



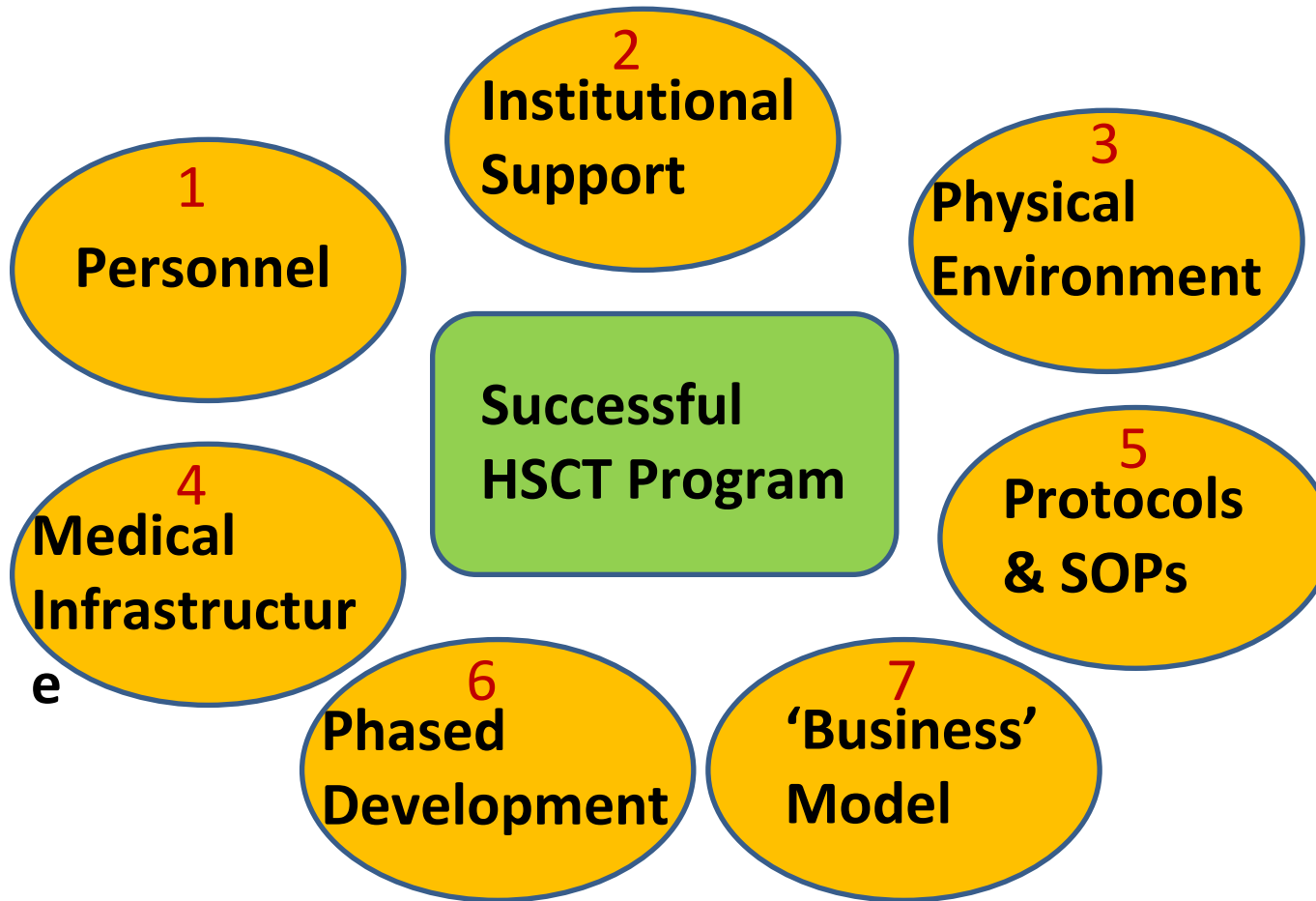
Workshop of the WBMT
in cooperation with the
World Health Organization (WHO)

Hanoi, Vietnam, November 10 – 11, 2011

Starting a HCT program – A perspective from India



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Establishing a successful HSCT program

Establishing a successful HSCT program

1. Developing appropriate personnel

1. Physicians – Comprehensive training (2-3 years) in hematology and transplantation **(Most critical)**

2. Resident physicians

3. Nurses – Very critical component, need a team, 1 to 1 nursing, if possible

4. Consultative support – Histopathology, Radiologists, Clinical consults: Gastroenterology, Nephrology, Neurology, Cardiology, others

5. Apheresis / cryopreservation staff

6. Transplant coordinators / counselors

7. Housekeeping staff / Engineers

Establishing a successful HSCT program

2. Physical Environment

1. Transplant rooms – HEPA filtered
2. Water – “clean”
3. Food supply – ?Sterile
4. Support departments – Central sterile supply
5. Protocols for entry / exit
6. Protocols for housekeeping
7. Microbiological monitoring of air and water



CHRISTIAN MEDICAL COLLEGE, VELLORE, INDIA (ESTD: 1900)



Streets
around
CMC,
Vellore





Establishing a successful HSCT program

3. Institutional support

1. Critical for developing the

- team of personnel**
- physical environment for HSCT**
- medical infrastructure**

2. Provide necessary space and financial support for establishing infrastructure for what may appear esoteric at first

Establishing a successful HSCT program

4. Medical infrastructure

1. HLA typing – Institutional / outsourced
2. Insertion of Hickman / Broviac catheters
3. Blood bank with components – platelets / plasma
4. Apheresis instruments – for PBSC / platelets
5. Blood irradiation facilities
6. Round the clock laboratory services:
 - Hematology (Flowcytometry / Molecular genetics
→ graft assessment /
chimerism)
 - Biochemistry
 - Microbiology – bacterial / fungal / viral infections
(quantitation, if possible)
7. Pharmacy services: Drugs / TPN / other requirements

Establishing a successful HSCT program

5. Establishing protocols and SOPs

Important to have clearly defined policies and protocols for everything –

1. Pre-transplant evaluation (recipient & donor)

2. Conditioning regime

3. Harvest of stem cells – BM / PBSC

4. Cultures and antibiotics – prophylaxis, if any

5. GVHD prophylaxis and (?treatment)

6. Post-transplant follow-up and care –

 Taper of GVHD prophylaxis

 Monitoring of engraftment / chimerism

 Immunization protocol

7. Long term follow-up protocols

8. Systematic data recording for analysis and quality management

Establishing a successful HSCT program

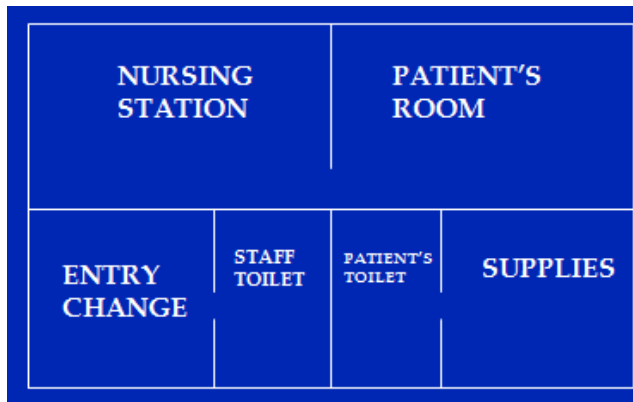
6. Phased development

- 1. Build team through practice of intensive hematology – managing chemotherapy and cytopenias with transfusions / antibiotics / other supportive measures**
- 2. Careful selection of initial patients**
- 3. Start with autologous, if possible, for multiple myeloma and then lymphomas when cryopreservation becomes possible.**
- 4. Move to matched related allogeneic transplants in good risk patients before doing high risk / alternative donor transplants**
- 5. Collegial atmosphere for discussion / questions in the team**
- 6. Keep up with relevant literature and technology, as much as possible – Introduce research into clinical practice**
- 7. Develop a team that communicates well patients and**

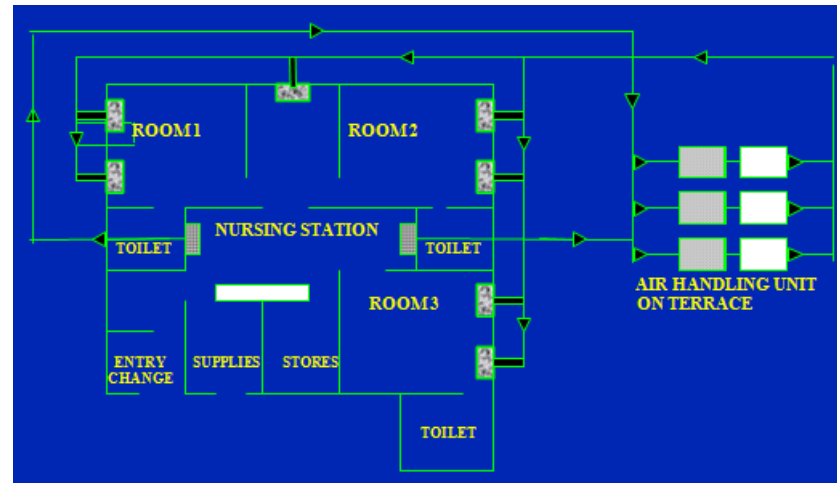
Establishing a successful HSCT program

7.The 'business' model (if relevant)

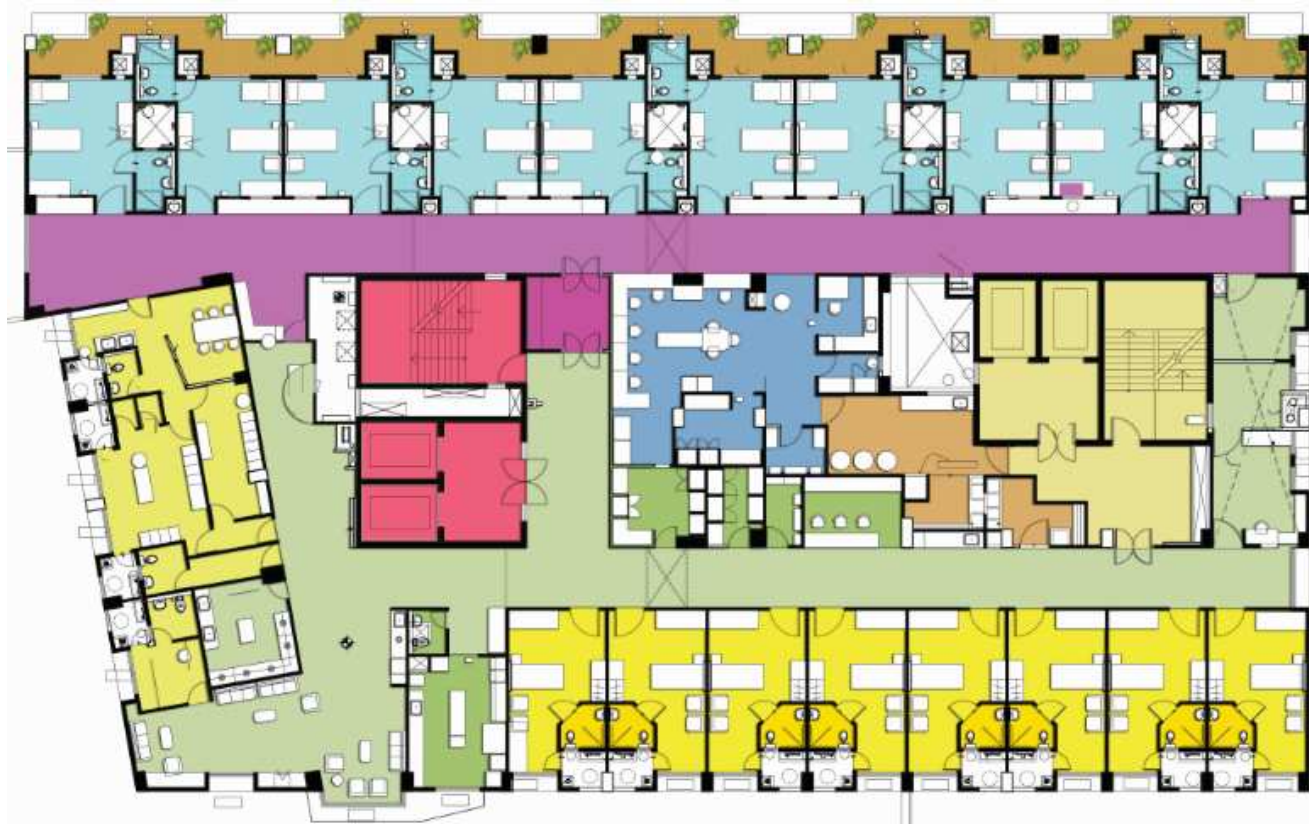
- 1.Even if fully supported by government funds, need to evolve a program that is financially sustainable within that health care system**
- 2.If in the private sector (insurance / self pay), need to develop a cost structure that allows even those with limited resources to access the program**



1986 (1 bed)



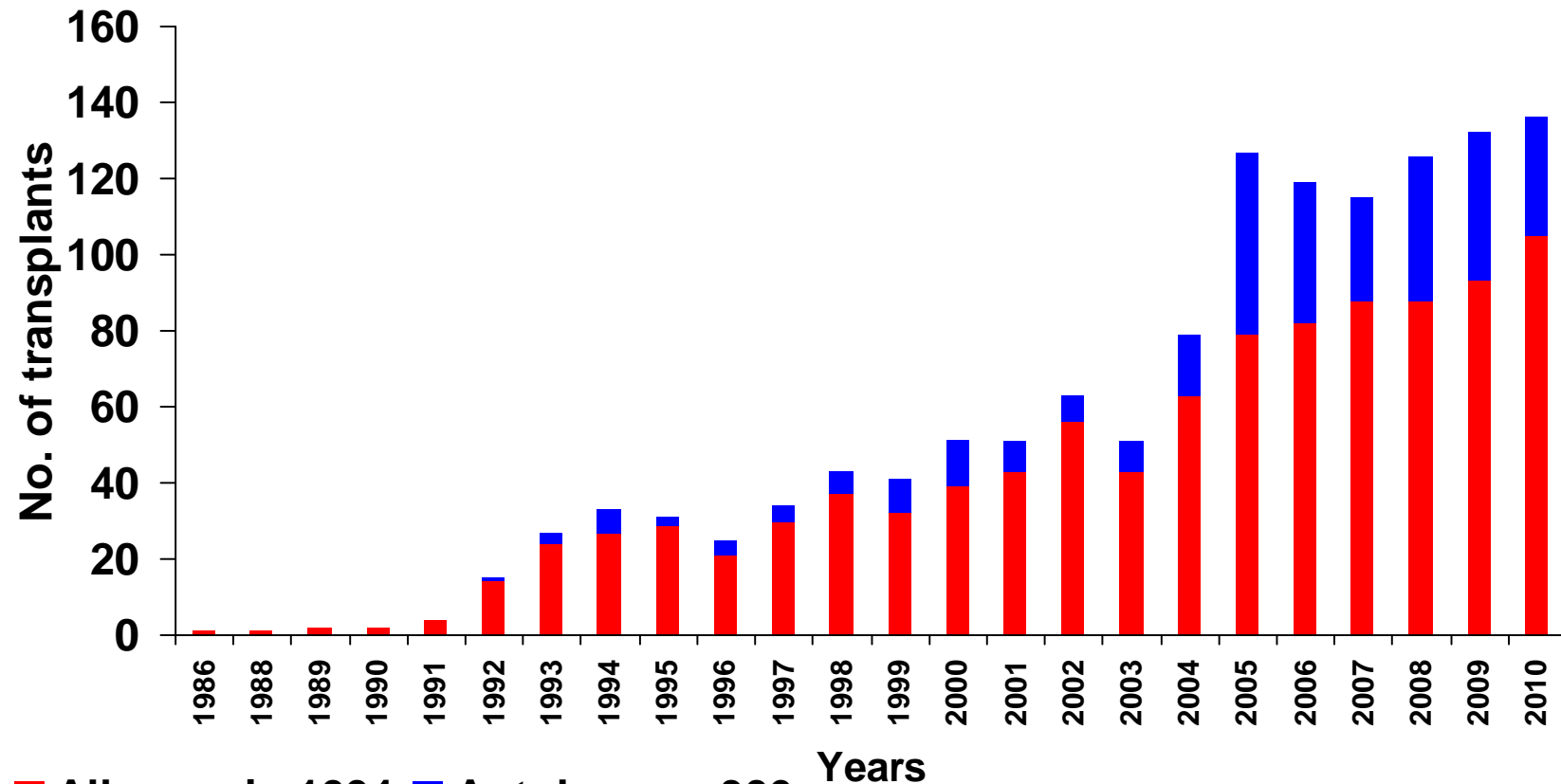
1990
(3 beds)



2008
10+8
beds

Phased development of the Stem Cell Transplant Unit at CMC, Vellore,

BONE MARROW TRANSPLANTATION CMC (Oct 1986 - Dec 2010)



■ Allogeneic-1004 ■ Autologous-306

-Matched related : Avg cost - US \$ 20,000

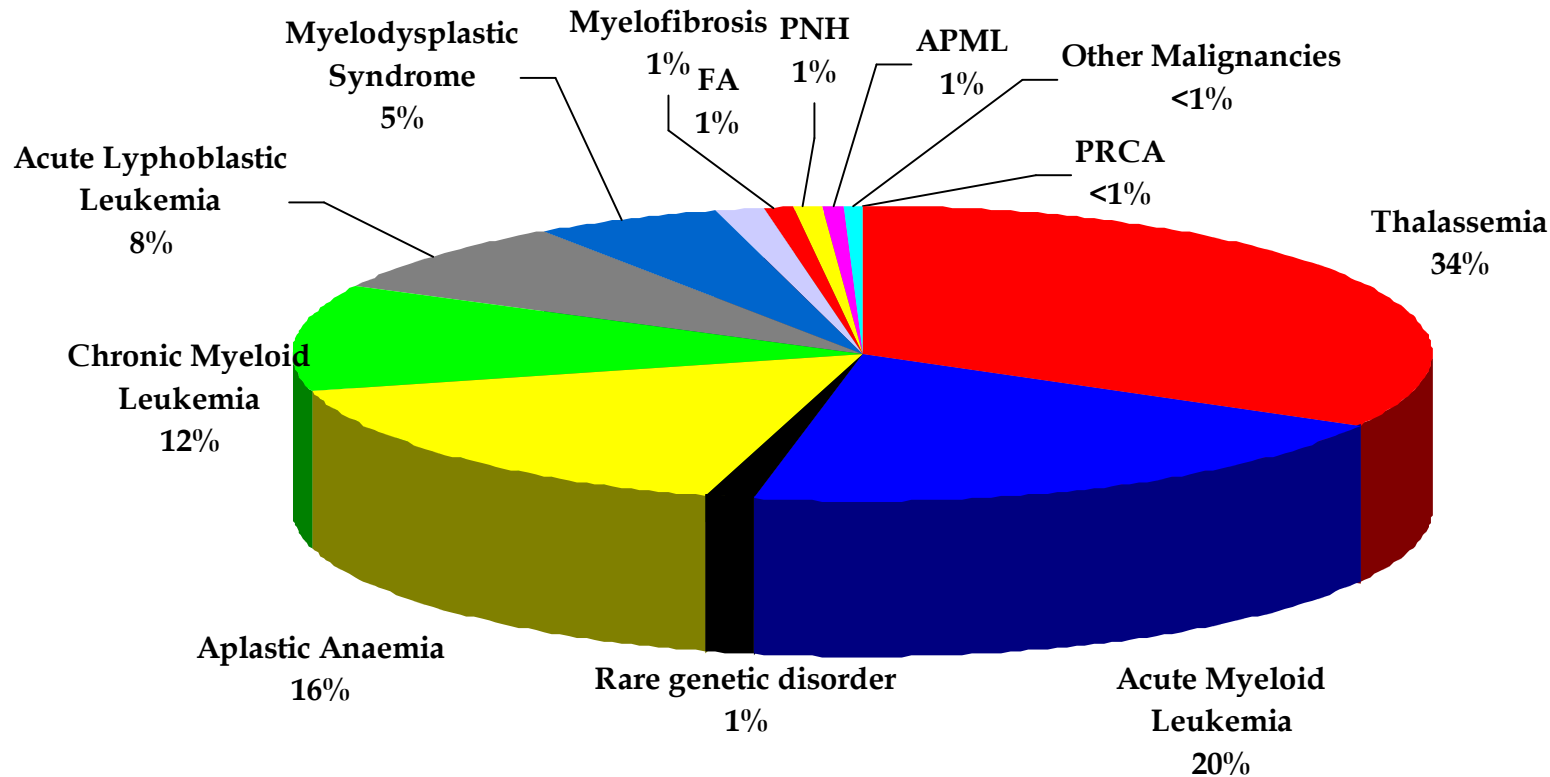
-Matched unrelated (since 2008) : Avg cost – US \$ 50-100,000

-Haplo identical (since 2006) : Avg cost – US \$ 20-50,000

INDICATIONS FOR BMT

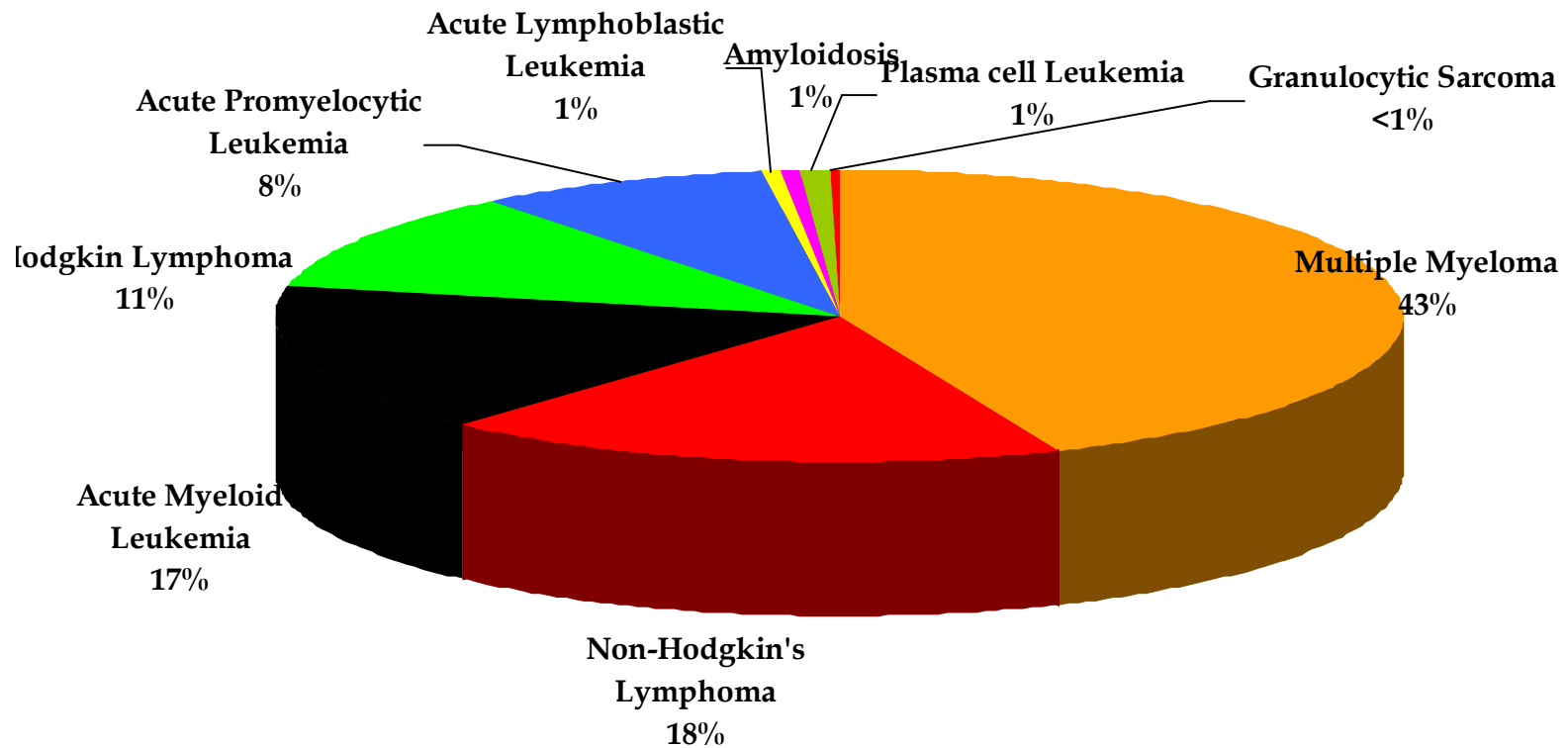
CMC, Vellore (Oct 1986 - Dec 2010)

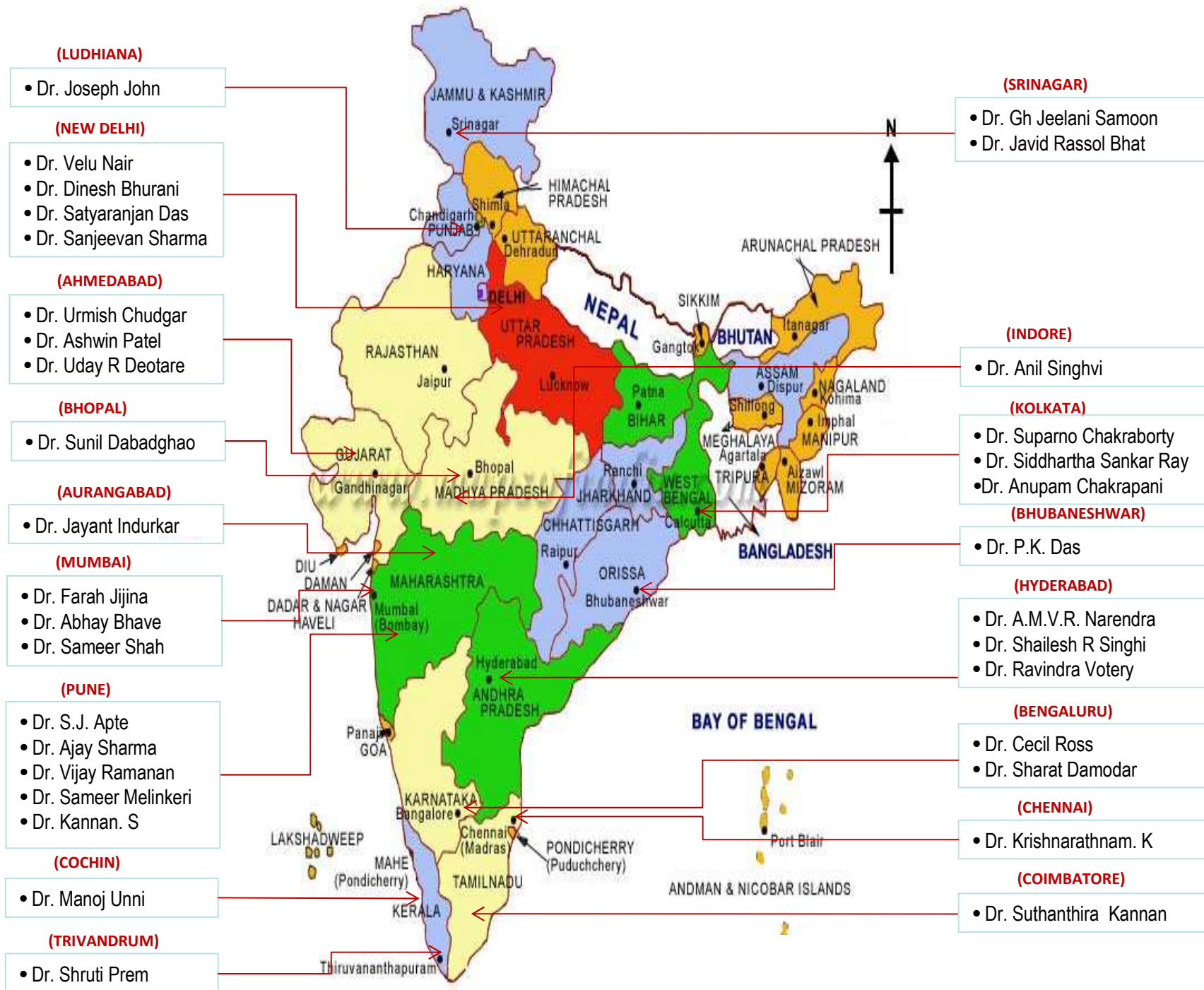
Allogenic transplant (n=1004)



(Diamond Blackfan-3
 Severe Combined Immuno Deficiency-3
 Wiscott Aldrich Syndrome-4
 Dyskeratosis congenita-1
 Osteopetrosis-1
 Adrenoleukodystrophy-1
 Kostmann Syndrome-1
 Congenital Sideroblastic anaemia-1)

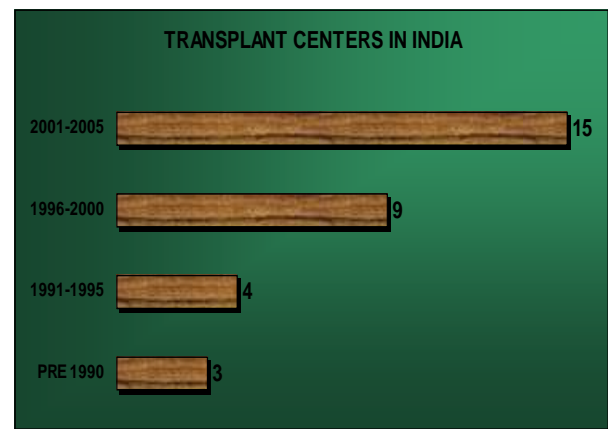
INDICATIONS FOR BMT
CMC, Vellore (Oct 1986 - Dec 2010)
Autologous Transplant (n=306)





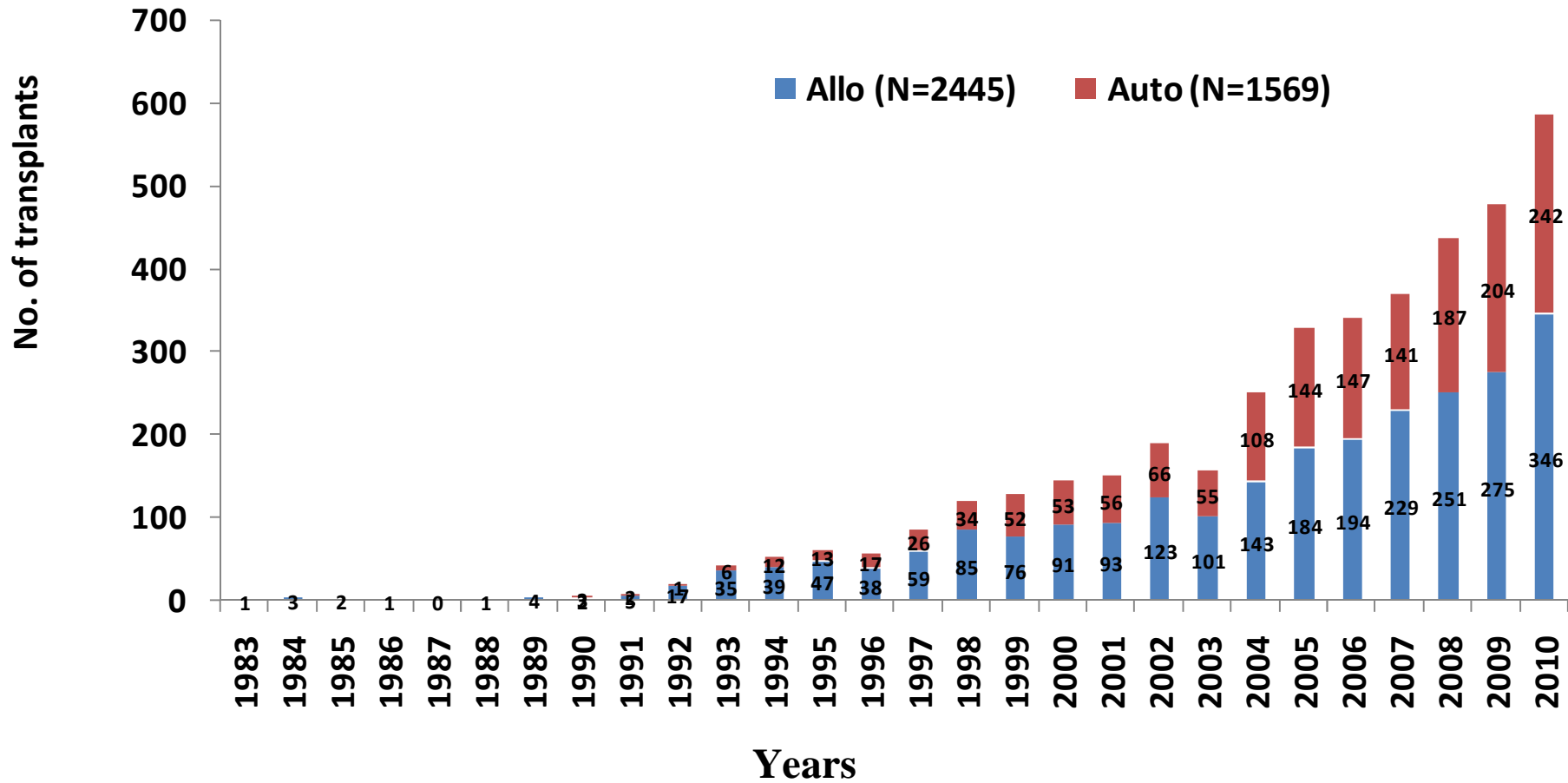
INDIA

Stem Cell Transplant Centers in India - 2011



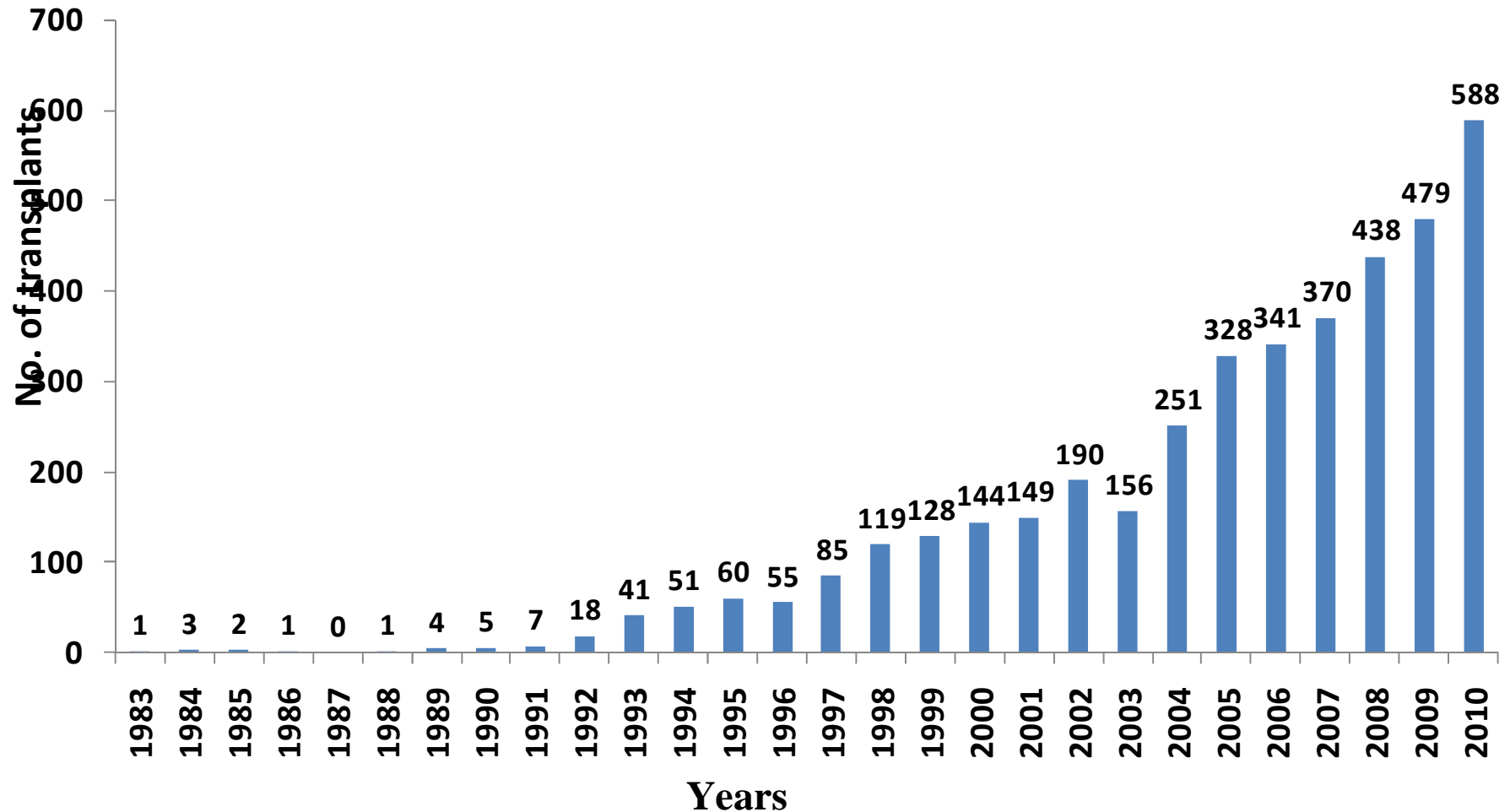
INDIAN STEM CELL TRANSPLANT REGISTRY

Number of Transplants – India (N=4015)

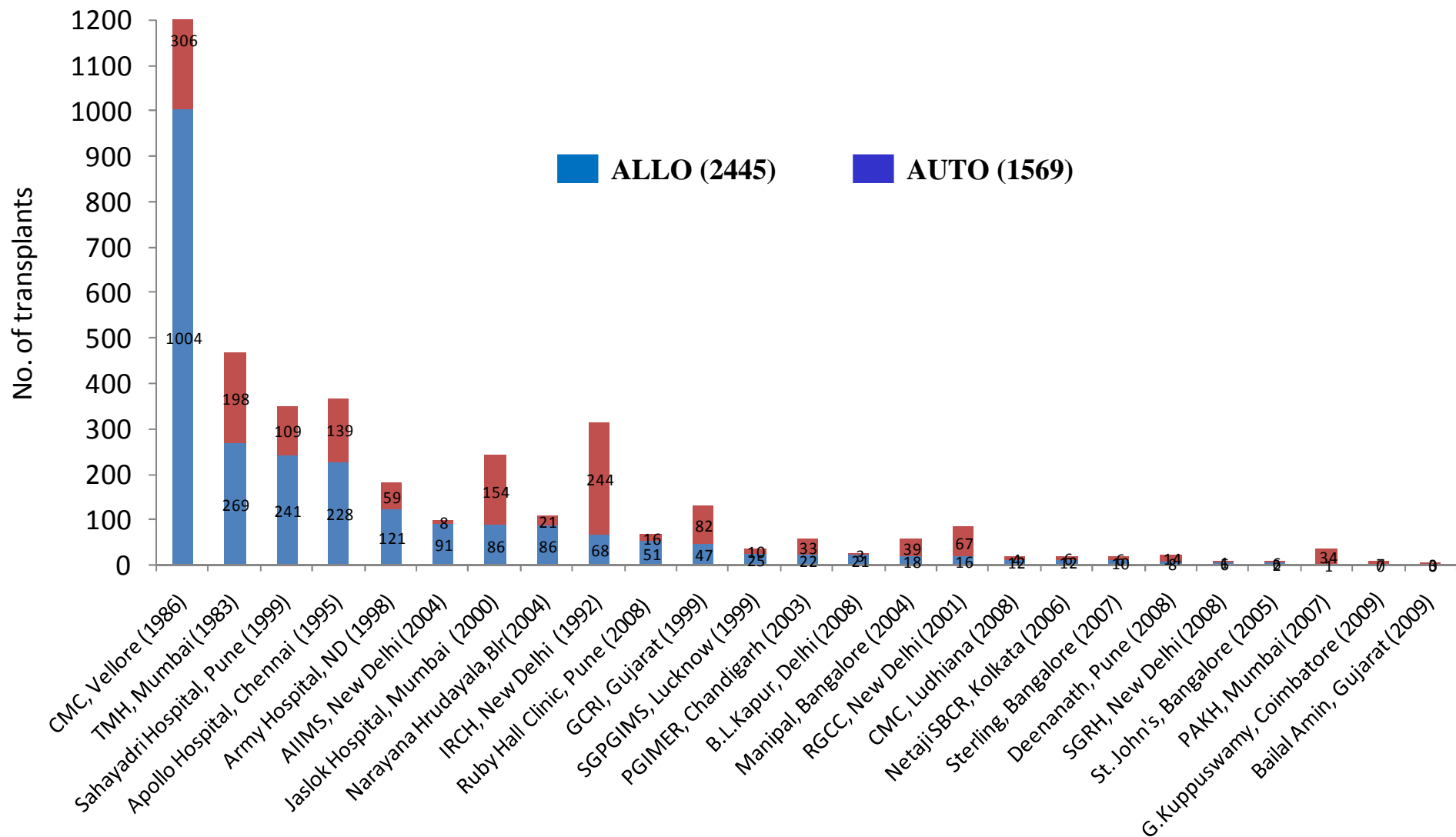


INDIAN STEM CELL TRANSPLANT REGISTRY

Number of Transplants – India (N=4015)



INDIAN STEM CELL TRANSPLANT REGISTRY



Starting a HCT program – A perspective from India

Possible to establish a state of the art facility for SCT if there are the

-Right people

-Strong commitment

-Supportive institutional environment

-Disseminate expertise to the rest of the country

Our team

Physicians: 6

Scientists: 4

Registrars: 15

Research Fellows: 20

Nurses: 22

Transplant / Research coordinators