

Allocation Policies

Liver Allocation Practices in Different States Across India

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In the recent years, liver transplantation has gained momentum in many states of India. Across the country, 4,491 liver transplants were carried out in 2023, of which 840 (18.7%) involved deceased donors. The National Organ Tissue Transplant Organization (NOTTO) has set guidelines for patient listing and liver allocation. Even though these guidelines have been adopted, there are some variations and state-specific protocols which are seen.

NOTTO guidelines for allocation of deceased donor liver
(www.notto.mohfw.gov.in)

Recipient Registration and Listing

- Patient is to be registered by the concerned hospital
- Patient should be registered only in one hospital
- Liver Advisory Committee will approve the registration and urgency criteria
- Standard listing
 - a. Patients with a MELD (Model for End-stage Liver Disease) score greater than 15
 - b. Patients with cirrhosis of liver with hepato-cellular carcinoma should be with-in UCSF criteria
- Super-urgent listing
 - a. Primary Non-Function (PNF) of liver allograft
 - b. Living liver donor who develops life threatening liver failure
 - c. Early Hepatic Artery Thrombosis (HAT) requiring re-transplant
 - d. Fulminant Hepatic Failure (FHF) meeting the King's College Hospital criteria
- Contraindications to listing for liver transplantation
 - a. MELD Score < 15
 - b. Severe cardiac or pulmonary disease, who is unfit for general anaesthesia
 - c. AIDS
 - d. Hepatocellular carcinoma beyond UCSF criteria
 - e. Uncontrolled sepsis
 - f. Intrahepatic Cholangiocarcinoma
 - g. Extra-hepatic malignancy transplant
- Status of the listed patient must be updated monthly.
For Super-urgent patients, status update is required daily.

Allocation Principles

- Sequence of allocation of organs shall be in following order: State list-Regional List-National List
- Livers from pediatric donors (< 16 years) are prioritized for pediatric recipients; if none, then adults.
- O blood group liver is given first to O recipients, then to others
- Other than O blood group (A, B and AB), liver will be preferably allocated to the same group, otherwise to AB

Allocation Algorithm

Check Blood Group & age of donor

Allocation will be done based on the medical urgency

- Super-urgent list
- Simultaneous multi-organ transplant based on waiting time list
- Single organ (liver) transplant

Types of donor hospitals

- Donation from a Transplant Hospital - Liver will be allocated to local transplant hospital
- Donation from a NTORC - Liver will go to the common pool and allocated as per the rota

Liver retrieved from a government hospital

- Government hospitals other than Army Hospital R&R, by rota
- Army Hospital R&R, Delhi
- Private hospitals as per the rota

Liver retrieved from a private hospital

- Rota of private hospitals
- Government hospitals other than Army Hospital R&R as per rota
- Army Hospital R&R, Delhi

Karnataka - Jeevasarthakathe (SOTTO)

- The State is divided into five zones - Bangalore, Mysore, Mangalore, Hubballi, and Kalaburagi.
- Liver allocation is prioritized based on the zone, medical urgency (MELD score), blood group compatibility.
- Institutions within each zone follow a clear hierarchy for allocation: super-urgent recipients, in-house patients, and rotation-based allocation (rota) for other centers.
- Priority is given to supra-urgent cases with compatible blood groups.

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Mumbai - ZTCC (Zonal Transplant Co-ordination Centre)

- There is no difference in distribution between government and private hospitals. The organs are distributed chronologically according to the registration date.

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Tamil Nadu - TRANSTAN

- A web based allocation system is followed to safeguard from fraudulent registrations.
- Supra-urgent list - Patient is considered only if the registration and approval is done 6 hours prior to a donor alert. Approval is done by the state liver advisory committee
- In-house liver - Recipient is chosen from the list based on blood group compatibility, clinical suitability, MELD score, and waiting time.
- If no suitable recipient is found at that hospital, liver will be allocated as per the zonal rota system; then to the state rota.
- The State is divided into three zones, and the hospitals from the same zones are given priority. If three consecutive hospitals decline a liver offer, it is opened to all other zones.
- Hospitals have 45 minutes to accept the organ offer.

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Gujarat - SOTTO

- Comprehensive Data Integration: The SOTTO portal is designed for seamless coordination between hospitals, allowing real-time updates and efficient communication.

MELD Score Update Periods for all types of patients:

- Minimum MELD score of 8 is required for listing.
- MELD \leq 10: Update every 12 months (reports not older than 30 days)
- MELD 11-18: Update every 3 months (reports not older than 14 days)
- MELD 19-24: Update every 1 month (reports not older than 7 days)
- MELD \geq 25: Update every 7 days (reports not older than 48 hours)
- For pediatric patients, the Pediatric End-Stage Liver Disease (PELD) score is used.

Donor in a licensed transplant hospital

- Priority is given to a recipient registered from that hospital.
- Priority is given to multi-organ listing patients first, followed by single-organ (liver) patients based on MELD scores.

Donor in a government non-transplant organ retrieval center

- First, third, and fifth organ donor's livers go to government hospital pool recipients.
- Second and fourth organ donor's livers go to private hospital pool recipients.

Donor in a private non-transplant organ retrieval center

- First, third, and fifth organ donor's livers go to private hospital pool recipients.
- Second and fourth organ donor's livers go to government hospital pool recipients.

Exceptions in Allocation

In cases where a deceased donor's near relative requires an organ, priority is granted, only once, within a ten-year period.

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Kerala - Mrithasanjeevani (K-SOTTO)

- K-SOTTO regulates the liver allocation process and follows the guidelines developed through the consensus of stakeholders in the liver transplant process.
- Given the logistics of transporting liver across the state and in the interest of keeping cold ischemia time low, the state has been divided into three zones (North, Central, and South).
- Liver-specific subcommittee oversees the organ allocation process.

Types of listing:

1. Elective liver transplantation
2. Super urgent liver transplantation

Elective liver transplantation:

- The recipients must be registered (with K-SOTTO) for at least 24 hours before being considered for a potential offer.
- When the institution is offered a liver, the transplant unit can decide on the recipient from the list based on blood group compatibility, clinical suitability, MELD and waiting time.
- If there are no suitable recipients in that hospital, the offer will be passed to the next hospital as per the zonal rota system and then to the state rota.
- Allocation from NTORC for elective transplants will also follow the rota system.

Super urgent liver transplantation:

- Details of the acute liver failure patients must be submitted to the liver expert committee via K-SOTTO in the prescribed format.
- Allocation will be open to them only after getting approval from the liver expert committee.

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