

Expedited/Batch Allocation for Liver Transplantation

David P. Foley, MD
Professor of Surgery

University of Wisconsin School of Medicine and
Public Health



CUTTING EDGE of **TRANSPLANTATION**

TRANSPLANT SUMMIT 2019

*NO SIZE FITS ALL: Uncovering the
Potential of Personalized Transplantation*

Disclosures

- No disclosures

Learning Objectives

1. To examine the currently practiced expedited liver allocation process
2. To present recent data on the number of donor livers turned down in the OR in multiple OPOs
3. To identify ideal liver transplant recipients for expedited liver offers

Expedited Placement of Livers

- No current policy to address late turn downs
 - In OR with donor prior to cross clamp
 - After cross clamp = initiation of CIT
 - Donor not suitable based on team assessment
 - Recipient too sick and unable to use liver
- OPO able to “expedite” to maximize placement and avoid discard
 - Identify another center quickly for acceptance to decrease CIT
 - Center has high likelihood to accept late offer
 - May go out of sequence on match run

Expedited Placement of Livers

- Advantages of current system
 - Allow OPOs to identify an accepting center based on past behavior
 - OPO autonomy to assure liver is transplanted and avoid discard
 - Efficient way to get expedited organs transplanted
- Disadvantages
 - Lack of transparency and inequity
 - Bypasses patients with higher disease severity
 - Lack of consistent practice across country
 - Centers on “speed dial” to accept organs
 - Organs leave local centers who may accept and go further distance

Offer Patterns of Nationally Placed Livers

- 1625 nationally placed livers (2005-2010)
- 588 livers (36%) were accepted on the first national offer
- 4 DSAs accounted for 47% of first-national offers
- 44% of these were accepted by a single center
- Lower MELD scores than that of locally placed livers (20 vs. 24)

Lai et al. Liver Transplantation, 2013

OPO Analysis of Liver Declines

- Survey of 58 OPOs
- Two year period (2016 – 2018)
- Every region represented except Region 1 (N.E.)
- Region 5 largest contributor to study
- “real-time” PDF submission took 45-60 min
- Response rate: 38/58: 65%

Neidlinger, N. DonorNetwork West, 2018 (personal comm)

OPO Analysis of Liver Declines in OR

- 880 livers declined in OR
- 619 livers (70%) recovered with intent to transplant
- Initial turn down + recovered: 52% chance of TXP
- 46% declined liver after cross clamp
- Of those transplanted:
 - 50% to predetermined back up and 50% “expedited”

Neidlinger, N. DonorNetwork West, 2018 (personal comm)

OPO Analysis of Liver Declines in OR

- Predetermined back-up: Median time to place: 17 min
- Expedited placement: Median time to place: 70 min
- 122/144 liver programs have declined in OR (84%)
- 74/144 liver programs have accepted a late declined liver (51%)
- If Center A declines: 89% chance it gets used
- If Center B declines: 10% chance it gets used

Neidlinger, N. CMO. DonorNetwork West, 2018 (personal comm)

Gift of Life: Philadelphia

- January 1, 2017- December 31, 2018
- 952 liver donors
- TXP to Intended Recipient: 63% (600 livers)
- OR Turn Down: 37% (352 livers)
- TXP after turn down: 44% (155 livers)
- No TXP after turn down: 56% (198 livers)

Richard Hasz, GLDP Data

Current State

- High number of OR turn downs
- Unclear if turn downs due to bad organ quality vs. delays in allocation and long CIT
- Unclear if system more efficient = fewer discards and more transplants

Expedited Liver Placement Policy Proposal

- Trigger: Donor has entered OR and liver turned down
- Allow for quick identification of txp candidates
- Opt-in policy for TXP centers
- TXP center enter candidate-level acceptance donor criteria
 - Age
 - BMI
 - Distance from donor hospital
 - Height, weight
 - Percent macrosteatosis
 - DCD vs. DBD

Expedited Liver Placement Policy Proposal

- Recipient Criteria
 - MELD
 - Previous surgery
 - Distance from recipient hospital
- Offers sent out to multiple patients on expedited list
- Time limit: 20 minutes
- Liver matched to patient with highest MELD score
- Ongoing evaluation for center acceptance rates

Ideal Recipients for Expedited Livers

- **Low DRI Livers** (high quality and low risk)
 - CIT less of an impact
 - Consider higher MELD patients
 - Patient in house, no previous surgery
 - Estimate CIT based on
 - Getting organ to hospital
 - Recipient distance from hospital
 - Hepatectomy time
 - Avoid re transplantation

Ideal Recipients for Expedited Livers

- **High DRI Livers** (lower quality and high risk)
 - Older, DCD, Steatotic
 - **CIT definite factor** (Aim for < 6 hours)
- Recipient Selection
 - No previous surgery
 - Lower MELD (< 25)
 - No need for arterial or venous jump grafts
 - Lives close to hospital
 - Avoid previous cardiac disease

Summary

- New expedited placement policy for donor livers needed
- System with low discard rates with transparency and equity across transplant centers
- **Opt-in** policy for transplant centers
 - Identify centers willing and with infrastructure to accept EP livers
- Stay local first to decrease CIT with higher risk livers
- Close monitoring of center behavior needed
- Donor-recipient matching critical for optimal outcomes