



# BONE MARROW TRANSPLANTATION @ PGICH

The journey of a thousand miles begins with a single step



[www.pgich.edu.in](http://www.pgich.edu.in)



Department of Pediatric Hematology Oncology  
Department of Transfusion Medicine  
Post Graduate Institute of Child Health, Noida

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**Brajesh Pathak**

Deputy Chief Minister



Medical Education, Medical Health &  
Family Welfare, Mother and Child Welfare  
Government of Uttar Pradesh

Office : Room No. 99, 100, Main Building,  
Vidhan Sabha Sachivalaya

Phone : 0522-2238088 / 2213272 (Off )

Date



### **Message**

Post Graduate Institute of Child Health, Noida has been developed by the Government of Uttar Pradesh as a tertiary care center for management of all super specialities in children between 0 to 18 years of age. Since it is inception, we have observed how the center has developed with incorporation of advanced clinical care, academics and research.

It is a matter of pride and prestige to us that a new state-of-the-art Bone Marrow Transplantation unit has been developed in the center. I am also happy to note that the center has completed 50 pediatric bone marrow transplantation for various indications such as blood cancers, lymphomas, aplastic anemia, thalassemias and rare genetic disorders. The center is able to provide treatment through facilities through the government such as PM and CM relief funds and other schemes, thus providing a relief to patients from poor families in the country. We stand by our commitment to reach the last mile for every family and every child.

I congratulate Child PGI, Noida and wish them all the best for this venture.

A handwritten signature of Brajesh Pathak in black ink.

**(Brajesh Pathak)**

**Partha Sarthi Sen Sharma, IAS**

Principal Secretary



**D.O. No. :- 19 /P.S./MH&ME/2024**

Medical Health, Family Welfare & Medical  
Education Department, Government of Uttar Pradesh.

**Date : 13.01.2025**

**MESSAGE**

It is a matter of immense pleasure that the Post Graduate Institute of Child Health, Noida is releasing a souvenir to commemorate the opening of the new bone marrow transplantation and cellular therapy center. This center I am sure will make a substantial contribution for children with blood diseases and cancers where both these therapies are curative. The work done by the team at PGICH is commendable in this regard.

I am happy to note that government institutes such as PGICH has played a vital role in capacity building in hemoglobinopathies for affected states of the country and in developing IEC material for patients, parents, teachers and lay public in these regions.

I hope the new center will provide a ray of hope to children suffering from these diseases not only from this region but from rest of the country and internationally.

I wish the team at PGICH, Noida all success in this venture.

Jai Hind.

**(Partha Sarthi Sen Sharma)**





प्रो.(डॉ.) अतुल गोयल

**Prof. (Dr.) Atul Goel**

MD (Med.)

स्वास्थ्य सेवा महानिदेशक

**DIRECTOR GENERAL OF HEALTH SERVICES**



सत्यमेव जयते

भारत सरकार  
स्वास्थ्य एवं परिवार कल्याण मंत्रालय  
स्वास्थ्य सेवा महानिदेशालय

Government of India  
Ministry of Health & Family Welfare  
Directorate General of Health Services

## संदेश

मुझे इस बात की प्रसन्नता हुई है कि देश में रक्त संबंधी रोग व कैंसर से पीड़ित बाल रोगियों के निदान में अभूतपूर्व प्रगति हुई है। मुझे यह देखकर जानकर हर्ष हुआ कि शुरुआत से ही पोस्ट ग्रेजुएट इंस्टीट्यूट ऑफ चाइल्ड हेल्थ ने जन्म से लेकर 18 वर्ष तक के बच्चों के लिए टर्शीएरी देखभाल के रूप में स्वयं को पूर्णरूप से स्थापित किया है। महंगी दवाओं और जांचों के वित्तीय बोझ के बिना, पुरानी बीमारियों से पीड़ित बच्चों की उन्नत देखभाल प्रदान करने हेतु सरकारी क्षेत्र में ही इस प्रकार के केंद्रों की अधिक आवश्यकता है।

मैं संस्थान में नए अस्थि मज्जा प्रत्यारोपण (बोन मेरो ट्रांसप्लांट) केंद्र के उद्घाटन के अवसर पर विभाग के सभी चिकित्सकों और निदेशक को हार्दिक शुभकामनाएं देता हूँ। मुझे उम्मीद है कि यह केंद्र बच्चों के लिए प्रदान की जाने वाली देखभाल को और उन्नत करेगा, आम आदमी की पहुंच से दूर इलाज को सुगम बनाएगा और इन बीमारियों के उपचार के लिए प्रतीक्षा अवधि को कम करेगा। मैं इस शुभ अवसर पर संस्थान को बधाई देता हूँ।

अतुल गोयल

(अतुल गोयल)

प्रो. (डॉ.) धीरज शाह  
एम.डी, डी.एन.बी, एफ.ए.एम.एस

निदेशक

PROF. (DR.) DHEERAJ SHAH

MD, DNB, FAMS

Director



आरोग्यं सुखसम्पदः

राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान  
स्वास्थ्य एवं परिवार कल्याण मंत्रालय  
भारत सरकार

THE NATIONAL INSTITUTE OF HEALTH AND  
FAMILY WELFARE  
MINISTRY OF HEALTH & FAMILY WELFARE  
GOVERNMENT OF INDIA

## संदेश

मुझे यह जानकर अत्यंत प्रसन्नता हुई कि सी.एस.आर. के सहयोग से बाल चिकित्सा एवं स्नातकोत्तर शैक्षणिक संस्थान, नोएडा आठ बिस्तरों के बोन मैरो ट्रांसप्लांट यूनिट एवं सेल थेरेपी सुविधा का आरंभ करने जा रहा है। यह सुविधा विकसित करने के लिए मैं आपको हार्दिक बधाई प्रेषित करता हूं। मेरा यह मानना है कि निश्चय ही संस्थान में इस सुविधा की उपलब्धता से रक्त एवं कैंसर रोग से पीड़ित बच्चों के उपचार में गुणात्मक एवं कारगर सहायता मुहैया कराई जा सकेगी।

मैं, इस बात से भलीभांति अवगत हूं कि बाल चिकित्सा एवं स्नातकोत्तर शैक्षणिक संस्थान, नोएडा बच्चों से संबंधित चिकित्सकीय निदान, शिक्षा एवं अनुसंधान प्रदान करने हेतु सतत प्रतिबद्ध एवं कार्यरत है। प्रारंभ से ही संस्थान सुपर स्पेशलिटी उपचार हेतु एक ऐसे रेफरल केंद्र के रूप में प्रतिष्ठित हुआ है, जहां केवल उत्तर प्रदेश ही नहीं, अन्य प्रदेशों से रेफर किए गए रोगी भी लाभान्वित होते रहे हैं। संस्थान में राष्ट्रीय चिकित्सा परिषद, राष्ट्रीय परीक्षा बोर्ड एवं अन्य अंतरराष्ट्रीय एवं राष्ट्रीय संस्थानों के माध्यम से महत्वपूर्ण एकेडमिक पाठ्यक्रम एवं अनुसंधान कार्यक्रम संचालित किया जाना अत्यंत सराहनीय है।

संस्थान के पीडियाट्रिक हेमेटोलॉजी ऑन्कोलॉजी विभाग द्वारा 26 बच्चों का सफल बोन मैरो ट्रांसप्लांट किया जाना, चिकित्सा जगत के लिए अत्यंत उत्साह वर्धक एवं महत्वपूर्ण उपलब्धि है। मैं प्रार्थना करता हूं कि संस्थान इसी प्रकार सफलता की इबारत लिखता रहे एवं रोगियों को सफल इलाज प्रदान करता रहे।

ट्रांसप्लांट यूनिट एवं सेल थेरेपी सुविधा का शुभारंभ करने के अवसर पर संस्थान द्वारा जारी की जा रही स्मारिका के लिए आपको हार्दिक बधाई एवं शुभकामनाएं। यह स्मारिका इस अवसर के एक सुंदर स्मृति-अध्याय के रूप में सदैव आलोकित रहेगी।

शुभकामनाओं सहित।

भवदीय,

धीरज शाह  
*Dheeraj Shah*

(प्रोफेसर (डॉ.) धीरज शाह)

बाबा गंगनाथ मार्ग, मुनिरका, नई दिल्ली - 110067 / Baba Gangnath Marg, Munirka, New Delhi - 110067



## POST GRADUATE INSTITUTE OF CHILD HEALTH SECTOR-30 NOIDA 201303

**PROF. ARUN KUMAR SINGH**  
MS, M.CH, FAMS, FUICC, PGDPHA  
**DIRECTOR**

E-mail : childpginoida@gmail.com  
Website-www.pgich.edu.in  
Phone No. 0120-2524102

### Director's Desk

It is a matter of immense pleasure that we at the Post Graduate Institute of Child Health, Noida have been able to develop advanced diagnostics and treatment opportunities for children between ages of 0-18 years. Bone Marrow Transplantation facility is one such treatment which was previously not available to majority of patients from low and middle income families as availability was restricted to private sector hospitals.

Bone Marrow Transplantation is a curative treatment for many hematological disorders and cancers where the bone marrow is not functioning appropriately. In hematological disorders such as thalassemia, aplastic anemia and bone marrow failure syndromes, the stem cell responsible for producing normal blood cells are absent or defective. In cancers such as leukemia the stem cells are often responsible for cancer generation. In these disorders it is logical that these stem cells when replaced by normal stem cells from another individual offer the opportunity of cure to these children. As the procedure is highly complex with months of immune suppression, the facility for BMT is available only in very few centres and requires a team work of multiple departments.

We are happy to report that this facility is available at our Institute and more than 50 children have availed this treatment at a fraction of the cost in private health care sectors. With development of the new 08 bedded paediatric BMT facility, we hope to reach many more patients with these disorders and no child with any of these illnesses is turned back for the lack of access, availability or affordability.

**Prof. Arun Kumar Singh**  
Prof. Arun Kumar Singh  
MS, M. Ch, FAMS, FUICC, PGDPHA  
Director

Post Graduate Institute of Child Health  
Noida

# OUR GRATITUDE

Government of Uttar Pradesh

Directors of PGICH

Dr Arun Kumar Bhatt

Prof Devendra Kumar Gupta

Prof Jyotsna Madan

Prof Ajai Singh

Brig (Dr) Rakesh Gupta

Prof Arun Kumar Singh



Administration of the institute

National Health Mission, MOHFW

Central & State government funding for BMT

Senior faculty and colleagues at PGICH

Fellows, Senior and Junior Residents at PGICH

Nursing team in Department of PHO and BMT



# ...to the following contributors

Non-Government Organizations and CSR support

Doctors For You for helping us develop the new BMT unit

Green Shakti Foundation  
Cankids KidsCan & EXL India  
Yuvraj Singh Foundation  
Aadhar Charitable Trust  
St Jude Child Care Center  
&  
Adobe India



Individual donor efforts

Prof Shirley Jethmalani, for supporting the first BMT room at PGICH in 2019

Mr Pratap Chandani, for his untiring efforts

Ms Shilpa Sharma for the beautiful artwork inside the new BMT unit

Mrs Archana Atri, "Kahaniwali Nani" for her stories that come to life

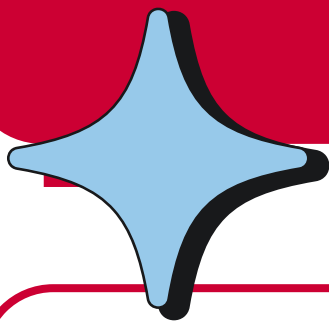




# We are grateful to the mentors who helped us develop the BMT unit

Dr Revathy Raj, Director, Pediatric Hematology  
Oncology and BMT, Apollo Hospitals, Chennai

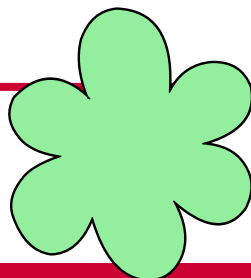
Dr Dinesh Bhurani, Director, Clinical Hematology  
and BMT, Rajiv Gandhi Cancer Institute, Delhi



Dr Andrew Gennery, Professor, Pediatric Immunology and BMT,  
Great North Children's Hospital, Newcastle Upon Tyne, UK

Dr Mary Slatter, Professor, Pediatric BMT, Great North  
Children's Hospital, Newcastle Upon Tyne, UK

Dr Parinda Mehta, Professor, Pediatric BMT and  
Immunodeficiency, Cincinnati Children's Hospital Medical  
Center, Ohio, USA



We are grateful to all our teachers for imparting  
knowledge, igniting hope and instilling a love for learning



# THE JOURNEY

Post Graduate Institute of Child Health, is a stand-alone tertiary care pediatric institute in the public health sector, under Government of Uttar Pradesh, India. The institute caters to superspeciality care in children who need medical and surgical expertise.

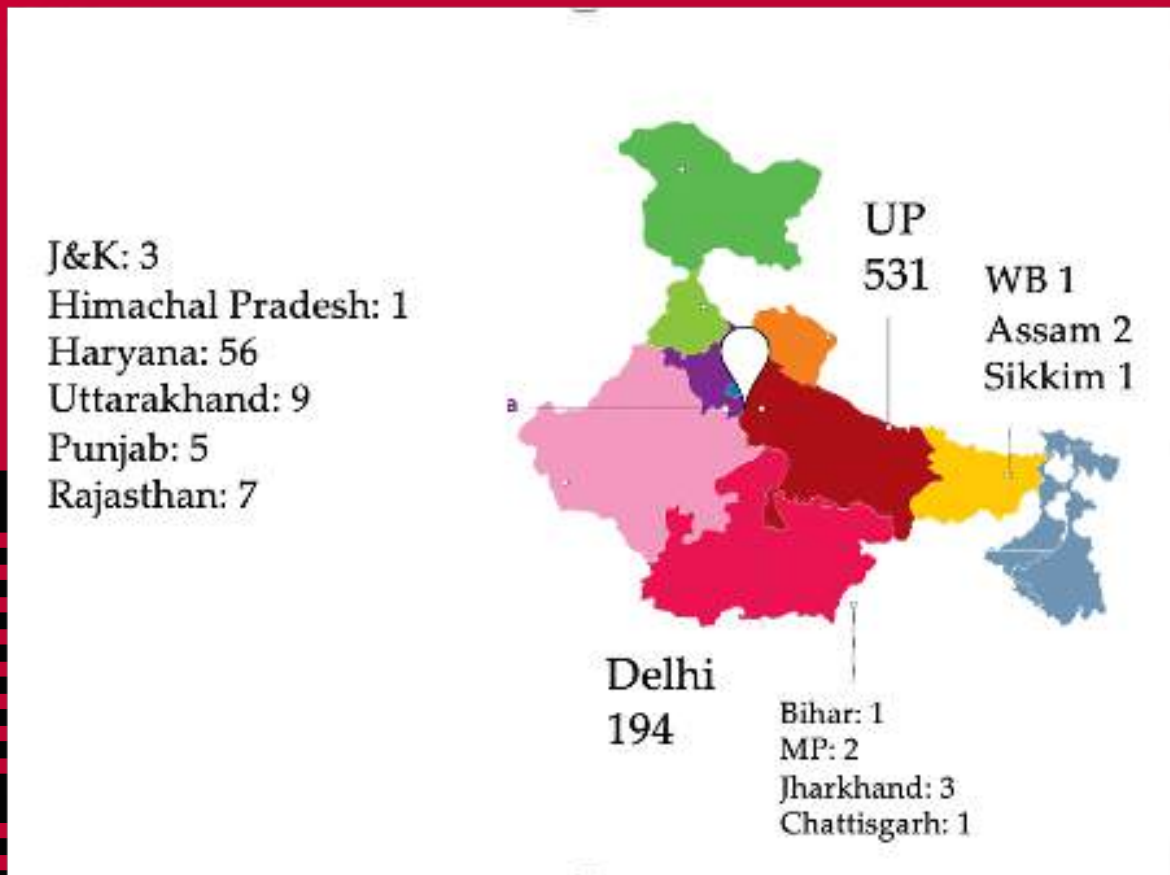
The Department of Pediatric Hematology Oncology caters to children with blood diseases such as thalassemia, hemophilia, childhood cancers and many genetic haematological diseases. The center has been receiving support from National Health Mission, Blood cell for treatment of thalassemia and hemophilia and has set up an Integrated Center for Hemophilias and Hemoglobinopathies in 2018. Since 2017, children with cancers are registered here and every year 150-200 new cancers are registered.

The facility for Bone Marrow Transplantation was set up in 2019, in a single room complex and since then 53 children have benefitted from this facility. This is one of the very few centers in India providing high end treatment such as BMT in a public sector hospital and thus impacting the lives of many.

Earlier patients in the state had to go to Lucknow, Delhi or Mumbai for availing this treatment. Now, 30% of patients who undergo treatment here are referrals from other states of India such as Delhi, Uttarakhand, MP, Bihar etc.

# THE JOURNEY...

Geo-spread of hematological diseases  
registered at PGICH, Noida in 2024







# THE JOURNEY...

The center has been receiving support from Chief Minister's Relief Fund from UP and other states, Rashtriya Arogya Nidhi, Prime Minister Relief Fund and UP Asadhya Rog Nidhi for cancer care and stem cell transplantation.

The center coordinates with patient organisations for bridging the gap if any like motivating voluntary blood donors, free HLA typing for patients and families etc.


## Highlights – Patient care

Dedicated cancer care beds with more than 50 patients admitted daily for cancer and aplastic anemia

Cancer care includes chemotherapy, cancer surgery, central line insertion, dedicated supportive care team with dietician, play therapist, social workers etc.

Dedicated 12 bedded thalassemia and hemophilia day-care developed with support from NHM.

New BMT unit developed with help from DoctorsForYou NGO now has 8 new beds thus increasing the intake to more than BMT patients yearly.





# THE JOURNEY...

More than 420 thalassemia patients are currently registered at our center. Of these, 250 patients are transfused at our center regularly and rest of the patients are transfused at their local hospital and seen by us for chelation and monitoring.

Provision of Leukodepleted and 100% ID-NAT tested blood transfusion (provided free to the patient) and chelation therapy through funding received from NHM for thalassemia care

Multidisciplinary care with weekly team meetings (Pathology, Nutrition, Growth and development, Pediatric Cardiology, Pediatric Gastroenterology, Pediatric Endocrinology, Pediatric dentistry etc. Pediatric Endocrinology OPD on each Wednesday caters to patients with thalassemia

Stem cell transplantation for cancer, aplastic anemia, thalassemia major – First cancer patients who underwent BMT is 20 years old and lives and works in Uttarakhand. First matched sibling donor BMT performed for thalassemia major in January 2023.



# THE JOURNEY...

## Highlights – Academics

Super speciality training under National board of Examinations and Indian Academy of Pediatrics – 2 year fellowship program in Pediatric Hematology Oncology for post MD Pediatrics students.

Training for nurses, technicians in thalassemia, hemophilia care

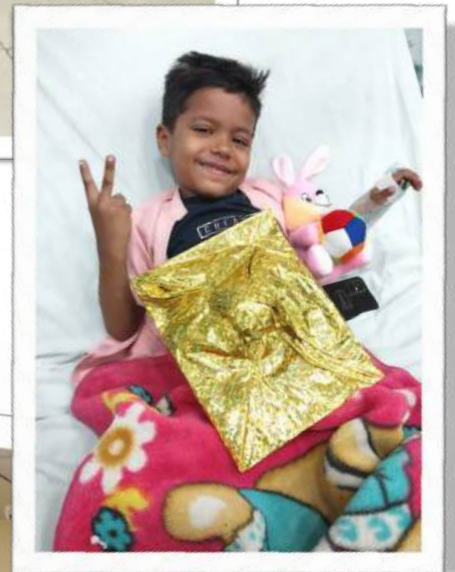
Training in hemoglobinopathies (Funding received in FY 2020-21). Monthly online training activity being done in collaboration with Indian Academy of Pediatrics, Uttar Pradesh. Each session attended by 70-100 pediatricians/ postgraduates/ medical officers. Topics selected focus on haematological issues in children, transfusion therapy guidelines, comprehensive management of thalassemia etc.

Capacity building for Thalassemia and Hemoglobinopathies (Collaboration with ECHO 2022- 2024). The national hub for the project was situated at Post Graduate Institute of Child Health Noida. 121 Medical officers and 120 pediatricians completed the training over last 1 year. Phase 2 consisting of webinars of nurses, lab and blood bank technicians have been initiated.

## Highlights – Research

Research projects on comprehensive healthcare in thalassemia, cost of treatment of thalassemia vs prevention, quality of life, new drugs to reduce transfusion frequency etc. are underway. Many projects have been completed and published in peer reviewed journals and international conferences.

# THE JOURNEY...





# THE JOURNEY...

Md Asif, diagnosed with relapsed Acute Myeloid Leukemia from Uttarakhand. Discharged after BMT on 25 Nov 2019.

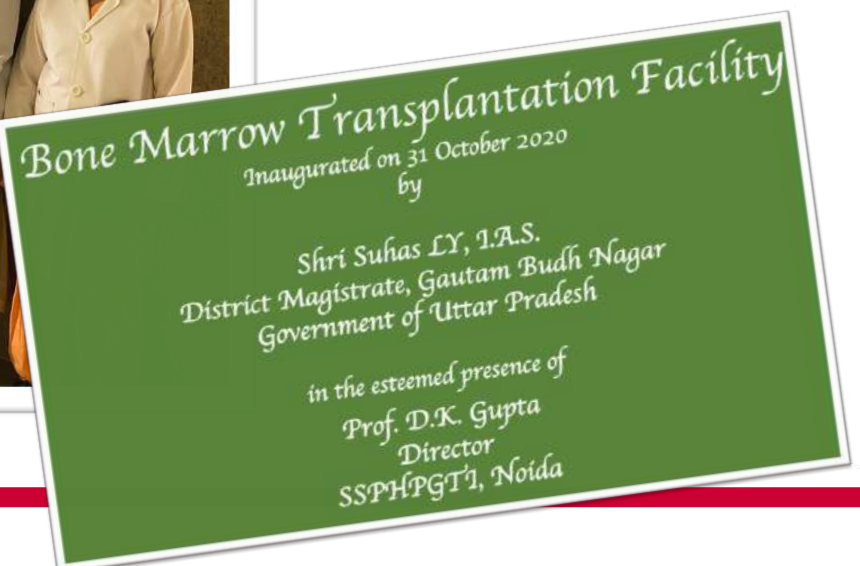
With  
Previous Director  
Prof DK Gupta  
(1st BMT at PGICH)



He is disease free and lives and works in Uttarakhand



Inauguration of  
initial BMT unit on  
31 Oct 2020



# THE JOURNEY...

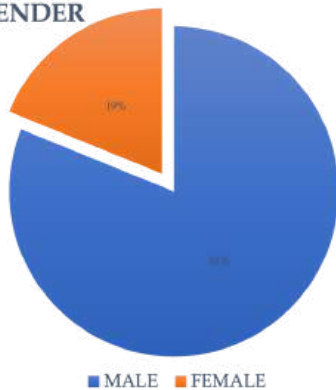
Aryan, diagnosed with  
Severe Aplastic  
anemia from Hapur,  
UP, discharged after  
BMT in August 2024  
with Director  
Prof AK Singh



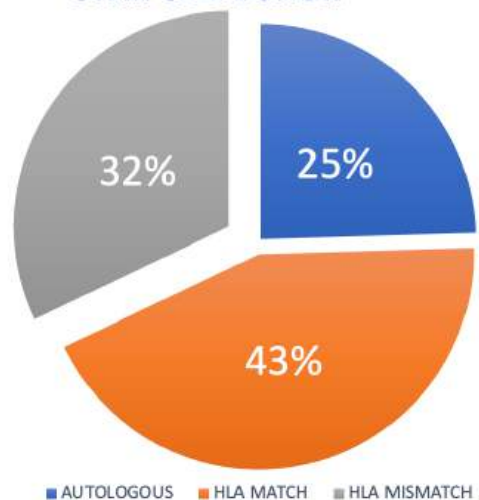
Pediatric BMT  
PGICH Experience  
No of cases – 53

Nov 2019 - Dec 2024

GENDER

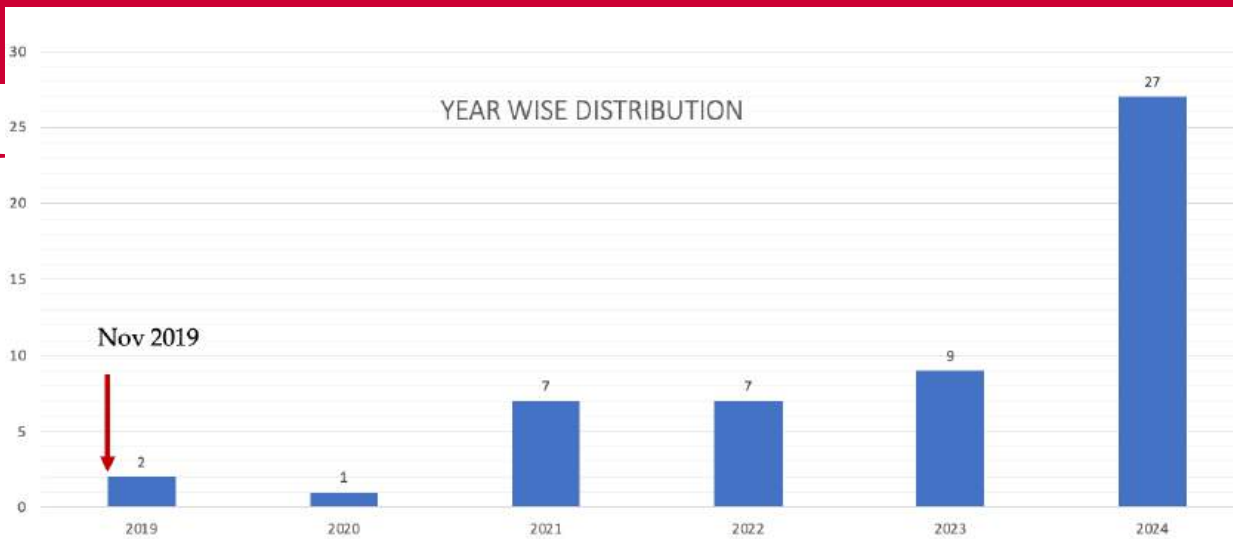


STEM CELL DONOR

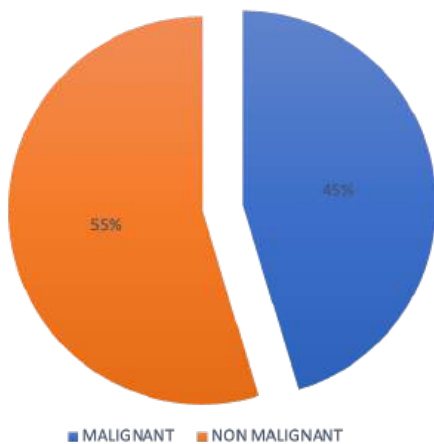


# PGICH

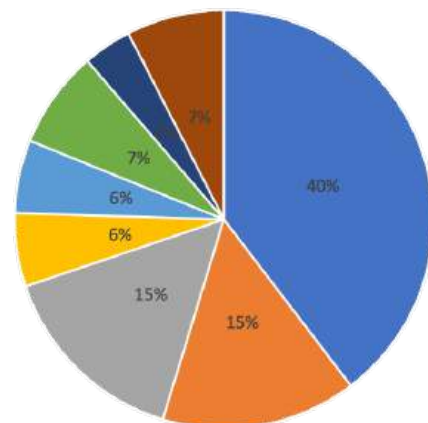
## BMT DATA



### INDICATIONS FOR BMT



### DIAGNOSIS



■ AA ■ ALL ■ Solid Tumor ■ AML ■ THALASSEMIA ■ IBMFS ■ NHL ■ Other



Doctors For You (DFY) is a Non-Governmental Organization (NGO) registered under the Societies Registration Act 1860 Section 21 having registration no. F-56886(Mum). Founded in India in 2007, with a vision of "Health For All" and mission of Providing sustainable, equitable, effective and efficient health care services to the most vulnerable individuals and communities, DFY is a areligious and apolitical organization governed by "humanitarian principles of humanity, impartiality, and neutrality, with a focus on being people centric, inclusive, diverse and comprehensive in approach. DFY's Core working principles, includes closing the continuum of care loop, while not creating parallel systems of care.

DFY is honoured to have been a part of the development of the Bone Marrow Transplant Unit at PGICH. Among DFY's many other successful interventions, some notable one's of the year 2023-2024 are Bridge the Gap to strengthen public healthcare system; Emergency (disaster) health responses; contribution to National TB Elimination program, Sampoonnata Abhiyan with NITI Aayog and Ayushman Bharat Digital Mission (ABDM), eIMNCI for maternal and child heath care, One Health Lab, mobile healthcare services in border areas, livelihood opportunities for women in health sector and health education to all age groups (especially, adolscents), clean environement and productivity drive among farmers. These are descriptively recorded in various reports and publications (by inhouse, government, research journals and others). Similarly, it is also reflected in the scale of DFYs operation across 28 Indian States





## DOCTORS FOR YOU



The work of DFY is guided by the underlying concept of “Bridging the Gap” that may exist in a healthcare system or facility towards enhancing optimal delivery/ functionality.

Doctors For You has earned many accolades Junnon Awards (2023), NDTV True Legend Award (2022), CSR BOX Award (2021), Golden Ruby Award (2015), The SAARC Award (2010), The British Medical Journal Group Award (2009), listed among the Top 50 NGOs by the World Economic Forum (2021), Best International Organisation in Ketto Award (2021) and many more. DFY has received overwhelming response and recognition from the government, non-governmental agencies, corporates, communities, medical professionals, students, and volunteers.

Doctors For You is proud to have supported the vision of this facility to help bring it to reality along with the help of its CSR partners Boeing, Adobe, Give India and Ascendum. Together, the support led to the technology and infrastructure required to bring the BMT ward to functionality, including negative pressure air flow, biopass gates, on-site laboratory, 24-7 AC with backup and a transplant coordinator.

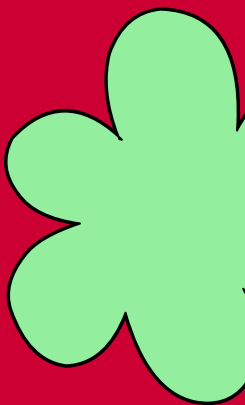
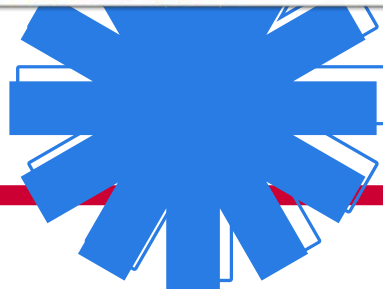
DFY is acknowledged with Recognition of SIRO by the DSIR, Ministry of Science and Technology, India, and has published research in many reputed research Journals - PLOS ONE, SCIENTIFIC REPORTS, British Journal of Dermatology, CITIES & HEALTH, etc. DFY has also collaborated with many national and international universities for research work with The Lancet Commission on Global Surgery, NIHR-GHRG India project, NIHR- Floods & Non-communicable diseases in India, etc. To learn more or connect with DFY, please visit <https://www.doctorsforyou.org/>



DoctorsForYou  
expresses its gratitude to the following  
donors for their kind contribution to the  
construction of this facility

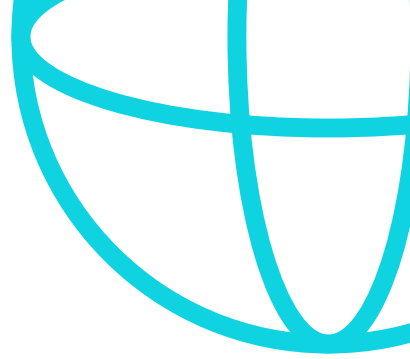


# THE JOURNEY





# MOVING FORWARD



## Facilities available at PGICH

1. 8 Bedded BMT unit - 7 positive pressure and 1 negative pressure room
2. Biopass for movement of consumables
3. Dedicated nursing staff
4. Child friendly themes
5. In house cryopreservation
6. Cell therapy facility being developed to enable CART/gene therapy in future

## Welcome to BMT unit, PGICH





# MEET OUR TEAM

Department of Pediatric Hematology Oncology



Faculty: Dr Nita Radhakrishnan, Dr Silky Jain, Dr Anuj Singh  
Fellows: Dr Hari Gaire, Dr Sudipto Bhattacharya, Dr Aditi Tulsiyan

Nursing in charge – Dinesh Pal, Urvi Srivastava

Nursing staff in BMT - Deepika Kushwaha, Hemlata Singh, Indu Sayal, Priyanka Tandi, Aman Sharma, Bhavna, Shivani, Jyoti Dagar, Pratima Singh, Megha, Anamika, Poonam, Kanika, Monika Bharadwaj, Rahul Jatav

BMT Coordinator – Anukriti Srivastava

Cankids Team – Asad Khan, Rekha Sharma, Priti Dubey

Data manager- Surendra Singh

NHM Team – Rakesh Rohilla, Varsha

Research Coordinators – Ankit Kumar, Amrit Mamgain

Research Fellow – Amit Pandey

Senior Residents & Junior Residents

# MEET OUR TEAM

Department of Transfusion Medicine and Blood Centre



Faculty - Dr Seema Dua, Dr Satyam Arora, Dr Anupa Pokhrel  
Senior Resident – Dr Kriti Bani

Junior Residents – Dr Ganga R, Dr Jashim Debbarma,  
Dr Prathma Garewal, Dr Akshay Paliwal, Dr Arisha Khan  
Technical officers and nursing staff



# THANK YOU



## Contact Information

BMT Helpline +91 70650 58144

pho.pgich@gmail.com

[www.pgich.edu.in](http://www.pgich.edu.in)

PGICH, Sector 30, Noida, 201303





in the service of children of our nation