



THE RE IVIVAL

Promoting Academics to Improve Clinical Outcomes.

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EDITOR'S NOTE



Dr Manoj Durairaj

Heart Transplant Surgeon, MS, MCh. (AIIMS, New Delhi), FACC.

Director, Marian Cardiac Centre and Research Foundation.

Program Director, Department of Heart and Lung Transplantation, Sahyadri Hospitals, Pune.

Dear Readers,

Greetings from the Editorial team of "The Revival". Dr Dhiren Shah our guest author for this issue has walked us through the Thoracic Organ Transplant program in Gujarat and also highlighted why the number of thoracic organ transplants have risen exponentially.

The enthusiastic personnel involved in the organ donation process including public awareness programmes and motivation of donor families

have played a crucial role in the high number of heart transplants conducted in Gujarat in the past few years. This model should be replicated in those regions of the country where the donation rates are low.

I thank Dr Shah for his article.

Wishing our dear Readers a Happy Reading!

Dr Manoj Durairaj

Editor "The Revival"

SUB EDITOR



Dr Talha Meeran

MBBS, MD, FACC, Consultant Cardiologist, Dept of Advanced Cardiac Sciences and Cardiac Transplant, Sir HN Reliance Foundation Hospital, Mumbai

Dear Colleagues,

This issue of REVIVAL features Dr Dhiren Shah with a vivid description of the eye-opening changing transplant scenario in the state of Gujarat. Gujarat has led from the front in terms of deceased organ donation rates in recent times. Dr Dhiren Shah's team in Ahmedabad has performed amazing work over the last 3 years despite the COVID pandemic. This issue of REVIVAL is an inspiring commentary on the Gujarat state organ donation model and how it can spark similar spurts in organ donation rates in other parts of India.

Sincerely,

Dr Talha Meeran

Sub Editor "The Revival"

Society Reg.No.: EKM/TC/186/2013,

Society secretariat: Address 36/117, 2nd Floor, Lisie Hospital Road, Kottecanal Junction, Kochi 682018. Ph.: 025750048, Email: infoshft@gmail.com, www.sfhft.org

Please call or write to us: Call: 9822322072, 9167048815, manojdurairaj@hotmail.com, talha.meeran@gmail.com

Link for membership, <http://www.sfhft.org/application.html>

Special thanks to Dr Dhiren S Shah for authoring this month's article.

Designed by Maithili Kulkarni

PRESIDENTIAL MESSAGE



Dr Julius Punnen

Sr. Consultant Cardiothoracic Surgeon, Narayana Health, Bangalore

Dear Members and Colleagues,

In this issue of the Revival newsletter. Dr Dhiren S Shah has analyzed in detail the rise of organ transplantation in the state of Gujarat. He has been one of the architects of this successful model and its execution from the start. In any project, organ transplantation in particular, the role of the government is crucial. We see that in Gujarat, the government and even the

political party that forms the government has participated in the promotion of the program. In many states the transplant program has had difficulty in various stages. In some instances, there has been a lot of difficulty in getting a deceased donor program started, particularly in those states where the program was initiated earlier on while the time for the program was not yet right due to lack of general awareness. The inflection point came in around 2010 as mentioned in the article as more and more centers started joining into the program and the momentum gradually built up across the southern states initially and then the West and others also showing a steady rise.

There are also instances where well-established programs have declined to a standstill due to misguided press reports and individuals making it their life mission to destroy cadaver donor program. Even today, the bulk of organ transplantation is from living donors. With the number of road traffic accident deaths in the country, if cadaver donors were utilized optimally there would be no need for any living individual to donate any organ. Times of India in a report on October 13, 2023 said there were 1.68 lakh road accident deaths in India in 2022 that is 462 deaths everyday and 1 every 3 minutes. As we know from the well analyzed kidney and liver living donor program, the procedure is not free of problems for the donor. Bryce A Kiberd and Karthik Tennankore (<http://dx.doi.org/10.1136/bmjopen-2017-016490>) analyzed the lifetime risk of kidney donation and concluded "Live kidney donation may reduce life expectancy by 0.5–1 year in most donors. The development of ESRD in donors may not be the only measure of risk as most of the predicted loss of life predates ESRD. The study identifies the potential importance of following donors and treating risk factors aggressively to prevent ESRD and to improve donor survival." As thoracic organ transplant doctors we may be biased towards cadaver donation but if one is given a choice of accepting a cadaver organ Vs subjecting a loved one through the process of organ donation, the choice is clear.

In Gujarat they have analyzed and correctly identified the problems that prevented them from increasing the donation rate and have successfully addressed each of them. Getting Civil Hospital, Ahmedabad on board was a major step towards this. There are many large governments run hospitals where there are some brain stem dead individuals at any given time, due to resource constraints, many times these patients are sent home in what is commonly known as DAMA or LAMA and not counselled for organ donation. Gujarat has addressed this by appointing grief counselors in such hospitals. I am not sure if the time is here yet to look at opt out or presumed consent to donate organs for us as a nation, but someday when the public starts seeing this program more favorably, it is a possibility. Transportation of organs across longer distances has been a problem in many places and the expense related to hiring private jets for this purpose is not practical in most instances. Some of the busy transplant centers have shown that commercial aircraft can be successfully used for this purpose, however this depends on the deadlines given by the family to hand over the body after the procedure. It is a surely welcome move by the Gujarat government subsidizing the air transportation. Tamil Nadu government has recently decided to give state funeral for organ donors honoring them for the act this will certainly help improving the program.

There is a lot of debate on centralizing vs decentralizing organ allocation in the country. While both can have advantages and disadvantages, decentralization would be the way to go in a time sensitive program. When approvals are required from remotely located agencies particularly at odd hours it becomes difficult to communicate and make proper decisions. This has been more pronounced in the case of allocation to foreign nationals. If the law were to ban allocation to foreign nationals one could stop registering them, in the absence of that we cannot deny them registration. However, it becomes impossible to ascertain that no Indian citizen would need the organ within the given time frame. This is an area which needs to be addressed by the various organizations involved in the allocation process. Hopefully, Gujarat will come up with a solution for this as well.

The Gujarat Model has been a shining example for several programs in the country for other states to learn from organ transplantation is an additional feather in their cap. Dr Shah's detailed analysis of the process that led to its success is a great learning for the thoracic organ transplant community.

With warm regards,

Dr Julius Punnen

President, Society for Heart Failure and Transplantation



HEART TRANSPLANTATION AND DECEASED ORGAN DONATION - THE STORY OF GUJARAT

ABOUT THE AUTHOR



Dr Dhiren S Shah

Dr Dhiren Shah is Director of CVTS department and Chief of Transplant department Of Marengo CIMS HOSPITAL Ahmedabad. Founding director of 400 bedded CIMS hospital Ahmedabad. He is the first cardiac surgeon to perform a heart transplant in Gujarat in December 2016 and has successfully done 46 heart transplants. Has a recently started Lung transplant Program with 3 successful lung transplant. Dr Dhiren Shah has performed over 15,000 adult cardiac surgeries. Did first TransAortic TAVI of India in 2015. Did First HYBRID CABG in 2010. He has completed more than 1000 minimally cardiac surgeries. Pioneer in Heart Failure surgeries and Trained for minimally invasive from Leppgiz heart institute. Mitral valve

repair training from Dr Van Phan in HO Chi Min, Vietnam. Observership for heart transplantation from UPMC Pittsburgh USA.

Dr Dhiren Shah is a member of workforce committee of health ministry of Government of India and ICMR for developing the Standard Treatment Guidelines (STG) for cardiothoracic and vascular surgery. Also member of workforce committee for price revision in Ayushman bharat scheme Health ministry of Government of India. Dr Dhiren Shah is also a Member of workforce committee of Government of Gujarat for developing SOTTO and Transplant guidelines in Gujarat. Founding and executive member of INSHLT, SCS(Society of Coronary Surgeons). Member of SfHFT.

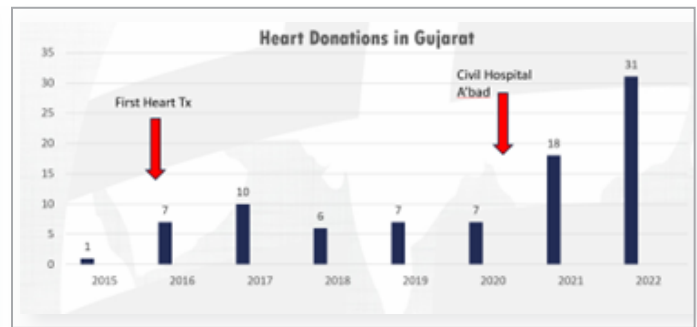
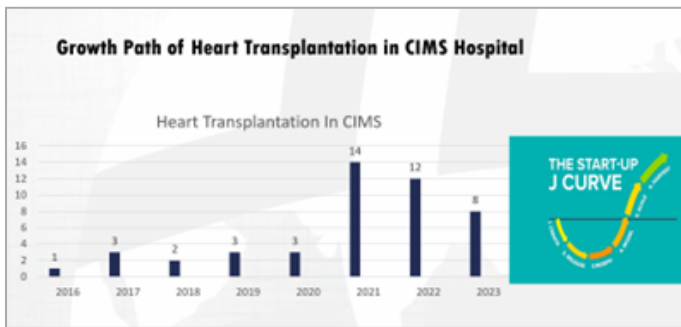
Heart transplantation is an established form of treatment for advanced heart failure in new world since the last 40 - 50 years. Over the past ten years, the number of heart transplants performed worldwide has increased by more than 300%, and in the US, it has increased by more than 400%. In western countries, especially in North America the number of heart transplantation took off in a steep way after 1980s reaching to almost 3000 to 4000 heart transplantation annually. It has reached plateau because of the number of organ donations that could be achieved.

In India, the first heart transplantation was performed at the All India Institute of Medical Sciences, Delhi in 1994. However, the number of heart transplants could not pick up until 2010. In fact, only in 2019 India reached its milestone of performing 1000 heart transplants, which was almost 25 years after the Transplantation of Human Organs Act passed by the Government of India. Unlike kidney or liver, the heart transplantation is possible only from the deceased donors (donation after brainstem death or donation after circulatory death). However, it is

quite evident that the deceased organ donation is very less in numbers in India compared to the number of organs required for transplants. Only after 2010, the organ donation rate gradually picked up particularly in southern India and simultaneously the heart transplantation started taking its stride in southern states. But in western India, there was no trace of heart transplantation happening though the number of organ donation was gradually and steadily growing in some parts specifically in cities like Surat, Bhavnagar and Rajkot in Gujarat.

With Support from institutions like Institute of Kidney Diseases and Research Centre (IKDRC) and non-governmental organizations (NGOs) spearheading awareness helped in slowly and steadily increasing organ donation rate in Gujarat. It so happened that Surat became the city with maximum number of organ donations in the country in recent years, but surprisingly there was not even a single heart transplant centre there. The number of heart transplantation could be an ideal indicator of deceased organ donation status of any particular state or





country. The statistics seen initially in Tamil Nadu, Kerala, and Andhra Pradesh in the early 2010 and later in western India in Gujarat and Maharashtra clearly demonstrates that heart transplantation can act as a catalyst to increase deceased organ donation in the country.

In 2016, the CIMS Hospital in Ahmedabad, received its heart transplantation licence and the first successful heart transplantation was performed on 19th December 2016. With the heart transplant, which is undoubtedly the most celebrated and glorified transplant procedure, the awareness about organ donation has rapidly increased reaching to every corner of the state. Between 2017 and 2019, there was almost 20% increase in the deceased organ donations in Gujarat. CIMS Hospital was still the only hospital performing heart transplants in Gujarat and the numbers were steadily growing following the J curve. When the COVID-19 struck in 2020, yet the spirit of organ donation was high. Even in the midst of lock down and chaos, Gujarat did India's first deceased organ donation and transplantation of heart, liver and kidney during the pandemic and we did heart transplantation from the organ received from this donation. Deceased donation has doubled in Gujarat compared to a total of 36 donations in 2020 to 70 donations in 2021 and number of organs donated increased from 110 to 223 organs in 2020 and 2021 respectively.

Civil Hospital in Ahmedabad which is one of the largest Hospital campuses in Asia, hardly had any organ donations till 2020. Despite the fact that there are 80 to 90 patients on a ventilator in the neurosurgical ICU at any given moment, a large number of brain-dead potential organ donors are left unidentified. In 2020-21, the organ donation drive was initiated by the state government with the support from non-governmental organisations in the Civil Hospital as a result of which the deceased donation rate of the hospital increased significantly. The Civil Hospital, Ahmedabad marked its 136 deceased organ donations within a period of almost three years with almost 54 organs donated 117 livers, 240 kidneys, 39 hearts and 24 lungs donated.

Despite the horrifying second wave of COVID-19, CIMS Hospital, Ahmedabad performed 14 heart transplants in 2021, nine of which were done in the last two months of

3 heart transplants take place in state in 6 days

Intra-state heart transplants catch up with inter-state transplants; a yr ago, hearts going out of Guj were double than those transplanted here after organ donation.

Ahmedabad has 3 heart transplants in 6 days

Till now there have been 56 heart transplants in Gujarat. However, it is for the first time that three heart transplants have been carried out in the city within a span of six days.

On Friday, the heart of 32-year-old Mehul Parmar, from Talod in Sabarkantha, was transplanted into a 21-year-old boy from a village near Indore, Madhya Pradesh, in Ahmedabad.

Parmar, who had raised his three sisters on his own after losing both parents at a young age, met with an unfortunate accident in Talod on December 13. He was brought to Ahmedabad Civil Hospital for treatment. However, he was declared brain dead on Friday and his sisters consented for organ donation.

the year. In fact, the CIMS Hospital performed three heart transplants in a span of six days in December 2021. The dream run of organ donation in Gujarat continued in 2022, with reaching a magical figure of 148 deceased organ donations and proclaiming Gujarat as one of the state with highest deceased organ donations in the country. The Civil Hospital, Ahmedabad had set an example and benchmark for the rest of the government hospitals and medical colleges in India with its exemplary contribution to the deceased donation programme.

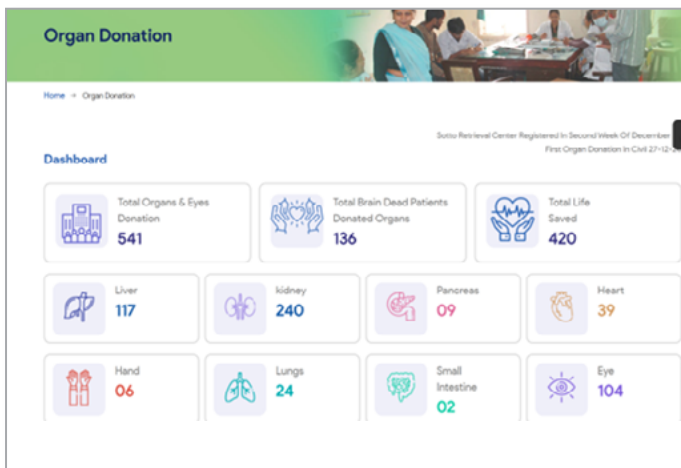
The Gujarat model showcases a multi-pronged approach for successful deceased organ donation programme

1. Government initiative, policies and impetus:

Government started SOTTO , Propagating from the state news media agencies , Collaborating with IIM Ahmedabad to analyse and chart out the road ahead , Making Brain dead Declarations compulsory from all ICUs , Starting Air Ambulance service at a very concessional rates, Chief Minister and Health Minister felicitating Organ donor Families and NGO involved in Organ donation at regular intervals , Appointing Grief councillors and organ donor Coordinators in all Medical colleges . I think will from the government is the foundation on which this organ donation program has developed and hope to flourish in coming future.

2. Dedicated and committed involvement from the medical community:

Sensitization of the medical community, particularly Neuro surgeons and ICU intensivist by repeated CMEs by



Cadaver donation up by 19%, organ donation by 42% in Guj

Times News Network

Ahmedabad: Jangalsinh Parthi, a youth from Kadi near Gandhinagar, sustained severe head injuries after a road traffic accident (RTA) earlier this week. Parthi was shifted to Civil Hospital for treatment where he could not be brought back to senses and was declared brain-dead on October 22. After consent of his family, his liver and kidneys were retrieved that gave a new lease of life to three persons.

With this incident, Civil Hospital has recorded seventh cadaver donation in a matter of one month — averaging nearly two donations every week.

Dr. Rakesh Joshi, medical superintendent of Civil Hospital, said that the rise in numbers is thanks to dedicated volunteers that contacted the family of the patient, coordinate with different stakeholders and ensure smooth formalities.

Organ	2021	2020
Donors	48	36
Kidney	78	61
Liver	48	32
Heart	10	7
Lung	16	8
Pancreas	2	2
Other	2	-
TOTAL	186	110

17th October 22, 2021, Ahmedabad, SOTTO, Gujarat

"The rise can be ascertained from the fact that in nine months, we have recorded donation of 36 cadavers in past nine months — out of total, nearly 60%, was in the past one month alone," he said. "In all, 36 organs were retrieved that gave new life to 44 patients."

Dr. Prasad Modi, VC of SOTTO and convener of state SOTTO, said that the number has increased significantly compared to 2020. Analysis revealed that cadaver donation has increased by 19%, whereas organ donation by 42% compared to 2020 even as two months are remaining in the year. "Every cadaver organ donation reduces burden from the live donors and also reduces the waiting period for the patients that spend every day with difficulty," he said.

few of the doctors from the centre performing Transplants like CIMS and importantly Having talks for all medical Colleges for MBBS students . In Fact, GEMERS (semi government) group of medical college have incorporated Organ donation lecture in the foundation course for First Year MBBS students.

3. Relentless work and perseverance from the NGOs

Donate life in Surat and RSS lead group in Ahmedabad have taken the lead to spread the awareness and facilitate the organ donation in Gujarat

4. Media involvement for spreading and highlighting awareness of organ donation

Government Media and Private newspaper have done their part by glorifying the news of Organ donation, for each and every organ donation in the state.

5. Government hospitals and medical colleges should take initiatives to increase organ donation.

If these measures are taken into consideration, it wouldn't take long to reach an organ donation rate of 10 per million populations, which would enable thousands of patients to receive a second chance at life. With increasing organ donation, it is essential to have a fair and transparent organ sharing policy and this shall be achieved through bodies like National Organ and Tissue Transplant Organization (NOTTO). It is worth considering best practices followed across the world such as the UNOS model (United Network for Organ Sharing).

PRESIDENT

DR JULIUS PUNNEN

Mob: 9980072785

Email: jpunnen@hotmail.com

VICE PRESIDENTS

DR AJITKUMAR V K

Mob: 9895153684

Email: ajitkumarvk@yahoo.com

DR P CHANDRASEKHAR

Mob: 9443047152

Email: chanpad@gmail.com

SECRETARY

DR S RAJAN

Mob: 98412 71353

Email: dr_rajana_icvd@hotmail.com

JOINT SECRETARY

DR RAJAGOPAL S

Mob: 9747606600

Email: srajagovindam@gmail.com

TREASURER

DR JACOB ABRAHAM

Mob: 9847128123

Email: jacobraham1@gmail.com

IMMEDIATE PAST PRESIDENT:

DR V NANDAKUMAR (2019-2023)

Mob: 9843015888

Email: drvnandakumar@gmail.com

PAST PRESIDENTS PERMANENT:

DR JOSE CHACKO PERIAPURAM

Mob: 9847043224

Email: joseperiapuram@hotmail.com

DR K VENUGOPAL

Mob: 9847005444

Email: venugopalknair@gmail.com

PAST PRESIDENTS

DR GEEVAR ZACHARIAH

(2013-2014 and 2014-2015)

Mob: 9846066816

Email: geevazachariah@gmail.com

DR SHIV K NAIR (2015-2016)

Mob: 9846010220

Email: Shivnairmd@gmail.com

DR K VENUGOPAL (2016-2017)

Mob: 9847005444

Email: venugopalknair@gmail.com

DR JOSE CHACKO PERIAPURAM (2017-2018)

Mob: 9847043224

Email: joseperiapuram@hotmail.com

DR P P MOHANAN (2018-2019)

Mob: 9846076006

Email: drppmohanana@yahoo.com

MEMBERS

DR BASHA KHAN

Mob: 8296825550

Email: bashajalal@gmail.com

DR ADITI SIGHVI

Mob: 9999445511

Email: aditisinghvi4@gmail.com

DR K U NATARAJAN

Mob: 9895057660

Email: kunatarajan@aims.amrita.edu

DR JAMES THOMAS

Mob: 9892797060

Email: thomasdrjames@yahoo.in

DR MANOJ DURAIRAJ

Mob: 9822322072

Email: manojdurairaj@hotmail.com

DR NAGAMALLESH

Mob: 9880135258

Email: nmalesh@yahoo.co.in

DR JAYAGOPAL P B

Mob: 9847023777

Email: jaigopallakshmi@gmail.com

DR PRADEEP KUMAR

Mob:

Email:

DR BAGIRATH

Mob: 9845144830

Email: drbagirath@gmail.com

DR JO JOSEPH

Mob:

Email:

DR TALHA MEERAN

Mob: 9167048815

Email: talha.meeran@gmail.com

DR JABIR ABDULLAKUTTY

Mob: 9447011773

Email: drjabi@yahoo.co.in

