Organ Donation In India

Dr Avnish Seth
Director, Fortis Organ Retrieval & Transplant (FORT)
Director, Gastroenterology & Hepatobiliary Sciences, FMRI, Gurgaon
Member, Apex Technical Committee, NOTTO
Military Operation

The army's first nation-wide organ retrieval drive gives soldiers and civilians a new lease of life

By Sandeep Unnithan

In January, Brigadier Y.P. Bakshi was shot dead by unknown assailants in Meerut. Poignantly, his death has given new hope to five strangers. After the consent of his family, the war veteran’s liver was transplanted into a

Hospital authorities estimate that nearly 30 per cent of all neurological cases result in brain deaths—this is when the heart beats for 48 hours, but it allows the removal of organs.

"Organs are a national resource and should not be wasted," says Colonel A.K. Seth, director, sorn, underlining the criticality of the

(From: India Today)
## Organ Transplants in India

<table>
<thead>
<tr>
<th>Organs</th>
<th>Requirement</th>
<th>Transplants in 2015</th>
<th>From Deceased Donors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidneys</td>
<td>2,20,000</td>
<td>15,000</td>
<td>1007</td>
</tr>
<tr>
<td>Liver</td>
<td>100,000</td>
<td>2000</td>
<td>510</td>
</tr>
<tr>
<td>Heart</td>
<td>50,000</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>Lungs</td>
<td>20,000</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>Pancreas</td>
<td>10,000</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Intestine</td>
<td>5,000</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,05,000</strong></td>
<td><strong>17,153</strong></td>
<td><strong>1670</strong></td>
</tr>
</tbody>
</table>

Source: Indian J Urology 2016; NOTTO
Sources of Organs

Living donors

Non-living donors

Grown from Stem Cells
Concept of Brain Death
## Brain Death Vs Death

<table>
<thead>
<tr>
<th></th>
<th>Brain Death</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversibility</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Breathing</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Heart beating</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

Window for Organ Retrieval: few hours to few days

Brain Death is Death
Liver

Heart

Lungs

Kidneys

Pancreas

Small bowel

Organ Donation after Brain Death
Corneas

Heart valves

Skin

Bones

Tissue donation: after heart stops
Organizations Involved in Organ Donation

- Bangalore: ZCCK
- Maharashtra: ZTCC
- Chennai: TRANSTAN, MOHAN Foundation
- Kerala: KNOS
- Gujarat: Shatayu
- Maharashtra: ZTCC
- Rajasthan: RNOS
- Kolkata: NOTTO
- Chandigarh: FORT
- Mumbai: ROTTO
- Chandigarh: MF
- Guwahati: ORBO
- AORTA
- Rajasthan: RNOS
- Guwahati: ☺
- Mumbai: ☺
- Kolkata: ☺
- Chandigarh: ☺
- Guwahati: ☺
- Rajasthan: MF ☺
Organ Donation Rate in India

Donors per million population

- 2010: 0.05
- 2011: 0.1
- 2012: 0.15
- 2013: 0.2
- 2014: 0.3
- 2015: 0.5

Donors per million population increased steadily from 2010 to 2015.
Organ Donation per Million Population

- Croatia: 36.5
- Spain: 35.1
- Belgium: 32.8
- France: 24.9
- Portugal: 24
- Norway: 23.5
- Austria: 22.6
- Italy: 22.4
- United Kingdom: 18.3
- Ireland: 17
- Australia: 15.6
- Netherlands: 15.1
- Sweden: 15
- Denmark: 13.4
- Germany: 12.3

India: 0.5 per million

Aim:
2 per million by 2020
### Deceased Organ Donation in India: 2015

Organ Donation Rate (ODR): 0.5 per million population

<table>
<thead>
<tr>
<th>State</th>
<th>No. of Donors</th>
<th>ODR (pmp)</th>
<th>Kidney</th>
<th>Liver</th>
<th>Heart</th>
<th>Lung</th>
<th>Pancreas</th>
<th>Intestine</th>
<th>Hand</th>
<th>Larynx</th>
<th>Total Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tamil Nadu</td>
<td>155</td>
<td>2.1</td>
<td>290</td>
<td>149</td>
<td>51</td>
<td>28</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>519</td>
</tr>
<tr>
<td>Kerala</td>
<td>76</td>
<td>2.3</td>
<td>132</td>
<td>61</td>
<td>14</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>216</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>60</td>
<td>0.5</td>
<td>106</td>
<td>51</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>222</td>
</tr>
<tr>
<td>Telangana &amp; Andhra Pradesh</td>
<td>98</td>
<td>1.2</td>
<td>168</td>
<td>99</td>
<td>19</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>391</td>
</tr>
<tr>
<td>Karnataka</td>
<td>60</td>
<td>1.0</td>
<td>91</td>
<td>55</td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>158</td>
</tr>
<tr>
<td>Gujarat</td>
<td>45</td>
<td>0.7</td>
<td>77</td>
<td>45</td>
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<tr>
<td>Madhya Pradesh</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>9</td>
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<tr>
<td>Uttar Pradesh</td>
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<td>0.01</td>
<td>8</td>
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<td>0</td>
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<td>0</td>
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<td>8</td>
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<tr>
<td>Delhi-NCR</td>
<td>14</td>
<td>0.3</td>
<td>28</td>
<td>14</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>48</td>
</tr>
<tr>
<td>Puducherry</td>
<td>9</td>
<td>7.2</td>
<td>18</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Chandigarh</td>
<td>39</td>
<td>37.0</td>
<td>69</td>
<td>25</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>97</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>7</td>
<td>0.1</td>
<td>14</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>22</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>570</strong></td>
<td><strong>0.5</strong></td>
<td><strong>1007</strong></td>
<td><strong>510</strong></td>
<td><strong>110</strong></td>
<td><strong>37</strong></td>
<td><strong>4</strong></td>
<td><strong>2</strong></td>
<td><strong>4</strong></td>
<td><strong>1</strong></td>
<td><strong>1675</strong></td>
</tr>
</tbody>
</table>

(Shroff S. Indian J of Urology 2016)
Increasing Organ Donation

- Role of Government
- Medical Community
- Public Awareness
Steps in Organ Donation

1. Felt need
2. Systems in place
3. Resolution of issues
4. Declaration of brain death
5. Organ donation
Actions Implemented at National Level

- PM: Importance of organ donation
- NOTTO & ROTTO in place
- Organ pledging facility
- Prospective recipient wait listing
- Technical committees: guidelines on sharing organs
- National Organ Donation Day declared: 27\textsuperscript{th} Nov
### Transplantation of Human Organs and Tissues
#### Rules 2014

<table>
<thead>
<tr>
<th></th>
<th>THOA 1994</th>
<th>THOTR 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian death declaration</td>
<td>In hospitals registered for organ transplantation</td>
<td>All hospitals with ICU</td>
</tr>
<tr>
<td>Neurophysician / Neurosurgeon</td>
<td>Mandatory for declaration of brain death</td>
<td>Not mandatory, if not available</td>
</tr>
<tr>
<td>Counseling for organ donation</td>
<td>Not mandatory</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Transplant coordinators</td>
<td>Optional</td>
<td>Mandatory; qualifications specified</td>
</tr>
<tr>
<td>Medico-legal donations</td>
<td>Complicated</td>
<td>Simplified</td>
</tr>
</tbody>
</table>
24-hour referral service for organ and tissue donation

- FORT Helpline: 8447743868
- FORT Email ID: fort@fortishealthcare.com
## Organ Donation at Fortis Hospitals: Jan 2012 till Date

<table>
<thead>
<tr>
<th>Fortis Hospital</th>
<th>Donors</th>
<th>Heart</th>
<th>Lung</th>
<th>Liver</th>
<th>Kidney</th>
<th>Pancreas</th>
<th>Eyes</th>
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</thead>
<tbody>
<tr>
<td>Mulund, Mumbai</td>
<td>17</td>
<td>3</td>
<td>-</td>
<td>14</td>
<td>30</td>
<td>-</td>
<td>30</td>
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<tr>
<td>Malar, Chennai</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>14</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>Gurgaon</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>5</td>
<td>10</td>
<td>-</td>
<td>36</td>
</tr>
<tr>
<td>Noida</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>6</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Mohali</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Jaipur</td>
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<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Shalimar Bagh, Delhi</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Vasant Kunj, Delhi</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>4</td>
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<tr>
<td>Fortis Escorts, Delhi</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
<td><strong>12</strong></td>
<td><strong>1</strong></td>
<td><strong>31</strong></td>
<td><strong>66</strong></td>
<td><strong>1</strong></td>
<td><strong>106</strong></td>
</tr>
</tbody>
</table>

111 Lives Affected
Organ Donation at Fortis Gurgaon: Till Date

Brain Stem Deaths

27

Excluded  Counseling

5  22

Accepted  Not accepted

7  15

Donation  Could not donate

5  2

Acceptance rate 7/22 (31%)
SMT. UMA CHOPRA

A benevolent, gentle and loving soul. In life she graced us with limitless love. In death she gave many a new lease of life by donating her organs. She lives on...

Please join us in celebrating her life.

Uthala: 4th Jan, 3pm at Community Hall, YojanaVihar, Delhi-92

In remembrance:-
Sukhdev Chopra
Avnish, Manisha, Tanya, Daniel, Somya
Tarun, Seema, Krisha, Ridhaan
Hospitals: Need of the Hour

- Reporting of ALL Brain Deaths
- Declare All .......... Approach All
Organ Donation at Fortis Gurgaon: Till Date

Brain Stem Deaths

- Excluded: 5
- Counseled: 22
  - Accepted: 7
  - Not accepted: 15

Donation: 27
  - Could not donate: 2

Acceptance rate: 7/22 (31%)
5-Day National Transplant Coordinators’ Workshop

April 2014

April 2015

April 2016

Course Content
- Concepts of brain death, organ donation, retrieval & transplantation
- Counselling of family for donation
- Organ sharing
- Media relations

Why register for this workshop?
- The law mandates that all transplant centers should have a transplant coordinator.
- Comprehensive understanding of the subject.
- National registration number & certificate of training from Ministry of Health & Family Welfare, Government of India.

Who should attend?
- Transplant coordinators, ICU nurses, medical social workers, para-medical staff, doctors & people interested in the field of organ donation.

Course fee
- INR 6000/- (includes delegate kit, lunch & tea)
Organ Donation at Fortis Gurgaon: Till Date

Brain Stem Deaths

27

Excluded  Counselled

5  22

Accepted  Not accepted

7  15

Donation  Could not donate

5  2

Acceptance rate 7/22 (31%)
Brain Death
DON'T READ THIS WITH YOUR EYES. PLEASE.

For once, try reading with your heart. Because more than half a million Indians are waiting for organs. But they can't wait for long because the duel is against time. We are just 0.5 donors per million. One of the lowest in the world. Unfortunately, I have taken a bit long to realise it's me. Who can do a lot. Change the reality. It's me who has more to give. That's why today, on the World Organ Donation Day, I have pledged my organs. What about you?

Participate in various organ donation pledging activities across 4 cities on 6th August, 2016 from 11 AM to 5 PM.

Delhi: DLF Place Mall, Saket | Mumbai: Phoenix Marketcity, Kurla | Mohali: Elante Mall, Chandigarh | Chennai: Amap Sky Walk Mall, Aminjikarai
Stay tuned on NDTV 24X7 and NDTV India to catch highlights of the event.
To take a pledge, log on to www.fortishealthcare.com/moretogive
#MoreToGive
Organ Donation at Fortis Gurgaon: Till Date

Brain Stem Deaths

27

- Excluded: 5
- Counseled: 22
  - Accepted: 7
  - Not accepted: 15

Donation

- Could not donate: 2
- Donation: 5

Acceptance rate 7/22 (31%)
Concept of Donor Maintenance

Quality of Organs

Possibile donor

Potential donor

Eligible donor

Actual donor
He continues to live even after his death

Late Brig’s liver, cornea donated to teen, man

By Risha Chittanglia

The Dayalas hail from Azaimgah in UP and Nayak Deen Davai is the only earning member of his family. He has three daughters and a son.

“He suffered liver cirrhosis due to Hepatitis B. His liver had started to give up and was on the top of our ‘patients-waiting-for-organs’ list. His blood group also matched with Brigadier Bakshi. Despite Bakshi’s age his liver was in good shape and that’s why we went ahead with the transplant,” says Col. A.K. Seth, director, Armed Forces Organ Retrieval and Transplantation Authority (AORTA), at the Army hospital.

Similar good luck awaited Mayank. He was given the late brigadier’s “kidney immediately it was retrieved” and successfully so,” says Col. Seth.

The Samaritans

It was a tough decision for Kamini Mehta to donate her father’s organs, that too immediately after news of him being brain dead. Then there are the social taboos that one has to face, but a supportive husband helped.

“When my father-in-law was admitted in the ICU at the R&R Hospital, I chanced upon a poster on organ donation. I knew that chances of his survival were slim, but I didn’t tell Kamini. The following morning we reached the hospital and we were told that he was brain dead,” says Maj. Gen. Mehta.

The silence on the part of Kamini may have put in a seed of doubt in her husband. But then it didn’t stay for long. For, when the councillor at the hospital approached the couple for organ donation, “Kamini was quick to give her consent.”

“Deen Davai promises he will not touch alcohol again,” says Kamini.

risha.chittanglia@... mailtoday.in

Green Corridors for Organ Transportation

Ggn-Del green corridor helps heart travel 32km in 29min, for 16-yr-old

Traffic in Busy South Delhi Brought To Halt

DONOR A 20-YR-OLD TECHIE DECLARED BRAIN-DEAD

Traffic organises vehicle handover, 4 ambulances in cue

Green corridor for heart airlifted from Pune for Mumbai patient

Nikita Natul TNN | Aug 3, 2015, 07.19 PM IST
Increasing Organ Donation

Role of Government

Medical Community

Public Awareness
Organ Donation in India

States with deceased organ donation activity

Made a beginning
Suggested Actions at National Level

- Sustained media / social media campaign by the Govt
- Chapter on organ donation in schools
- Include brain death and organ donation in MBBS curriculum
- Best practices in brain death and organ donation to be included in the accreditation process for hospitals, e.g., for NABH
- Organ pledging option while making driving license
Bangalore will be the first city to pilot a project to allow Driving License applicants to consent to pledging their organs, at the time of license application. An initiative of Gift Your Organ Foundation (GYOF), the pilot will start on July 24th, at Electronic City RTO and will expand to other RTOs across the city and state in due course.

Organ Donor sticker will be pasted on the driver’s license, both in Kannada and English

A green heart sticker will also be pasted as a sign for Organ Donor
For Donor Families

- Funds for last rites as part of ‘Die a Hero’ campaign
- Discounts for air and train travel
- Card for priority boarding in flights for donor families
- Health insurance / hospital discounts
Suggested Actions at State Level

- Adoption of Transplantation of Human Organs Act
- Earmark Key Donation Hospitals (KDH)
  - Track record in promoting organ donation
  - Help in implementing the national agenda
  - Teaching activities related to organ donation
City Level Actions

- Police and postmortem authorities to be sensitized for organ donation in medico-legal donors
- Awareness drives on organ donation: celebrities to be involved; awareness runs.
- Obituaries of organ donors in newspapers: at discounted price
Wall of Tribute: 7 Cities

- NCR
- Mumbai
- Jaipur
- Mohali
- Kolkata
- Bengaluru
- Chennai
Suggested Actions at Hospitals

- Key Donation Person (KDP) and Organ Donation Committee (ODC) in each hospital.
- Brain death committee in place and updated.
- ‘Declare All, Approach All’ approach to be followed for all patients with brain death.
- Donor maintenance protocol to be followed
- Monthly return to the appropriate state authority & SOTTO/ROTTO
What We Can Do.....

- Pledge to donate our organs
- Enquire about Brain Death Committee in our hospital
- Apply for NTORC if no organ transplant program
- Brain Deaths
  - ‘Declare All: Approach All’
- Implement Donor Maintenance Protocol in our hospitals
- Participate in activities aimed at increasing awareness
We Can Do It!!

Castell, Spain

Dahi Handi, Mumbai
Fortis Organ Retrieval & Transplant
Welcomes you to
NATIONAL SUMMIT ON
Best practices in
ORGAN & TISSUE DONATION

Key note address by Dr. Martí Manyalich from Spain, President
International Society for Organ Donation and Procurement
on “World’s Best Practices in Organ and Tissue Donation”

Programme Highlights:
- Issues in End of Life Care & Brain Death
- ECMO & Donor maintenance protocol
- Use of smartphones for counseling
- Challenges in organ transportation
- Organ Care Systems
- Organ sharing policy in India
- Tissue donation and banking
- Hand & Face transplant
- Debate on Donation after Circulatory Death (DCD)
- Experience of emerging centers

Organising Secretary
Dr Avnish Seth
Director, Fortis Organ Retrieval & Transplant,
Fortis Memorial Research Institute,
Sector 44, Gurgaon, Haryana - 122002, India

For free registration contact
fort@fortishealthcare.com  |  +91 8447743868

at
Meditorium, Fortis Memorial Research Institute, Gurgaon
September 3, 2016
9AM - 5PM