant data
  – Transplant data
  – 6 months posttransplant and on every transplant anniversary
  – Malignancy forms

Allocation of thoracic organs

Josef Stehlik, MD, MPH
Associate Professor of Medicine
Medical Director, Heart Transplant Program
University of Utah School of Medicine
Director, ISHLT Transplant Registry

Disclosures: None

UNOS waiting list priority

• Initial algorithms:
  – Match compatible organs
  – Base priority heavily on time on waiting list
  – Allocate organs locally first

Change in OPTN rules - 1998

• Broader geographic sharing of organs
• Reduce importance of waiting time
• Use objective medical criteria to establish medical urgency for transplant

Lung allocation before 2005
• Heavily based on time on waiting list
• Extra 90 days provided to candidates with idiopathic pulmonary fibrosis

Development of Lung Allocation Score (LAS)
• Goals:
  – reduce the number of waiting list deaths
  – increase transplant benefit for recipients
  – efficient and equitable allocation

Predictors of mortality

Factors used to calculate LAS

Heart allocation - 1988
• Medical urgency:
  – Status 1- MCS or ICU & inotropic support
  – Status 2- all others
• Time on waiting list
• Local allocation first

Medical urgency change - 1999
• Aimed at better stratifying risk of mortality on the waiting list
  – Status 1A
  – Status 1B
  – Status 2
Expanded regional sharing - 2006

Nativi JN, Stehlik J. J Heart Lung Transplant. 2011; 30(8)

Reduced mortality on the waiting list

Wever-Pinzon O, Stehlik J et al. Circulation 2013 Jan 29;127(4)

Change in transplant rate

Colvin-Adams M, Kasiske BL et al. Am J Transplant. 2014 Jan; 14

Change in status at transplant distribution and waiting times


Conclusion

- Organ allocation algorithms evolved to minimize waitlist mortality and maximize transplant benefit
- Changes in organ allocation need to be responsive to changes in clinical care of patients with advanced organ disease

© 2015 American Society of Transplantation