# Establish Continuous Distribution of Lungs

*OPTN Lung Transplantation Committee*

# Purpose of Proposal

- Part of larger effort to align all organs in a smarter allocation system
- Align lung allocation with community, ethical, and regulatory goals and medical advancements
- Move from classification groups with hard boundaries to considering individual candidates holistically
- Based on feedback provided from community earlier this year

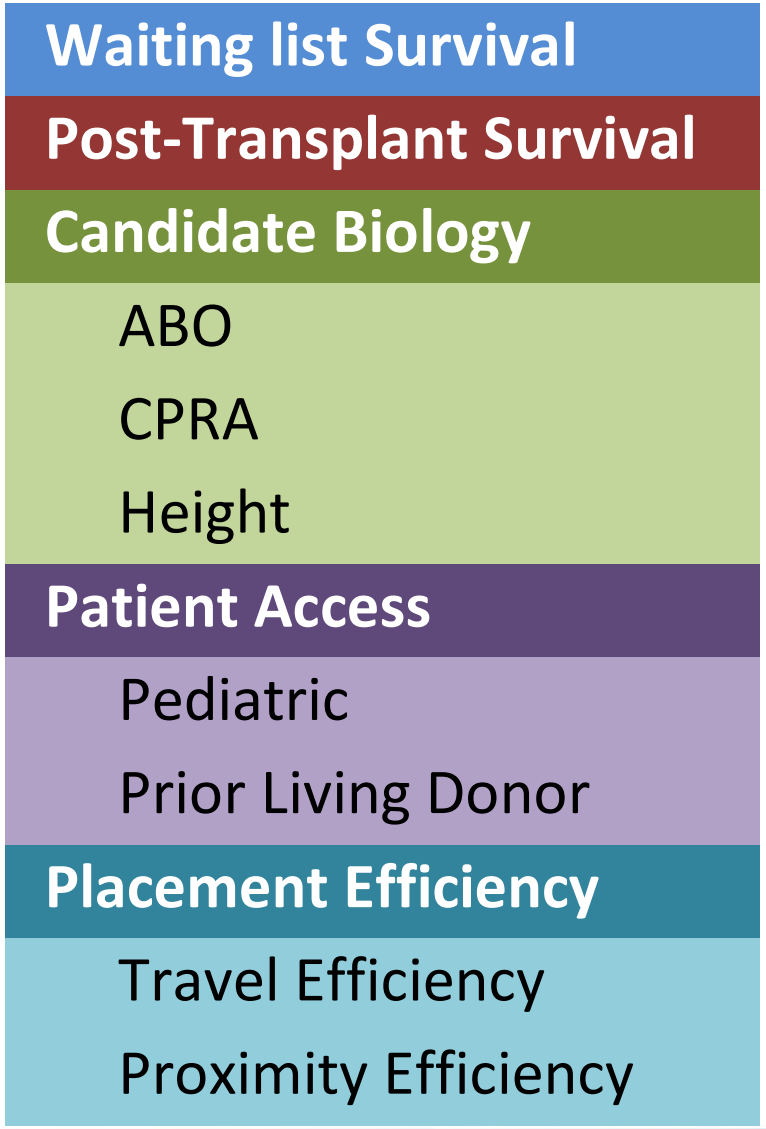
# Proposal

- Lung allocation
- Lung exceptions
- Heart-lung, lung-liver and lung-kidney allocation

# Lung Allocation

# Proposal: Lung Allocation

- Replace classification-based allocation with a composite allocation score (CAS) for each candidate
- Score is made up of attributes aligned with Final Rule requirements



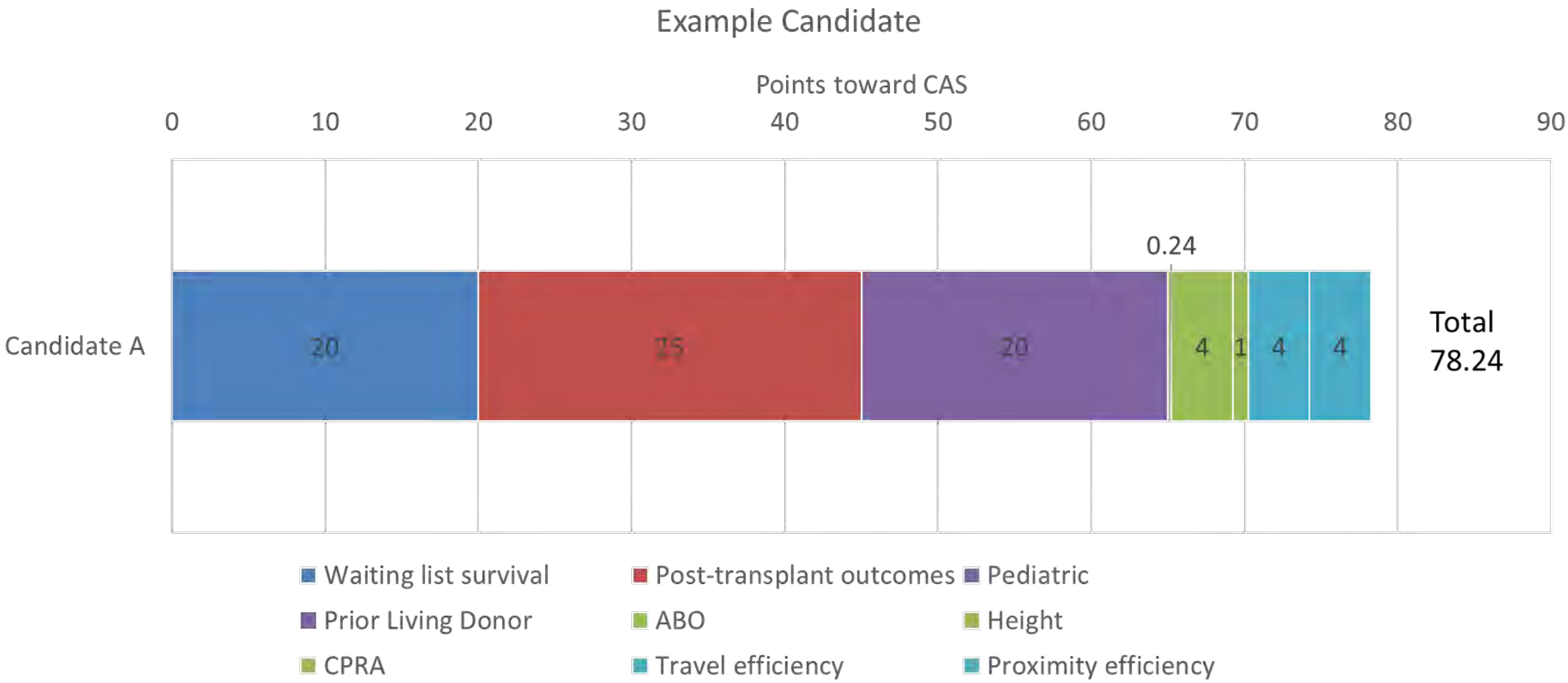
# Composite Allocation Score

| Attribute | Definition | % of Available Points |
|---|---|---|
| **Waiting list Survival** | **Expected 1-year waiting list survival** | **25** |
| **Post-Transplant Outcomes** | **Expected 5 year post-transplant survival** | **25** |
| **Candidate Biology** | **Total of ABO, CPRA, and height points** | **15** |
| ABO | Based on percentage of compatible donors by blood type | 5 |
| CPRA | Based on percentage of compatible donors by CPRA | 5 |
| Height | Based on percentage of compatible donors by height | 5 |

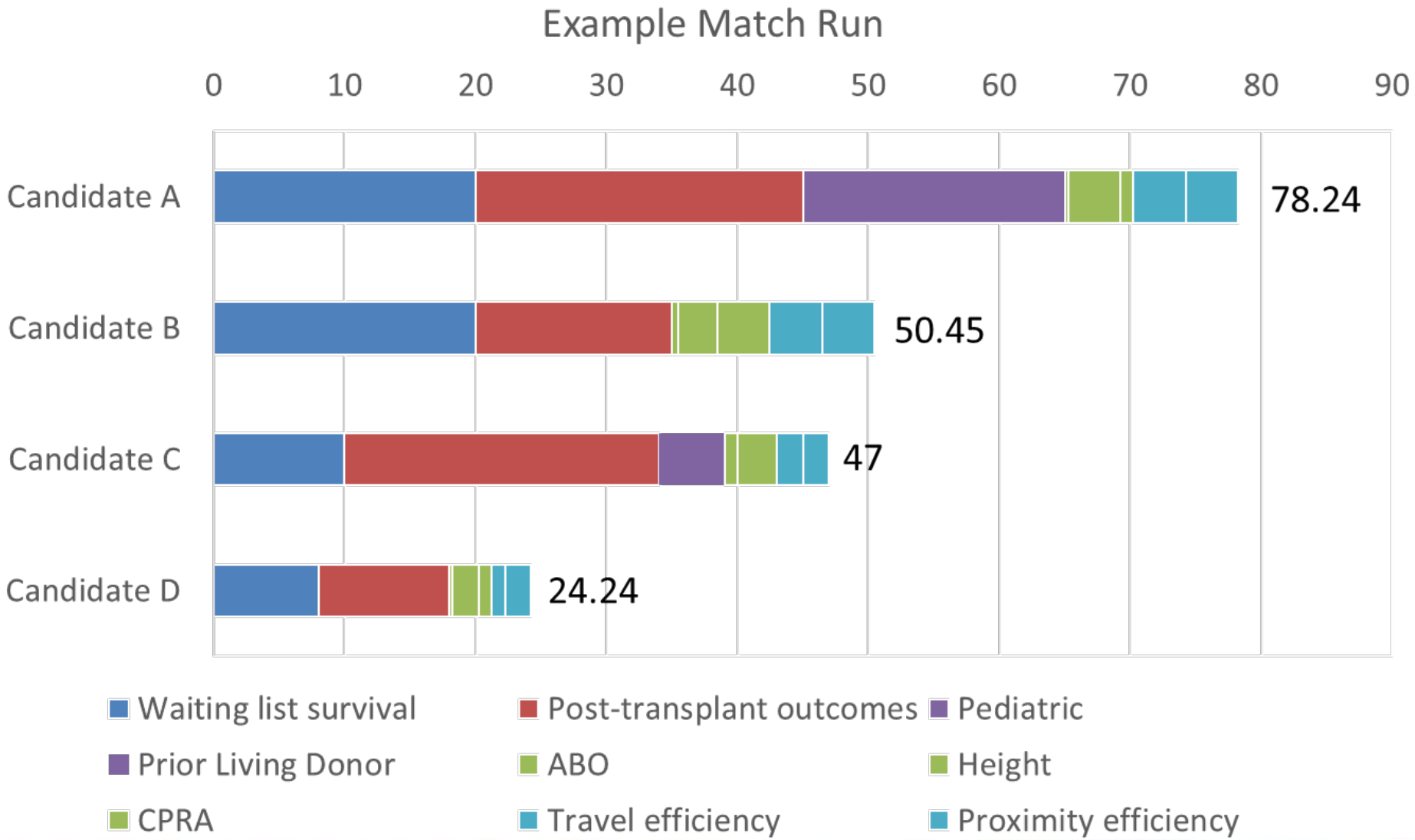
# Composite Allocation Score

| Attribute | Definition | % of Available Points |
|---|---|---|
| **Patient Access** | **Total of pediatric and prior living donor points** | **25** |
| Pediatric | For candidates under 18 years old | 20 |
| Prior Living Donor | For candidates who donated any organ | 5 |
| **Placement Efficiency** | **Total of travel and proximity efficiency points** | **10** |
| Travel Efficiency | Based on impact of distance on costs of travel | 5 |
| Proximity Efficiency | Based on impact of distance on other efficiency (time, availability, etc.) | 5 |
| **Total Score** | **Waiting list Survival + Post-Transplant Outcomes + Candidate Biology + Patient Access + Placement Efficiency** | **100** |

# Composite Allocation Score



# Composite Allocation Score



# Interactive Visuals to Inform Decision-Making

- Interactive Tableau dashboard tool available to simulate comparisons and match runs

- Change weights to see match run ordering
- Compare current match run with composite allocation score
- Compare two candidates by selecting clinical criteria
- Calculate scores with different rating scales
- Display candidates equity and utility scores with different weights

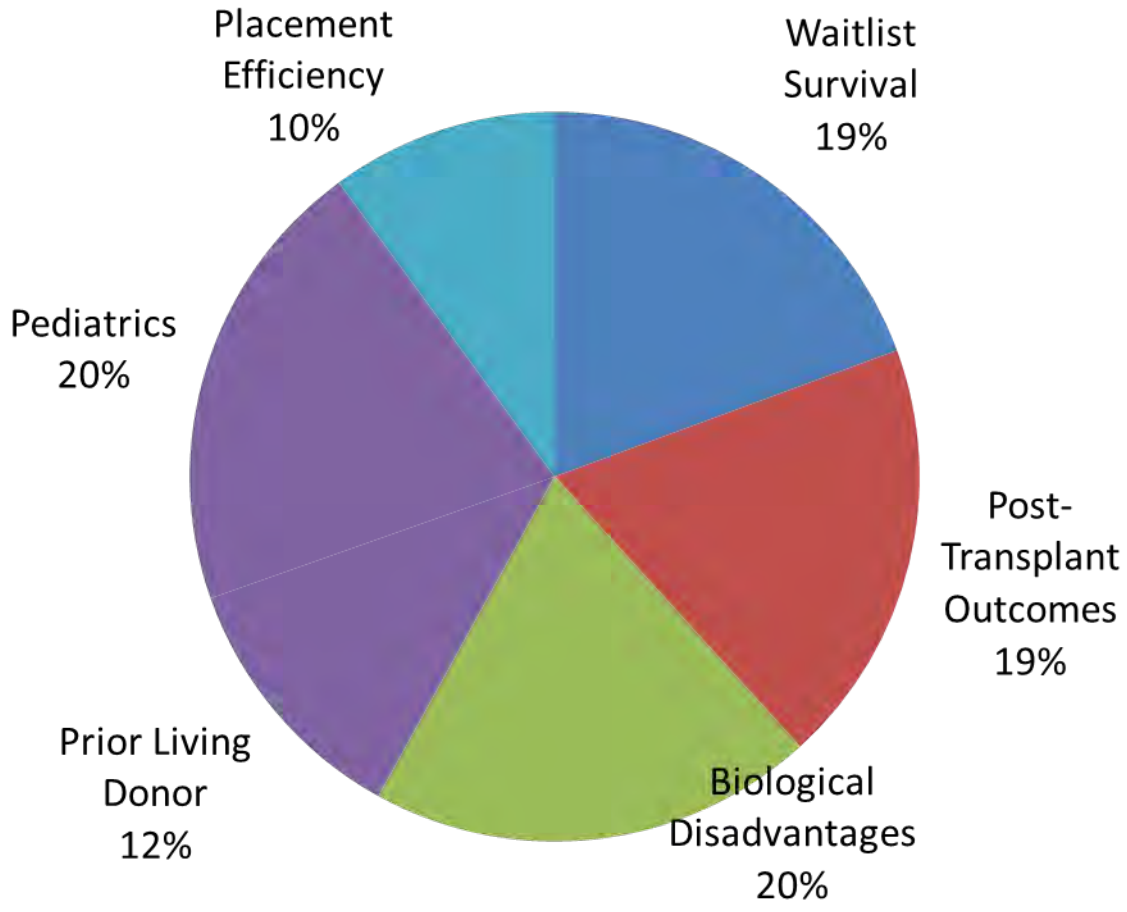

https://public.tableau.com/profile/optn.committees#!/vizhome/ContinuousDistributionofLungs/Home

# Rationale

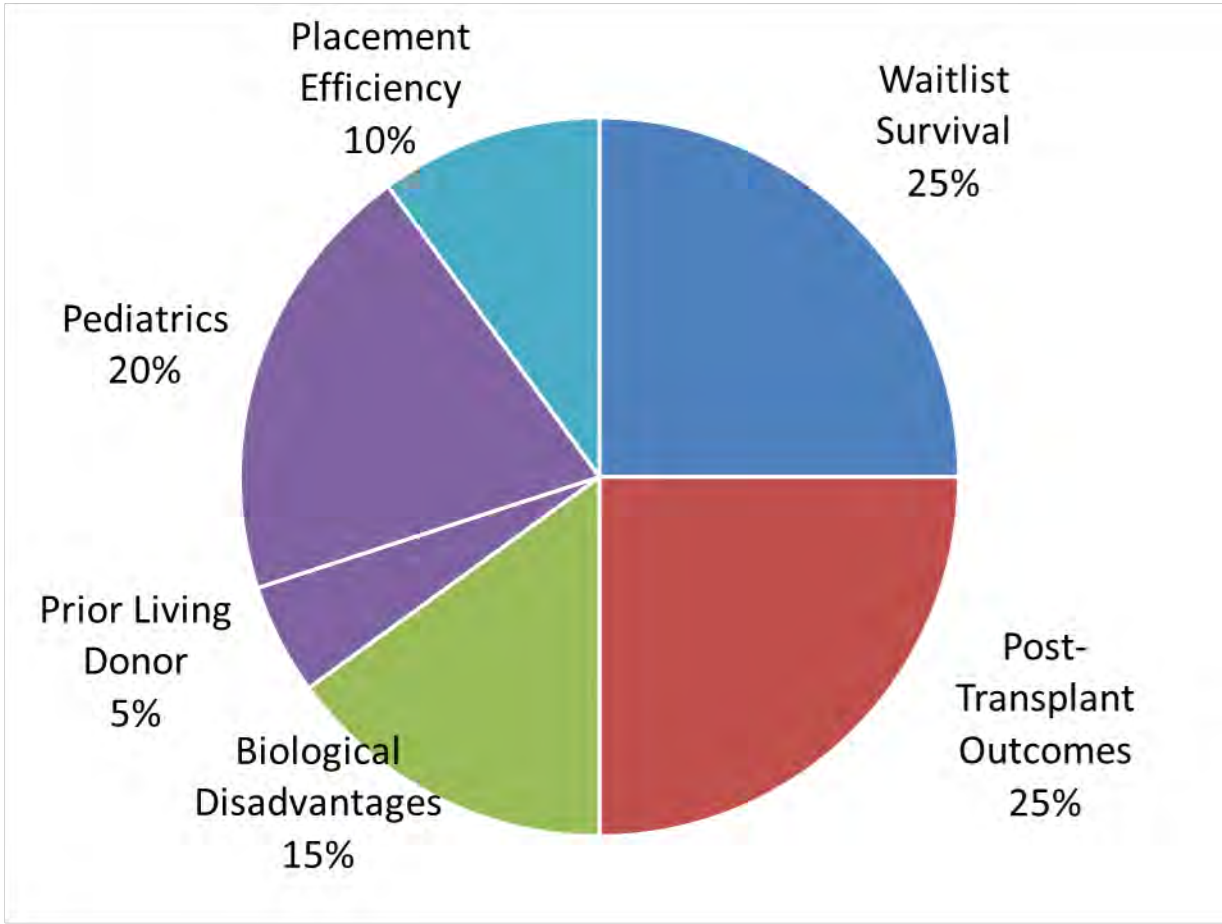
- Incorporates community feedback on priorities
- More patients surviving a year on the waiting list + patients surviving at least 2 years post-transplant
- Less variation in transplant rates between regions
- Higher pediatric candidate transplant rate
- Less variation in access based on blood type and height

# Rationale

## Prioritization exercise results




## Proposed weights



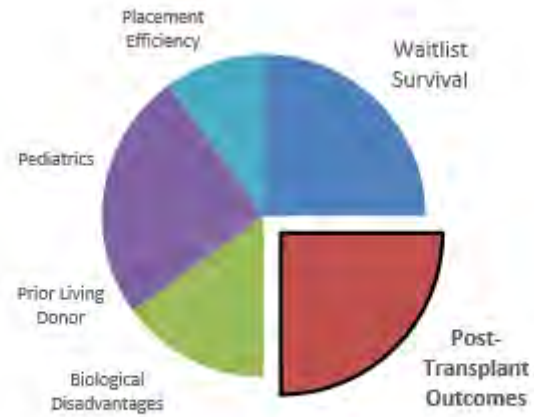
# Rationale

## Key Metrics

| | Current | Proposed |
|---|---|---|
| 1 Year Waitlist Mortality Count | 435 | 260 |
| Percent Died by 2 Years Post-transplant | 23.38 | 23.44 |
| Percent Expected to Fly (>75NM) | 81.32 | 79.02 |
| Median Donor- Recipient Distance (NM) | 195 | 353 |

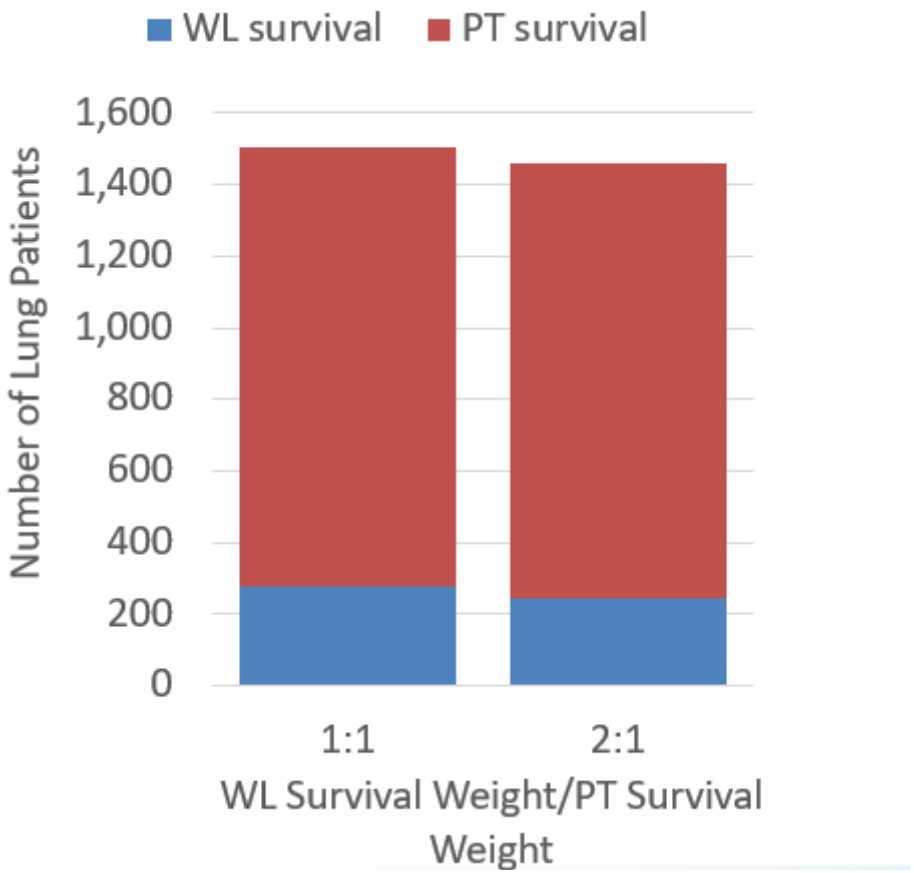
# Rationale

- Extended from 1-year to 5-year post-transplant outcomes measure
- Received comments in previous public comment cycles in support of including longer-term outcomes
- SRTR analysis showed similar level of reliability to 1-year post-transplant measure



# Rationale

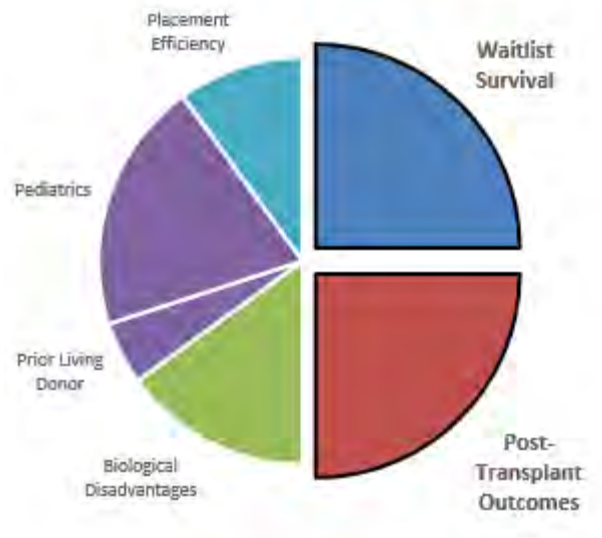
Combined 1-Year Waiting List Survival and 2-Year Post-Transplant Survival Weight Comparisons




**Goal: Highest number of patients surviving a year on the waiting list + patients surviving at least 2 years post-transplant**

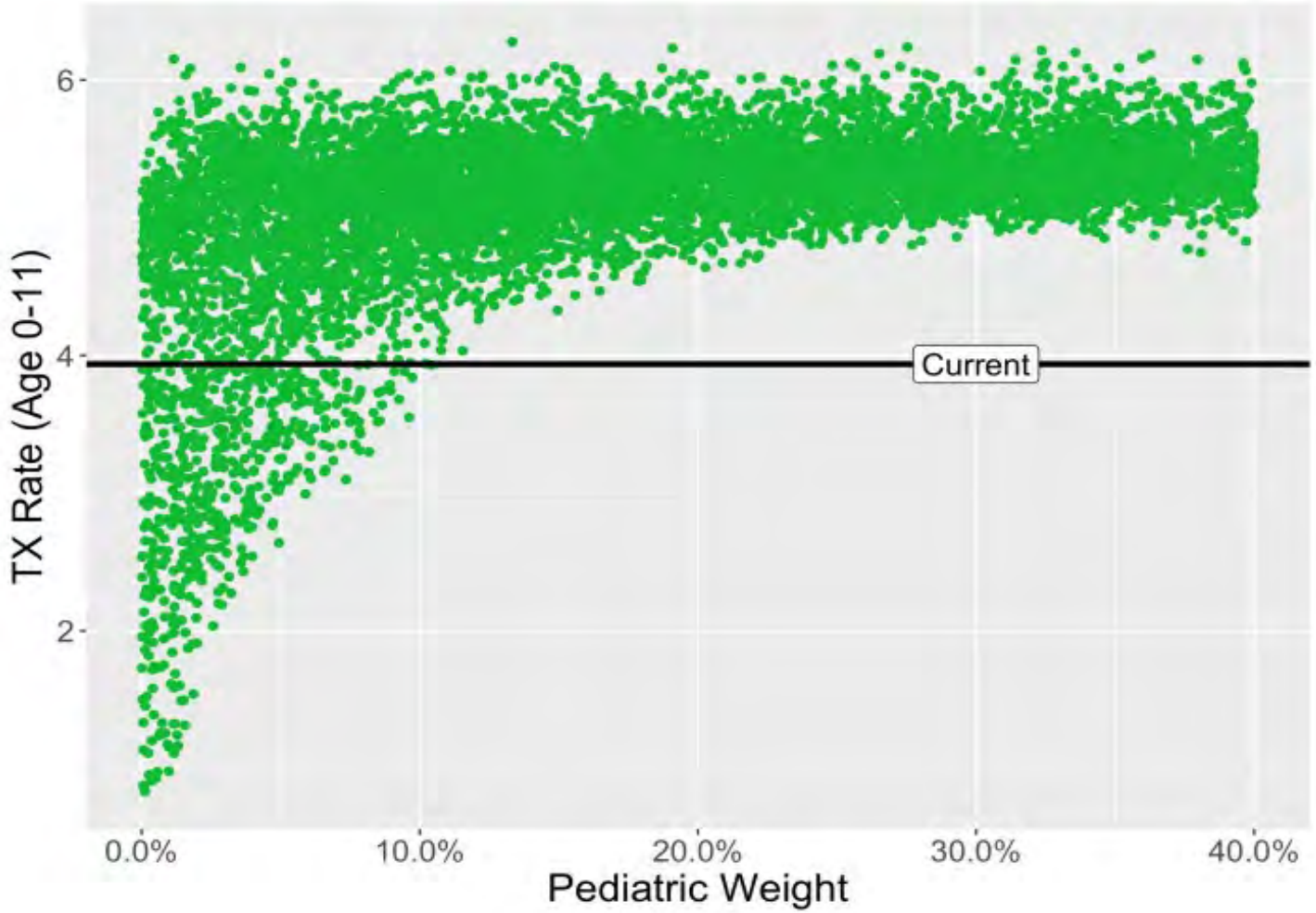
# Rationale

- All candidates will receive a composite allocation score (CAS), regardless of age
- Candidates under 12 will receive a set number of points for waiting list survival and post-transplant outcomes based on average for all Priority 1 or Priority 2 candidates

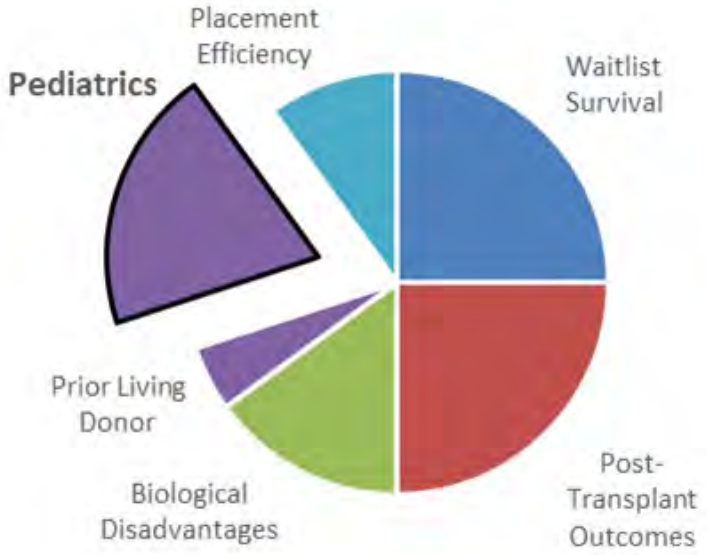


# Rationale

Pediatric candidate transplant rates

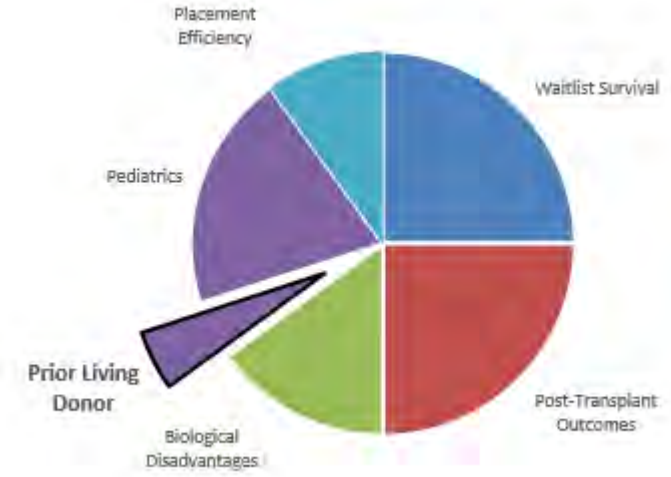



- **Goal: Optimize pediatric priority**
- Proposal predicts higher pediatric candidate transplant rate than current system
- Stabilizes at ~20% weight

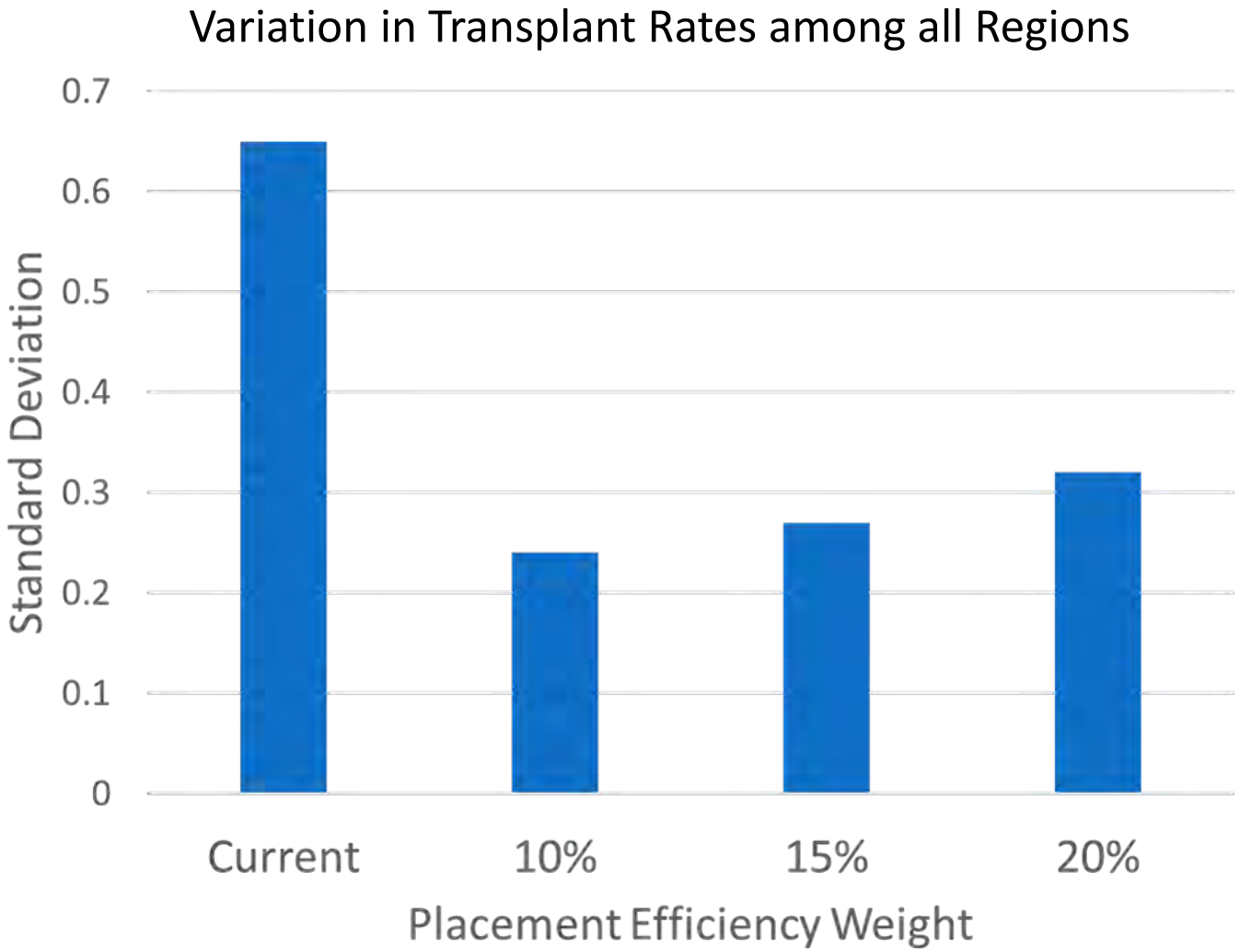


# Prior Living Donors

- Provides points for prior living donors
- Applies to candidates who donated any organ
- Community feedback indicated support for inclusion

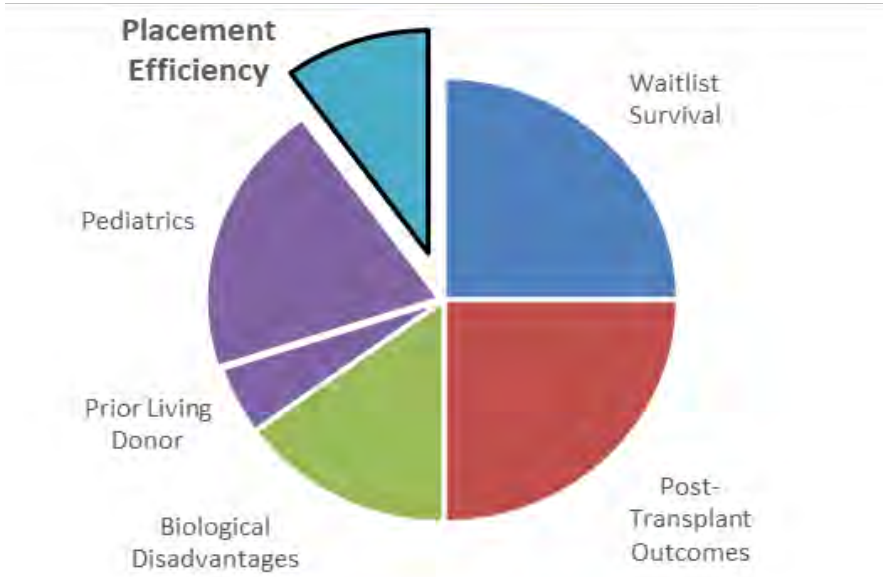


# Rationale



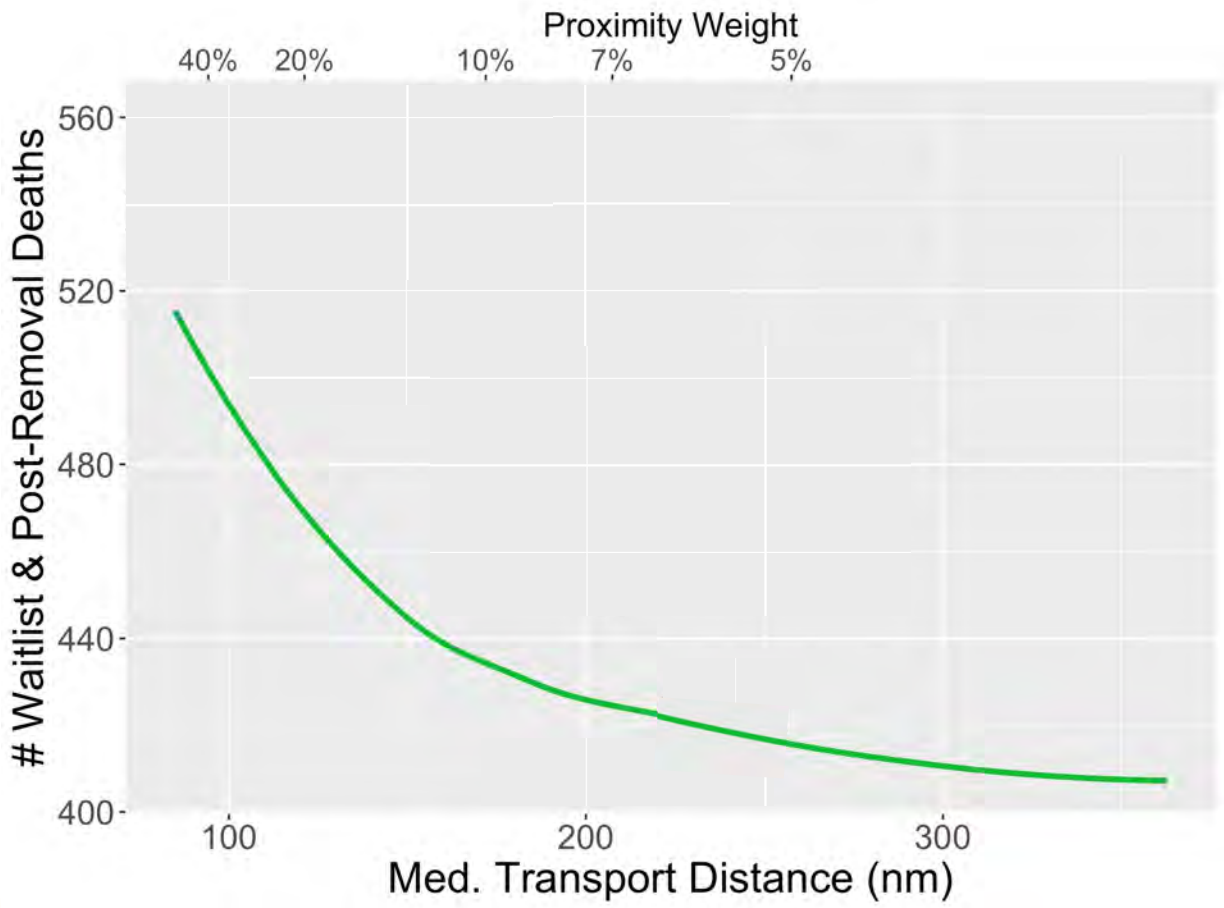

**Goal: Reduce variation among regions**

Efficiency weight of 10% total resulted in the least variation in transplant rates



# Placement Efficiency

Impact of changing the placement efficiency weight on waitlist and post-transplant deaths




- Lowering the placement efficiency weight also lowers the number of patient deaths
- The impact of changes is greater with a placement efficiency weight of more than 10%

# Rationale

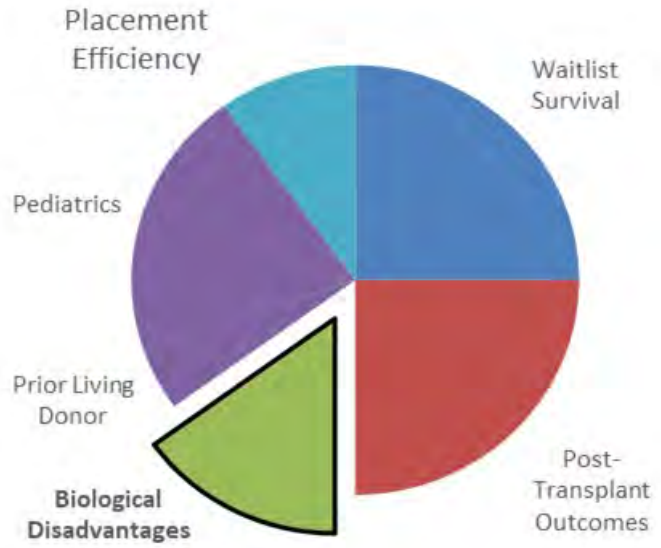
Waitlist Deaths by Blood Type

| Blood Type | Current | Proposed |
|---|---|---|
| A | 125 | 99 |
| B | 47 | 26 |
| AB | 26 | 17 |
| O | 237 | 119 |

Waitlist Deaths by Height

| Height Group | Current | Proposed |
|---|---|---|
| <158cm | 141 | 75 |
| 156-165cm | 83 | 51 |
| 165-170.1cm | 84 | 58 |
| 170.2-177.7cm | 59 | 37 |
| 177.8cm+ | 69 | 40 |

- **Goal: Reduce waitlist mortality for candidates who are hardest to match**
- Lower waitlist mortality for candidates of all heights, especially the smallest
- Lower waitlist mortality for candidates of all blood types, especially O



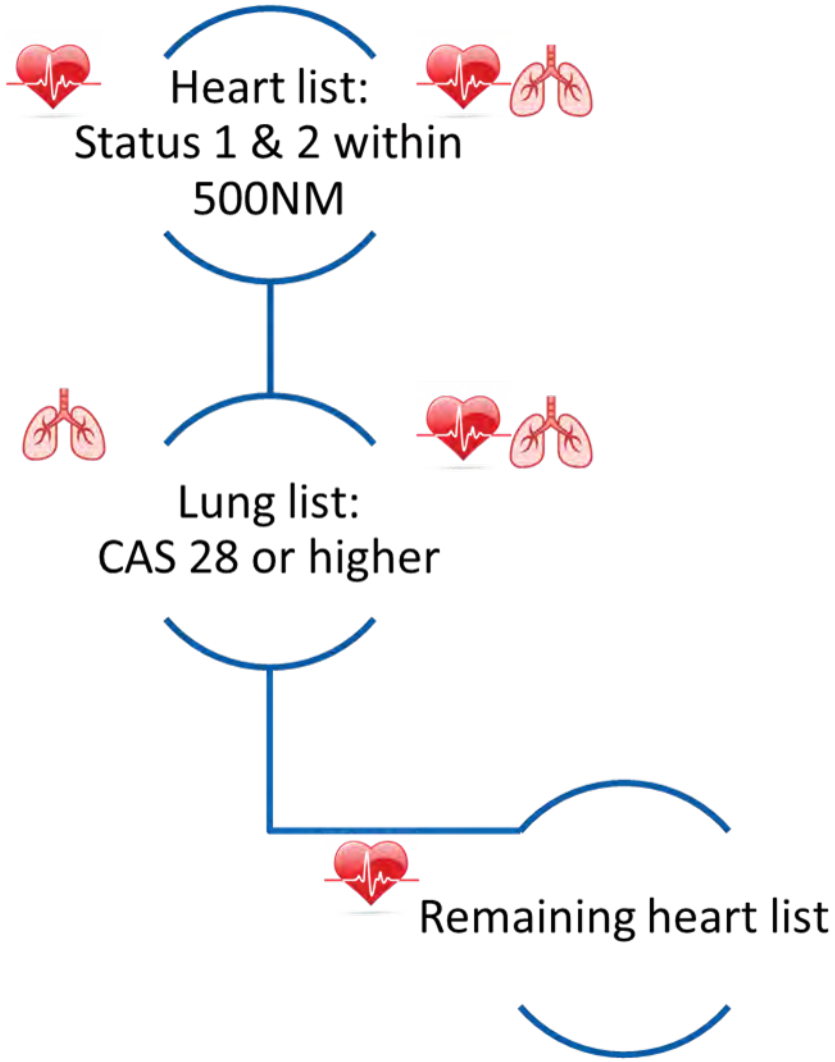
# Lung Exceptions

# Proposal: Exceptions

- Point-based exceptions for waiting list survival, post-transplant outcomes, candidate biology, patient access, or efficiency
- Prospective reviews
- Shortened review timeline to 5 days (from 7 days)
- Allow candidates to keep exceptions indefinitely without extension once granted

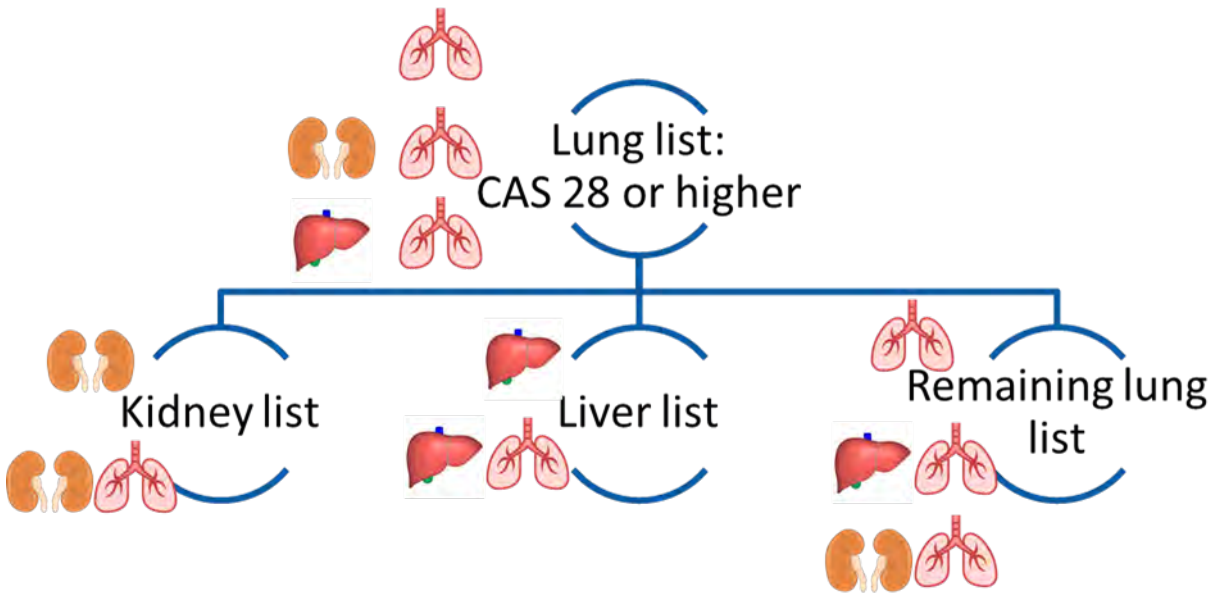
# Heart-Lung, Lung-Liver & Lung-Kidney Allocation

# Proposal: Heart-Lung




- Similar to current heart-lung policy, but requires offering from lung list instead of giving an option
- Clearer direction to OPOs

# Proposal: Lung-Kidney and Lung-Liver




- Require OPOs to offer to candidates with a CAS of 28 or higher on the lung list first, then allow offers off kidney and liver lists
- Similar approach to the recently approved policy from the OPO Committee

# What do you think?

- **Are the weights on each attribute ideal?**
  - Should waitlist survival and post-transplant outcomes be equally weighted or should waitlist survival receive twice as much weight as post-transplant outcomes?
  - Is 10% the correct weight for efficiency (5% each for travel efficiency and proximity efficiency?)

# What do you think?

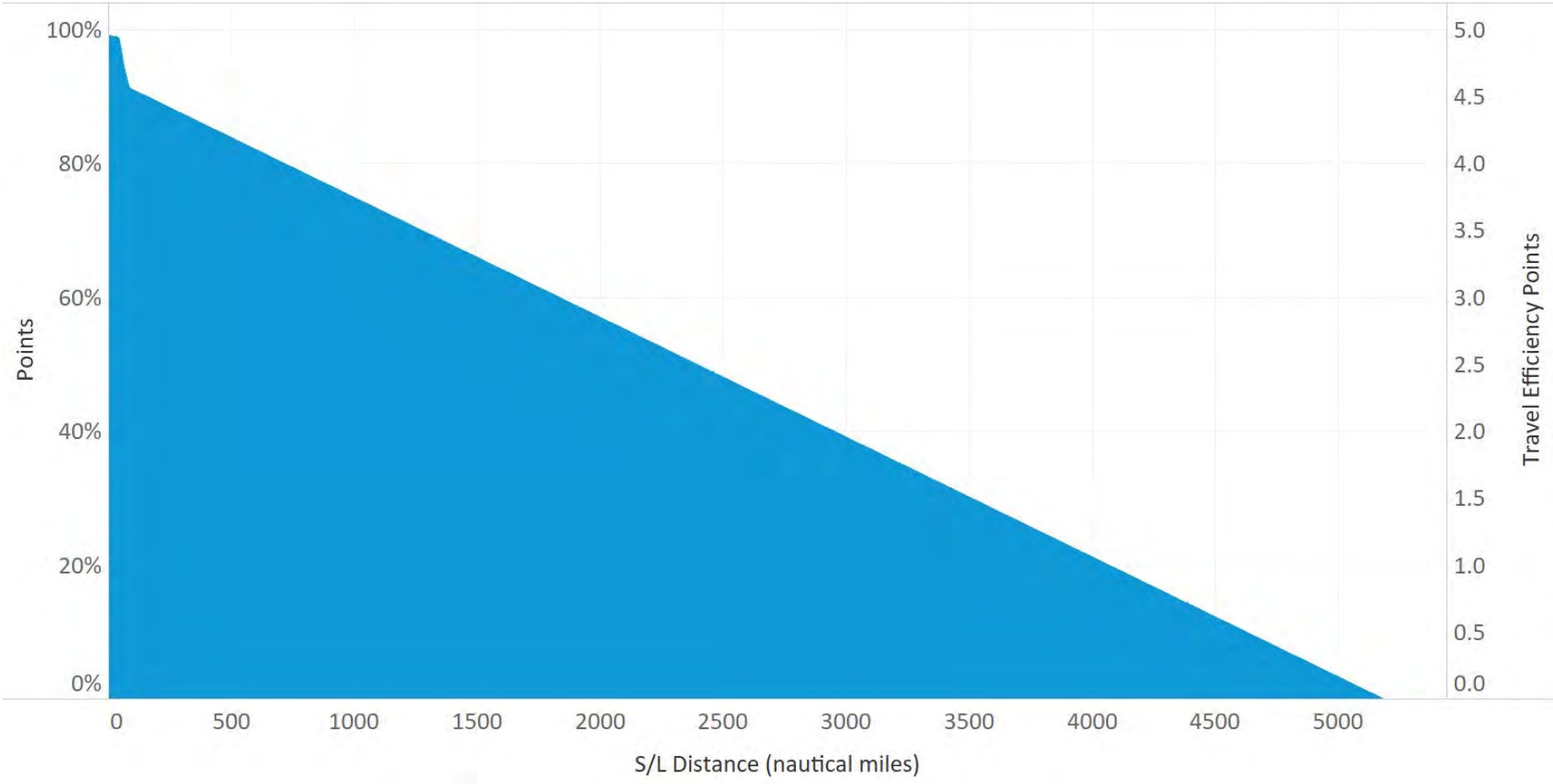
- **Are the changes to exceptions appropriate?**
  - Is 5 days sufficient time to allow reviewers to vote on exception applications?
  - Is there a need to allow centers to list a candidate at an exception score while awaiting a decision on appeal after an initial denial?

# What do you think?

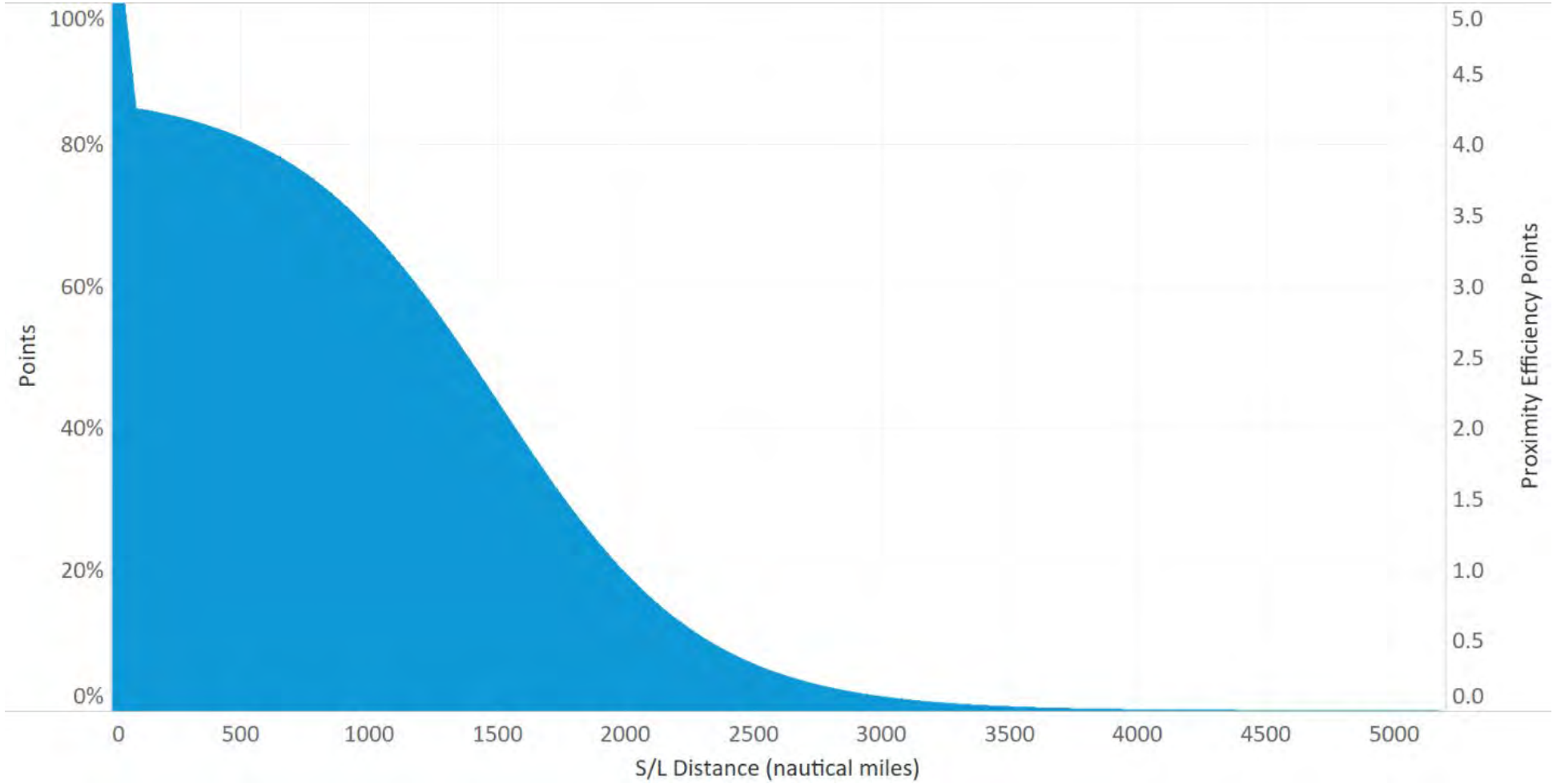
- **Are the changes to multi-organ allocation appropriate?**
  - Is a composite allocation score of 28 the right cut-off?
  - Should OPOs have more discretion to offer from heart list before offering to lung candidates with a composite allocation score of at least 28?

# EXTRA SLIDES

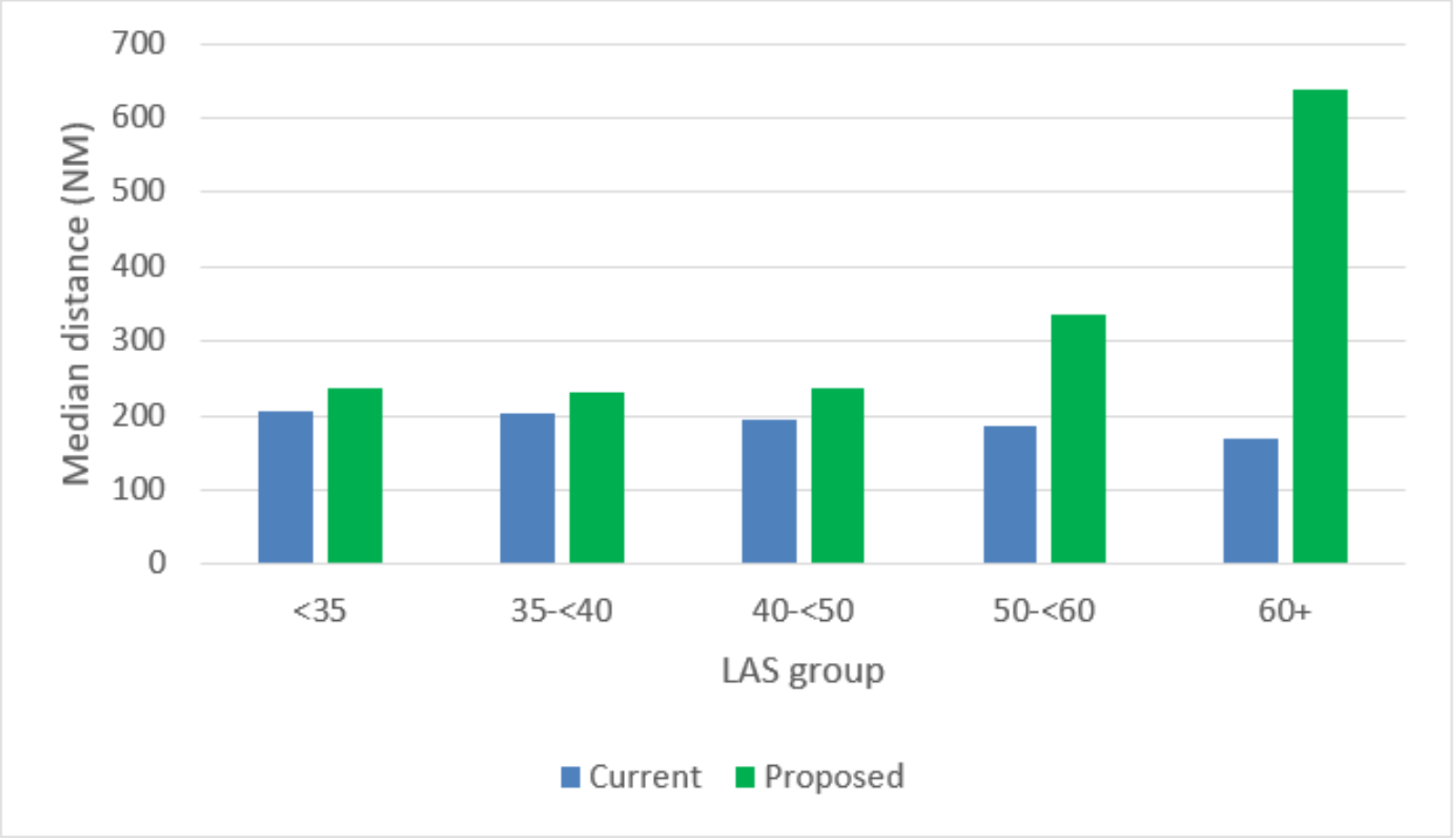
# Travel Efficiency Rating Scale



# Placement Efficiency Rating Scale



# Median Distance from Donor Hospital to Recipient Hospital by LAS



# Transplant Rates by Age Group for 1-Year and 5-Year Post-Transplant Outcomes