

**JEEVANDAN**  
Scheme for Cadaver Organ Transplantation  
Government of Andhra Pradesh

(Established under G.O.Rt.No 1462, HM&FW Department, dated 11.11.2009  
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Sub-Committee for Heart, Lung and Heart-Lung transplantation

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**OPERATING PRINCIPLES FOR HEART, LUNG AND HEART-LUNG  
TRANSPLANTATIONS**

**Subcommittee**

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These are guidelines for the present. As the transplant programme picks up, further modifications will be done as per the need by the sub-committee.

*A.REGISTRATION OF POTENTIAL RECIPIENTS FOR HEART, LUNG AND HEART-LUNG TRANSPLANTATION:*

1. All hospitals should do all necessary investigations needed for their potential patients waiting for heart, lung and heart lung transplantations and then register them with Jeevandan portal.
2. Only those patients for whom all the necessary data is provided and registration charges are paid will be considered in the active waiting list.
3. The registrations for transplantation will have to be updated and re-registered every month.
4. At any time one patient can register only with one transplantation center. In case he/she wants to shift to some other center, they need to deregister with first center and then only register with second center. There should be at least 72 hours of gap before the next deceased donor's organ retrieval.
5. Registration of Heart and Heart-Lung recipients:  
3 categories are proposed:
  - Priority 1(emergency): These are patients on ventricular assist devices, Intra aortic balloon pump (IABP) waiting for heart/heart lung transplantation. These recipients will get priority based on blood group and size matching. Their status need to be confirmed on weekly basis.
  - Priority 2(semi emergency): These are patients in intensive care unit depending on inotropic supports for at least a week and not maintaining hemodynamics if inotropes are being weaned off. Their category needs to be updated every 48 hours. Based on their progress they may stay in priority 2 or change to other priorities. If a deceased donor organ is available, their status need to be confirmed by 3 members of the heart subcommittee as appointed by the chairman of the subcommittee.
  - Priority 3(elective): These are patients electively waiting for transplantation. Their status need to be confirmed or changed as per their progress on monthly basis.

The concerned hospital need to be given a username and password to enable them to register the recipients and enter data. They can see only their waiting patients. The subcommittee members to be given a separate username and password and they should be able to see all the waiting list members for heart, lung and heart lung transplantation and their details.

*B.CRITERIA FOR SUITABLE DONORS FOR HEART AND LUNGS:*

Apart from the general criteria of donors, the following criteria are needed:

1. Heart:

- a) Age less than 55 years. If donor is more than 40 years, coronary angiogram is needed to exclude asymptomatic coronary artery disease.
- b) No history of heart disease and echo cardiogram showing good cardiac function and no anatomical abnormalities.
- c) Maintaining good haemodynamics and not on high doses of inotropes ( epinephrine, nor epinephrine less than 0.1 micrograms/kg/mn, dobutamine less than 10 micrograms/kg/mn, vasopressin less than 0.1 unit per kg/mn)

2. Lung:

- a) Age less than 55 years
- b) No active sepsis in the lungs and outside
- c) No history of significant chronic obstructive pulmonary disease
- d) Chest X ray shows clear lung fields without any evidence of trauma to lungs
- e) Arterial Blood gases: On 100% oxygen and PEEP of 5 mm of Hg. after 5 mn, PaO<sub>2</sub> should be more than 300 mm of HG
- f) If smoker, a smoking history of  $\leq 20$  pack-years

C. CRITERIA FOR ALLOCATION OF HEART, LUNG AND HEART-LUNG:

Matching of heart and Lungs are done based on blood group matching and size matching. O group donor organ is matched with O first. If no O group recipient is available, then it can be given to other group recipients as per the following criteria. Once a deceased donor heart and lungs are available, the hospital/s with first two recipients in the order of allocation will be informed. If the first recipient is not confirmed in 2 hours after that, the organ will go to the next recipient in the list and so on.

In case donor's family wants an organ to be given to 1<sup>st</sup> degree relations who need it, it may be considered.

If any controversies arise in allocation, the decision of the subcommittee is final.

1. Heart and Heart-Lung:

- a. If deceased donor organs are harvested in an Organ Transplantation center, heart and one lung will go to that center and the other lung will go to the general pool. If the hospital does not have recipients, then the heart and both lungs will go to the general pool.
- b. If deceased donor organs are harvested in a center recognized only for organ harvesting, heart and both lungs will go to the general pool.
- c. If deceased donor is present in a center not recognized for harvesting, then the donor need to be shifted to a center where the heart will go as per the criteria for sharing.

General pool organs will be distributed first to patients in the priority1, then to priority2 and then to priority 3. If multiple patients are there in each category, then heart will be distributed in the chronological order of patient's registration with Jeevandan portal. If donor is CMV positive, and there is a recipient who is CMV positive, they will be matched provided there is no waiting patient in priority 1 and 2.

## 2. Lung:

- a. If deceased donor organs are harvested in an Organ Transplantation center, one lung will go to that center and the other lung will go to the general pool. If the hospital does not have recipients, then the heart and both lungs will go to the general pool.
- b. If deceased donor organs are harvested in a center recognized only for organ harvesting, both lungs will go to the general pool.

D. DETAILS TO BE RECORDED ON THE WEB SITE:

The Following details should be available on the web site regarding the patients waiting for heart, lung and heart-lung transplantation:

First name:		Last name:
Age:	Sex:	Height:
Weight:	Diagnosis:	
Hospital where registered:		Date registered:
Diabetic: Y/N		
Blood Group:		Rh typing:
CMV Ig G: positive/negative		
PRA I: percentage	Positive/negative	
PRA II: percentage	positive/negative	
HbsAg: positive/negative	Hep C: positive/negative	
HIV: positive/negative		
For heart recipients:		
PVR:	Transpulmonary gradient:	
For Lung recipients:		
Room air ABG report		
6 min walk test results:		
PLAN: Heart/single lung/bilateral lung/heart-lung transplantation.		
Priority: 1/2/3		

E. POST-OPERATIVE UPDATE:

It is the responsibility of the hospital to update about the recipient condition on a monthly basis in the first 6 months, then once in 2 months for the next 2 months and then every 6 months and whenever patient is readmitted.

F. DONOR HARVESTING CHARGES AND CHARGES TO RECIPIENTS:

At this stage, it is felt that the average expenses in a corporate hospital to maintain a brain dead patient and do the harvesting of organs is estimated to be 3 lakhs of rupees. This has to be compensated to the hospital where a deceased donor is identified and organs are harvested. In case deceased donor is identified at a non harvesting center and shifted to some other hospital for harvesting organs, then this has to be split as rupees one lakh for the initial center and rupees 2 lakhs to the center where organs are harvested.

The total expenditure has to be divided equally among the all the organs harvested and transplanted.

These recommendations are for all private and government hospitals and patients.

G. RECOMMENDATIONS FOR AAROgyASRI AND UDYOGASRI PATIENTS:

-In case heart, lung and heart-lung transplantations are being considered under the above schemes, the following estimates( INR in lakhs) are recommended:

	Heart	Lung	Heart-lung
Udyogasri	15	20	25
Aarogyasri	10	15	20

-In addition to this, schemes need to provide funds to provide immunosuppressants for at least one year. Costing is around INR 20000 per month

- In case patient needs endomyocardial biopsy or transbronchial biopsy, it will cost INR20, 000 for each time-to be reimbursed by the respective schemes.

I. RECOGNITION OF HOSPITALS FOR ORGAN TRANSPLANTATION:

It is noted that some hospitals have applied for transplantation permission at multiple branches. It is recommended that only those hospitals/branches which have in-house full time transplantation team are to be permitted to enable round the clock care.

