

## Organ Donation - Process in India - A Case Study

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Organ donation is the process of allowing, giving without any financial interest an organs or tissue to be removed surgically from one person and to be used for transplantation to another desired person (suffering), patient, for study, research purposes. Organ donation the only option and till now the most effective option of saving lives of the patients, and the people suffering from the organ failure or also to improve the life of the patient whose organs are not working properly and providing them a better life. Organ donation can be done by taking the consent of the donor when he is alive that can be for a particular organ, tissue, eye or his complete body after his death. After he dies then the consent of his family is taken. The demand and the improvement of technology has also helped the organ donation and transplantation a better option. More and more transplantation of the Organs is also polishing, improving and encouraging society to opt for the organ donation day by day. Lung, Kidney, heart, liver, bones, bone marrow, skin, pancreas, cornea, intestines and skin are usually used for transplantation to give new life to the recipient. Organ are now shifted by making green corridors so that the donated organ can be transplanted at the prescribed time.

**KEYWORD:-** Organ Donation, Transplantation, Donor,

### **Introduction**

Organ donation is mostly done after the death of the organ donor. However, some organs and tissues such as kidney, part of lungs, part of liver, part of intestine or part of the pancreas can be donated by the donor while alive. In other terms the main meaning of the organ donation is the organ donated by a person with his self- concern (after his/ her death), that organ may be implanted to a desired person / patient and save the life. Some has said this in a better and social for “organ donation - smile for the family”.

But as per the survey reports of WHO's, demand for organs (for transplantation) is much higher than the number of donors donating their organs around the world. Every year many patients die, in the wait of the organ they required as the donors are not available. Statistics also show that the annual demand (average) for kidney only in our country India is 2 lakh (approx.) but only 6 thousand (approx.) kidneys are obtained and among them max number of the donors are from the family itself. Similarly, the average annual demand for hearts is 50 thousand whereas only 15 (approx.) are

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### **Organ Donation – Process in India – A Case Study**

*Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria*

available by the organ donors (as the heart donation/ transplantation can be done after death). These figure shows that still there is lack of organ donation awareness in the world, and by this study we want to teach, encourage public and spread the awareness of organ donation, so that more and more life can be saved.

To increase the number of donors, there is a need to create sensitivity among the public for organ donation. In this direction, the government has also taken some steps like spreading awareness through TV and internet, although we still have a long way to go to bridge the gap between demand and supply.

#### **Organ Donation / Transplantation and it's types -**

1. *Autograft*: is a surgery process in which the tissues or skin from one part of the body or area is removed and used on another part of the body of the same patient or person. This transplantation is done on the same patient or person and no foreign tissue of another person is used. For example, removal of skin from the legs and using it for damaged skin face or other exposed part.
2. *Allograft*: is a surgery process in which, the donor material comes from a member of the same species, but the donor is not genetically identical to the recipient. As a result, the recipient's body rejects the donor material, as the body considers it as the foreign material. For this reason, recipients have to take medications to suppress their immune systems, and donor material is carefully screened to make sure it mixes as closely as possible to the recipient. In simpler words "Transplant of an organ between two genetically non identical individuals, it is called *allograft*". Due to the genetic difference, the donor's organ will be treated as foreign by the recipient and will try to destroy it. This is called as *rejection*.
3. *Isograft*: is a surgery process in which transplantation can be done in same identical recipients or more precise is genetically identical or twins. The case of transplantation rejection is zero in these types of cases.
4. *Xenograft*: Transplantation of organ/tissues forms one species to another species. Means some of the organs or tissues of the animal or another species is used in human body, but this practise is ban in many countries. For example, the heart valve of pig is transplanted successfully to human.
5. *Split transplant*: is a surgery process in which the organ from a deceased donor is retrieved and the organ can be divided among two recipients. For Example, *liver* from the deceased donor can be transplanted two recipients and adult and a child.
6. *Domino transplant*: In this procedure, a patient donates his organ to another and in return a part of that patient is transplanted to the previous donor. This is done in case both require separate organ transplants. It is also important for the organ to be transplanted to be healthy and with the consent of both the patients. When the lungs are to be transplanted, surgically it is easier to replace them along with the heart. If the recipient's original heart is healthy, it can be transplanted into another recipient in the need of one.

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### **Organ Donation – Process in India – A Case Study**

*Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria*

7. *ABO incompatible transplantation*: The immune system of young children aged below 12 months might have developed fully. They can receive organs from incompatible donors.

### What Organs And Tissues Can Be Donated?



#### Donor definitions & type (Organ donation)

1. *Live donors*: A living person, mentally and physically healthy can donate one of a paired organ, part of an organ or a tissue. The organs donated are kidneys, part of liver, one of the lung, part of small intestine, skin, bone marrow, one of the testis and one of the ovaries. Live donor can either be related or unrelated.
2. *Unrelated donors*: For altruistic reasons, a person can donate one of his organs to an unrelated donor. According to TOHO act, the unrelated donor should be known to the recipient and have some obligation to him. It has to be established that there is no monetary transaction between them. But in many other countries, even a stranger can donate one of his organs to a needy person on altruistic grounds.
3. *Deceased donors*: Organs are harvested from brain dead person whose respiration and circulation are maintained artificially. Brain dead has to be certified by a team of doctors nominated by Government in every organ retrieval centers.
4. *Paired exchange*: When a living donor is not compatible with the related recipient, but may be compatible for another recipient. That second recipient related donor is compatible to the first recipient, then permission can be granted for transplantation. The surgery for all four donors and recipient are conducted simultaneously and anonymity is kept until after the transplant.
5. *Spousal donation*: A spouse can donate an organ to the partner. It has to be recorded that the couple is legally married.

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### Organ Donation – Process in India – A Case Study

Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria

**living donor transplant -- LIVER**

During a living donor transplant, the donor will have an operation to remove the left or right lobe of the liver. A transplant of the right side (of the liver) is usually recommended for adults. For children, a transplant of the left side (of the liver) is recommended. This is because the right side is larger and more suitable for adults, while the left is smaller and better suited for children. After the donor operation, your liver will be removed and the donor's liver part will be transplanted there. Your blood vessels and bile ducts will then be attached to the liver part. After the transplant, the transplanted part (lobe) will soon regenerate itself. In most cases of living donor transplant, the new part will grow to 85% the size of the original liver within a week.

**Difference between normal death and brain death**

There is a difference between *normal death* and *brain death*.

**Normal death** -- all the organs of a person stop working, his heart stops beating, the flow of blood in the body stops. In such a situation, except the eyes, all its parts soon become useless. There are no blood vessels in the eyes, so they do not matter in the early hours. This is the reason why only eyes can be donated in case of normal death at home.

**Brain death** is the death in which the human brain is injured due to any reason. There are three main reasons for this injury: head injury (often in the case of an accident), brain tumour, and stroke (paralysis, etc.). The brain of such patients becomes dead but some other organs are working fine - for example, the heart may be beating. Some people confuse coma and brain death, but there is a difference between them. There are chances of a person coming back from coma, that's why coma does not come under death. But in brain death the possibility of life ends completely. In complete brain death man does not return or revoke.

**length of time for organ preservation**

- Heart: 4-6 hours
- Lungs: 4-8 hours
- Intestine: 6-10 hours
- Liver: 12-15 hours
- Pancreas: 12-24 hours
- Kidney: 24-48 hours

**Organ donation consent process**

There are two types of consent taken while donating organs namely explicit consent and presumptive consent.

1. *Explicit consent*: Under this, the donor provides a direct consent through registration depending on the country and completes other necessary formalities.
2. *Presumptive consent*: This does not include direct consent from an organ donor or family members. As the name suggests it is assumed that if donation is allowed then donation will be allowed by the potential donor.

**Organ Donation – Process in India – A Case Study**

Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria

The other terms used for the consent is *opt in* and *opt out* these terms are generally used in the government forms; these options vary from country to country.

OPT IN	OPT OUT
The form has the option to tick – the organ donor option, means after ticking you are selecting your self as the organ donor	The form has a pre-opted option – means you are organ donor and if you don't want to be organ donor then you have to tick the form

*opt in* is the option to be ticked by the desired organ donor in a particular form and *opt out* this term also depends

About twenty-five percent of potential donor families refuse to donate the organs of their loved ones.

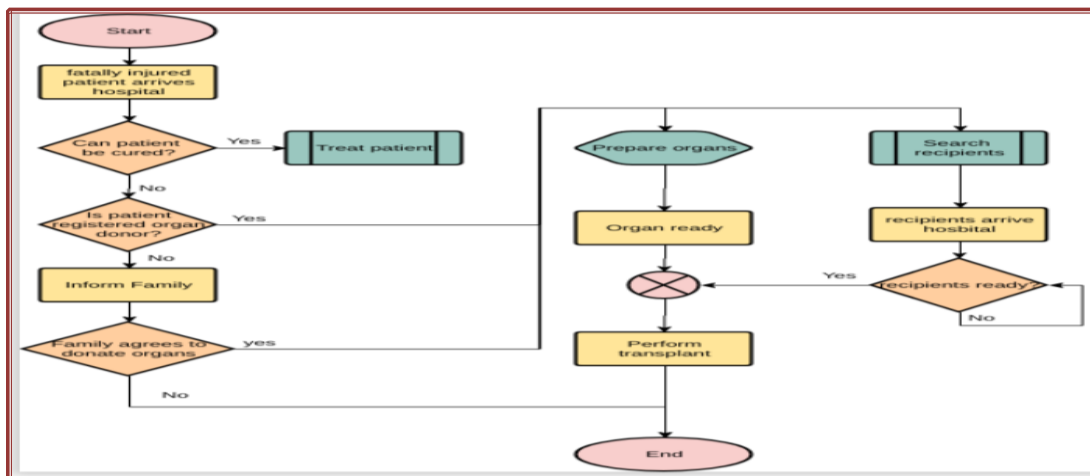


Figure 1 -- Flow chart showing the process involved in organ donation to its transplantation

### Organ donation in India

1. *legal by law* -- Donation of organs is legal as per law in Indian. For organ donation in India and transplantation, Government of India has formed an ACT known as The Human Organs Act (THOA) 1994 which allows transplantation, organ donation and legalizing the concept of brain death.
2. *Documentation and formalities* - The organ donor go give his / her concern regarding the organ donation requires to fill a form (that can be taken from the nearby authorised hospital, NGO's, or online from the Ministry of Health and Family Welfare Government of India website). The form must be signed by the donor and a concern guardian. The steps and the different forms are detailed below in this case study.

### Organ Donation – Process in India – A Case Study

Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria

The main reasons for organ shortage in India are mainly ignorance and lack of knowledge. People are not well informed enough about the benefits of organ donation. Today social media and so many other forums can promote the positives of organ donation and how it will save so many lives if more people register themselves for organ donation. The reason for organ shortage is myth and superstition. Many people do not want to donate their organs even after death because of so many myths and superstition they are instilled with. People with existing medical condition or old people, who wish to donate, do not donate thinking they are not fit or eligible. Almost everyone can donate some part or the other unless you have any extreme medical condition.



Chief minister Ashok Gehlot (centre), Rajiv Arora (Left), Bhawna Jagwani (Right) at the launch of the organ donor memorial in Jaipur on Friday

### Organ donation Law, Act, Rules in India

The Law related with the Organ donation and transplantation Act was first made in 1994 'Transplantation of Human Organ Act'. The acts main object was to form a regulation of removal, transplantation of human organ preventing its commercial aspect. The Act was amended on the request of some states of India. The amended ACT was passed in parliament in 2011 and rules were notified in 2014.

### Efforts by the government in this regard, Human Organ Transplantation Act (THOA), 1994

- The main objective of this Act is to regulate the removal, storage and transplantation of human organs for medical purposes. It also prohibits the commercial use of human organs.
- In this act, organ transplantation of a non-relative was declared illegal.
- However, despite this act, neither the trade of organs has stopped nor has there been an increase in the number of deceased donors to meet the shortage of organs.

### Human Organ Transplantation (Amendment) Act, 2011

- Provisions were made in this act to simplify the process for human organ donation. At the same time, the scope of the Act was widened to include tissues.
- It may be noted that only the organs were included in the 1994 Act.
- These provisions include registration of organs for retrieval of organs from retrieval centers and deceased donors, swap donations and mandatory testing by a registered medical practitioner of the hospital.
- The Act also provides for registration of donors and recipients at the national level.

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## Organ Donation – Process in India – A Case Study

*Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria*

### Human Organ and Tissue Transplantation Rules (THOT), 2014

- As per THOT rule, a doctor who is a member of the operation team performing the organ transplant will not be a member of the authorization committee.
- If the recipient of organ donation is a foreign national and the donor is an Indian, then the transplant will not be allowed without close kinship and the decision in this regard will be taken by the authority committee.
- When the proposed organ donor and the organ recipient are not close relatives, the Authority Committee will assess that there is no commercial transaction between the organ donor and the organ recipient.
- All authorized transplant centers are required to have their own website.

#### The main provisions of the Act (including the amendments and rules of 2014) are as follows:

- A. Brain death identified as a form of death Process and criteria for brain death certification defined (Form in)
- B. Allows transplantation of human organs and tissues from living donors and cadavers (after cardiac or brain death)
- C. Regulatory and advisory bodies for monitoring transplantation activity and their constitution defined.

**(i) Appropriate Authority CAA):** inspects and grants registration to hospitals for transplantation enforces required standards for hospitals, conducts regular inspections to examine the quality of transplantations\_ It may conduct investigations into complaints regarding breach of provisions of the Act, and has the powers of a civil court to summon any person. request documents and issue search warrants.

**(ii) Advisory Committee:** consisting of experts in the domain who shall advise the appropriate authority.

**(iii) Authorization Committee (AC):** regulates living donor transplantation by reviewing each case to ensure that the living donor is not exploited far monetary considerations and to prevent commercial dealings in transplamation. Proceedings to be video recorded and decisions notified within 24 hours. Appeals against heir decision may be made to the state or central government.

**(iv) Medical board (Brain Death Committee):** Panel of doctors responsible for brain death certification. In case of non-availability of neurologist or neurosurgeon, any surgeon, physician, anaesthetist or intensivist, nominated by medical administrator in-charge of the hospital may certify brain death.

D. Living donors are classified as either a nor relative or a non-related donor.

(i) A near-relative (spouse, children, grandchildren, siblings, parents and grandparents) weds permission of the doctor in-charge of the transplant centre to donate his organ.

(ii) A non-related donor needs permission of an Authorization Committee established by the state to

### Organ Donation – Process in India – A Case Study

*Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria*

donate his organs.

**E.** Swap Transplantation: When a near relative living donor is medically incompatible with the recipient. the pair is permitted to do a swap transplant with another related unmatched donor/recipient pair.

**F.** Authorization for organ donation after brain death

- (i) May be given before death by the person himself/herself or
- (ii) By the person in legal possession of the body. A doctor shall ask the patient or relative of every person admitted to the CU whether any prior authorization had been made. If not, the patient or his near relative should be made aware of the option to authorize such donation.
- (iii) Authorization process for organ or tissue donation from unclaimed bodies outlined.

**G.** Organ retrieval permitted from any hospital with ICU facility once registered with the appropriate authority. Any hospital having Intensive Care Unit CCU facilities along with manpower infrastructure and equipment as required to diagnose and maintain the brain-stem dead person and to retrieve and transport organs and tissues including the facility for their temporary storage. can register as a retrieval centre.

**H.** Cost of donor management, retrieval, transportation and preservation to be borne by the recipient, institution, government, NGO or society, and not by the donor family.

**I.** Procedure for organ donation in medico-legal cases defined to avoid jeopardizing determination of the causes of death and delay in retrieval of organs.

**J.** Manpower and Facilities required for registration of a hospital as a transplant centre outlined.

**L.** Qualifications of transplant surgeons, cornea and tissue retrieval technicians defined.

**M.** Appointment of transplant coordinators (with defined qualifications) made mandatory in all transplant centres.

**N.** Non-governmental organizations, registered societies and trusts working in the field of organ or tissue removal, storage or transplantation will require registration.

**O.** The central government to establish a National Human Organs and Tissues Removal and Storage Network i.e, NOTTO (National Organ & Tissue Transplant Organisation), ROTTO (Regional Organ & Tissue Transplant Organisation) and SOTTO (State Organ & Tissue Transplant Organisation), Website [www.notto.nic.in](http://www.notto.nic.in). Manner of establishing National or Regional or State Human Organs and Tissues Removal and Storage Networks and their functions clearly stated,

**P.** The central government shall maintain a registry of the donors and recipients of human organs and tissues.

**Q.** Penalties for removal of organ without authority, making or receiving payment for supplying human organs or contravening any other provisions of the Act have been made very stringent in order to serve as a deterrent for such activities.

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### Organ Donation – Process in India – A Case Study

*Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria*



**The various forms outlined In the rules are as follows:**

- Form 1: Near-relative consent
- Form 2: Spouse consent
- Form 3: Other than near-relative donor consent
- Form 4: Psychiatrist evaluation of the donor
- Form 5: FILA DNA profiling report
- Form 7: Self consent for deceased donation
- Form 8: Consent for organ donation from family (also applicable for minors)
- Form 9: Consent for organ donation from unclaimed bodies
- Form 10: Brain death declaration form
- Form 11: Joint transplant application by donor / recipient
- Form 12: Registration of hospital for organ transplantation
- Form 13: Registration of hospital for organ retrieval
- Form 16: Grant of registration
- Form 17: Renewal of registration
- Form 18: Decision by hospital authorization committee
- Form 19: Decision by district authorization committee
- Form 20: Verification of Domicile for non near-relative
- Form 21: Letter from Embassy

**Terms used in this study –****1. Cadaver - A cadaver is a dead body, especially a dead human body.**

Word *cadaver* is sometimes used interchangeably with the word [corpse](#), but *cadaver* is especially used in a scientific context to refer to a body that is the subject of scientific study or medical use, such as one that will be [dissected](#).

**Suggestion**

This is some important steps that can be followed to motivate more and more humans for the organ donation -

1. In India the religious beliefs influencing the donor must be for the sake of the positivity of the suffering patient.
2. NGO's must provide psychological consultation to the donors and its family members.
3. Government must award a medal/ certificate to the donor and its family to motivate the donors.



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**Organ Donation – Process in India – A Case Study**

*Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria*

4. Organ Donation Day (13<sup>th</sup> Aug of every year) must be celebrated by government, semi-government, NGO's in the country to spread the awareness and to motivate the people to donate the organs. As well as to understand the value of organ in the life of a patient or beneficiary.
5. NGO's, and hospitals must organism awareness programs and camps, to encourage people and the society.
6. Government of India can pursue organ donation by providing Tax rebates to donor family.
7. The government should try to ensure that the facilities of organ transplantation reach even the weaker section of the society. For this, the organ transplant capacity of public hospitals can be increased.
8. Experts believe that access to such facilities can be ensured to the weaker section of the society through subsidy. Under subsidy, a higher price is charged from one group so that the benefit can be passed on to another group.
9. The Human Organ Transplantation Act (THOA), 1994, needs to be amended to address the issue of central government interference in the distribution of donated organs. There is also a need to increase transparency in organ distribution.

Dispelling misconceptions and myths about organ donation can play an important role in addressing the shortage of organ donors in the country. According to a report, if even 5 percent of the people who die due to road accidents in India donate organs, then there will be no need to donate organs to living people.

### Conclusion

The Indian Government is making efforts for spreading awareness, about organ transplantation and organ donation programs. Also, many NGO's are coming forward and helping in spreading the awareness in the society and encouraging more and more organ donors. However, more effective steps are been needed to increase the number of organ donors, so that more of desired required patients can be treated.

The increasing requirement of the organ in the world and in the society we must emphasis on the organ donation, their correspondence patent and the fast and quick facility so that the donated organ can travel to the desired patient's location within the time. We must do more and more educational and encouraging programs to motivate people for self-declaring themselves as the organ donation and can convince their family that their family must fulfil his/ her declaration after their death.

Organ donation is the biggest donation because with its help a person donates life to many lives. So, decide if you want to donate an organ. There can be two ways for this. Organ donation related work is done by many NGOs / in hospitals. By consulting to any of these, you can fill a form and give your concern of organ donation of your organs after death.

Whatever part you want, only that part will be taken. You can donate all or any of your organs. You will get a donor card from the organization, but this card has no legal value. After this inform your

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### Organ Donation – Process in India – A Case Study

*Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria*

family, that you have donated your organs (particular organ) and they have to full your wish after your death. Even if you don't fill out the form, it doesn't matter. Just keep telling your wish to the people closest to you. In case of death, the responsibility of donating the organs will be on your relatives as they have to make the call. Organ donation will be done even if you have not filled the form. Organ donation is not possible if the relatives do not want even after filling your form. So this most important, to keep your family informed about your organ donation wish, the organs you want to donate. For donation of organs other than eyes, there is no need to call the family members anywhere because the donation of the rest of the organs will happen only when the patient has had brain death in the hospital and the doctors will immediately take him on life saving devices. There is no cost to the family while donating the organs.

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### Organ Donation – Process in India – A Case Study

*Rajiv Arora & Er. Alok Gupta & Nitin Sharda Bhageria*