Are Centers Really Equal? The Regulatory Impact on Donor Lung Acceptance

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Cutting Edge of Transplantation

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Balancing Equity and Utility in the Face of an Organ Shortage

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Disclosure

I have no pertinent disclosures.
Learning Objectives

• Variation in lung transplant rates
• Potential causes of observed variation in transplant rates
• Regulatory Impact
• Impact of transplant rates on mortality
Percentage transplanted within one-year

OPTN/SRTR 2018 Annual Data Report: Lung
Geographic disparities in lung transplant rates

- Lung Transplant rates differ substantially between DSAs
- Potential recipients could double their transplant rates by moving. (Equivalent to increasing their LAS from ~ 40 to ~ 50)

Kosztowski M. et al. AJT 2018
Potential Causes of Disparate Rates

• Donor Lung Supply
  – Donation Rates
  – Population Density
  – OPO
• Candidate characteristics
• Transplant Program Behavior
Donor Availability

Geographic disparities in donor lung supply and lung transplant waitlist outcomes: A cohort study

- Average local lung availability by DSA
- Lung availability = Number of transplanted lungs in 1 year post listing/Number on waitlist at the time of listing

Benvenuto LJ et al. AJT 2018
Geographic disparities in donor lung supply and lung transplant waitlist outcomes: A cohort study

Quartile 1 = the waitlist patients in lowest lung availability DSAs, had the highest incidence of waitlist death & lowest transplant rates

Benvenuto LJ et al. AJT 2018
Lung Transplant Rates vs Donor Availability

Figure 2. Unadjusted (observed) LT rates ... LT, lung transplant; DSA, donation service area.

DSA without LT center LT rate per active person-year
Transplant Program Adjusted Acceptance Ratios
Regulatory Impact on Organ Acceptance
Significant alterations in reported clinical practice associated with increased oversight of organ transplant center performance.

- Survey at UNOS Transplant Management Forum 2009
- 55% had low performance
- Increased selection criteria for recipients (81 vs 38%) & donors (84 vs 52%)

Schold JD et al. Prog Transplant 2010
Association Between Liver Transplant Center Performance Evaluations and Transplant Volume

- Decrease in donor age
- Decrease in Ischemia time

AJT, Volume: 14, Issue: 9, Pages: 2097
The association of center performance evaluations and kidney transplant volume in the United States

Schold et al. AJT 2013
Kidney offer acceptance at programs undergoing a Systems Improvement Agreement

- 6 %-point reduction in organ acceptance
- 12.3 %-point for KDPI 0-40
Lung Transplant Rates and Candidate Mortality
Association of pretransplant and posttransplant program ratings with candidate mortality after listing

- Cohort: Adults July 2011 – June 2014
- Five tier ranking for:
  - Waitlist Mortality
  - Transplant Rates
  - One-year post transplant graft survival
- Outcome: Candidate mortality after listing

Wey et al. AJT 2018
Association of pretransplant and posttransplant program ratings with candidate mortality after listing

Lung

<table>
<thead>
<tr>
<th>Tier Difference</th>
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Evaluation
- Waitlist Mortality
- Transplant Rate
- Posttransplant Survival

Liver

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</table>

Evaluation
- Waitlist Mortality
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Association of pretransplant and posttransplant program ratings with candidate mortality after listing

Figure S3

Waitlist Mortality

Transplant Rate

Posttransplant Graft Survival

Hazard Ratio (Reference = 0.5)

Five–Tier Score

Five–Tier Score

Five–Tier Score
Conclusions

• Lung transplant rates vary significantly across DSAs & programs
  – Donor availability
  – Program behavior
• Program evaluations impact donor acceptance rates & likely access
• ? Optimal transplant rates for lung transplant