

FIRST
REPORT OF THE
NATIONAL TRANSPLANT REGISTRY
2004

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August 2005
© National Transplant Registry, Malaysia

ISSN 1823-5719

Published by:

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FOREWORD

We are pleased to launch the first report of the National Transplant Registry (NTR). The Registry was formed in November 2003 with the primary aim of establishing a national audit to analyse and understand the demography and outcomes in the complicated field of transplantation. This first report has been made possible by the dedication, hard work and support from the various transplant source providers and data management team. Working in close collaboration with the Clinical Research Centre the NTR has made encouraging progress since its recent formation. We would like to thank the participating centres for their cooperation.

Currently the Registry collects data from all centres performing organ and tissue transplantation in this country. Heart, blood and marrow transplantation data is now reported online. It is our aim that, in future, data from all the other transplantation services namely cornea, liver and kidney may also have an online data reporting system.

The National Transplant Registry will be an on-going evaluation of the scientific and clinical status of organ and tissue transplantation in Malaysia. The amount of data will continue to expand. We look forward to the continued support from everyone involved in the transplantation service. By analysing all available data and information, we are confident we can improve the results of transplantation in this country.

Thank you.

Tan Sri Dato' Dr. Yahya Awang
Chairperson
NTR

Dato' Dr. Zaki Morad
Co-Chair
NTR

Dr. Lela Yasmin Mansor
Co-Chair
NTR

ACKNOWLEDGEMENTS

The National Transplant Registry would like to record its appreciation to everyone who have helped make this report possible.

We would especially like to thank the following:

- Our source data providers who are the transplant surgeons, physicians and staff of all organ and tissue transplant centres and transplant follow up centres from the government, university and private sectors, without whose commitment, hard work and timely data submission there will be no report
- National Renal Registry for sharing the renal transplant data
- Clinical Research Centre, Hospital Kuala Lumpur
- Ministry of Health
- The members of the various expert panels for their expertise and for devoting their valuable time and effort in preparing and writing the various chapters
- And not forgetting our supporters from the industry and other well-wishers:

Norvartis
Roche
Janssen-Cilag
Ain Medicare
Institut Jantung Negara Foundation

PARTICIPATING CENTRES

Discipline: Blood and Marrow Transplant

1. Division of Haematology, Department of Medicine, University of Malaya Medical Centre
2. Haematology Department, Hospital Kuala Lumpur
3. Haematology Department, Subang Jaya Medical Centre
4. Maybank BMT Centre, Hospital Universiti Kebangsaan Malaysia
5. Oncology-Haematology Department, Gleneagles Medical Centre, Penang
6. Oncology-Haematology Department, Lam Wah Ee Hospital
7. Paediatric BMT Unit, Department of Paediatrics, University of Malaya Medical Centre
8. Paediatric BMT Unit, Institute of Paediatrics, Hospital Kuala Lumpur
9. Paediatric BMT Unit, Subang Jaya Medical Centre

Discipline: Cornea Transplant

1. Hope Eye Centre, Gleneagles Intan Medical Centre Kuala Lumpur
2. Ophthalmology Department, 94 Hospital Angkatan Tentera Kem Terendak
3. Ophthalmology Department, Gleneagles Medical Centre
4. Ophthalmology Department, Hospital Alor Setar
5. Ophthalmology Department, Hospital Batu Pahat
6. Ophthalmology Department, Hospital Bukit Mertajam
7. Ophthalmology Department, Hospital Ipoh
8. Ophthalmology Department, Hospital Kajang
9. Ophthalmology Department, Hospital Kangar
10. Ophthalmology Department, Hospital Kota Bharu
11. Ophthalmology Department, Hospital Kuala Lipis
12. Ophthalmology Department, Hospital Kuala Lumpur
13. Ophthalmology Department, Hospital Kuala Pilah
14. Ophthalmology Department, Hospital Kuala Terengganu
15. Ophthalmology Department, Hospital Melaka
16. Ophthalmology Department, Hospital Mentakab
17. Ophthalmology Department, Hospital Miri
18. Ophthalmology Department, Hospital Pakar Sultanah Fatimah
19. Ophthalmology Department, Hospital Pantai Indah
20. Ophthalmology Department, Hospital Pulau Pinang
21. Ophthalmology Department, Hospital Putrajaya
22. Ophthalmology Department, Hospital Queen Elizabeth, Kota Kinabalu
23. Ophthalmology Department, Hospital Sandakan (Duchess of Kent)
24. Ophthalmology Department, Hospital Selayang
25. Ophthalmology Department, Hospital Seremban
26. Ophthalmology Department, Hospital Sibul
27. Ophthalmology Department, Hospital Sultan Ismail
28. Ophthalmology Department, Hospital Sultanah Aminah
29. Ophthalmology Department, Hospital Sungai Petani
30. Ophthalmology Department, Hospital Taiping
31. Ophthalmology Department, Hospital Tawau
32. Ophthalmology Department, Hospital Teluk Intan
33. Ophthalmology Department, Hospital Tengku Ampuan Afzan
34. Ophthalmology Department, Hospital Tengku Ampuan Rahimah

35. Ophthalmology Department, Hospital Umum Sarawak
36. Ophthalmology Department, Hospital Universiti Kebangsaan Malaysia
37. Ophthalmology Department, Hospital Universiti Sains Malaysia
38. Ophthalmology Department, Sri Kota Medical Centre
39. Ophthalmology Department, University of Malaya Medical Centre
40. Ophthalmology Unit, Department of Surgery, Universiti Putra Malaysia
41. Optimax Eye Specialist Centre
42. Tan Eye Specialist Centre, Sunway Medical Centre
43. Tun Hussein Onn National Eye Hospital

Discipline: Heart and Lung Transplant

1. Cardiothoracic Department, Institut Jantung Negara
2. Institut Perubatan Respiratori, Hospital Kuala Lumpur

Discipline: Heart Valve Transplant

1. Cardiovascular Tissue Bank, Department of Cardiothoracic Surgery, Institut Jantung Negara

Discipline: Liver Transplant

1. Department of Paediatrics, University of Malaya Medical Centre
2. Hepatobiliary Department, Hospital Selayang
3. Institute of Paediatrics Surgery Department, Hospital Kuala Lumpur
4. Subang Jaya Medical Centre

Discipline: Renal Transplant

1. 96 Hospital Angkatan Tentera Kem Lumut
2. Ampang Puteri Specialist Hospital
3. Assunta Hospital
4. C.S. Loo Kidney & Medical Specialist Centre
5. Institute of Paediatrics, Hospital Kuala Lumpur
6. Mahkota Medical Centre
7. Nephrology Clinic, Hospital Melaka
8. Nephrology Clinic, Hospital Kangar
9. Nephrology Clinic, Hospital Labuan
10. Nephrology Department, Hospital Selayang
11. Nephrology Department, University of Malaya Medical Centre
12. Paediatric Transplant Unit, Hospital Sultanah Aminah
13. Renal Care, Ipoh Specialist Hospital
14. Renal Dialysis Centre Sdn. Bhd, Gleneagles Intan Medical Centre KL
15. Renal Transplant Clinic, Damai Medical & Heart Clinic
16. Renal Transplant Clinic, Hospital Alor Setar
17. Renal Transplant Clinic, Hospital Batu Pahat
18. Renal Transplant Clinic, Hospital Bintulu
19. Renal Transplant Clinic, Hospital Dungun

20. Renal Transplant Clinic, Hospital Kemaman
21. Renal Transplant Clinic, Hospital Kluang
22. Renal Transplant Clinic, Hospital Kota Bharu
23. Renal Transplant Clinic, Hospital Mentakab
24. Renal Transplant Clinic, Hospital Miri
25. Renal Transplant Clinic, Hospital Pakar Sultanah Fatimah, Muar
26. Renal Transplant Clinic, Hospital Pontian
27. Renal Transplant Clinic, Hospital Pulau Pinang
28. Renal Transplant Clinic, Hospital Queen Elizabeth, Kota Kinabalu
29. Renal Transplant Clinic, Hospital Sandakan (Duchess of Kent)
30. Renal Transplant Clinic, Hospital Segamat
31. Renal Transplant Clinic, Hospital Seremban
32. Renal Transplant Clinic, Hospital Sibu
33. Renal Transplant Clinic, Hospital Sultan Ismail Pandan
34. Renal Transplant Clinic, Hospital Sultanah Aminah
35. Renal Transplant Clinic, Hospital Taiping
36. Renal Transplant Clinic, Hospital Tanah Merah
37. Renal Transplant Clinic, Hospital Tawau
38. Renal Transplant Clinic, Hospital Teluk Intan
39. Renal Transplant Clinic, Hospital Tengku Ampuan Afzan
40. Renal Transplant Clinic, Hospital Tengku Ampuan Rahimah
41. Renal Transplant Clinic, Hospital Umum Sarawak
42. Renal Transplant Clinic, Hospital Universiti Kebangsaan Malaysia
43. Renal Transplant Clinic, Normah Medical Specialist Centre
44. Renal Transplant Clinic, Pusat Pakar Tawakal Sdn Bhd
45. Renal Transplant Clinic, Sabah Medical Centre
46. Renal Transplant Clinic, Selangor Medical Centre
47. Renal Transplant Clinic, Sri Kota Medical Centre
48. Renal Transplant Unit, Hospital Ipoh
49. Renal Transplant Unit, Hospital Kuala Lumpur
50. Renal Transplant Unit, Hospital Kuala Terengganu
51. Renal Transplant Unit, Hospital Universiti Sains Malaysia
52. Renal Transplant Unit, Klinik Pakar Dialysis (Smartcare Dialysis Centre)
53. Renal Transplant Unit, Pantai Mutiara Hospital
54. Simon Wong Medical & Kidney Clinic, Timberland Medical Centre
55. Subang Jaya Medical Centre
56. Sunway Medical Centre
57. Tan Medical Renal Clinic

Discipline: Bone / Tissue Transplant

1. Department of Orthopaedic Surgery, Hospital Alor Setar
2. Department of Orthopaedic Surgery, Hospital Taiping
3. Department of Orthopaedics & Traumatology, Hospital Kangar
4. Department of Orthopaedic Surgery, University of Malaya Medical Centre
5. Department of Orthopaedics, Hospital Ipoh
6. Department of Orthopaedics, Hospital Kajang
7. Department of Orthopaedics, Hospital Kota Bharu
8. Department of Orthopaedics, Hospital Kuala Terengganu
9. Department of Orthopaedics, Hospital Kuantan
10. Department of Orthopaedics, Hospital Pakar Sultanah Fatimah

11. Department of Orthopaedics, Hospital Pulau Pinang
12. Department of Orthopaedics, Hospital Seberang Jaya
13. Department of Orthopaedics, Hospital Sultanah Aminah
14. Department of Orthopaedics, Hospital Tengku Ampuan Rahimah
15. Department of Orthopaedics, Hospital Umum Sarawak
16. Department of Orthopaedics, Hospital Universiti Sains Malaysia
17. Department of Surgery, Hospital Kota Bharu
18. Institute of Orthopaedics & Traumatology, Hospital Kuala Lumpur
19. Malaysian Institute For Nuclear Technology Research
20. National Tissue Bank, Universiti Sains Malaysia
21. Department of Orthopaedics, Traumatology & Rehabilitation, International Islamic University Malaysia, Kuantan
22. Wan Orthopaedics, Trauma & Sports Injury Centre, Seremban Specialist Hospital

ABOUT THE NATIONAL TRANSPLANT REGISTRY

The National Transplant Registry (NTR) is a Ministry of Health (MOH) supported registry whose aim is to collect information about organ and tissue transplantations in Malaysia. The information allows us to estimate the magnitude of transplant activity in the country. Such information besides being useful to practitioners of transplantation is useful in assisting the MOH, non-governmental organisations, private providers and industry in program planning and evaluation of transplantation services.

The objectives of NTR are to:

1. Determine the frequency and distribution of all types of transplantation activity in Malaysia.
2. Determine the outcomes of transplantation.
3. Determine the factors influencing outcomes of transplantation.
4. Evaluate transplantation services in the country.
5. Stimulate and facilitate research on transplantation and its management.

The NTR receives data on organ / tissue transplantation from 3 main sources:

1. The individual doctors who provide transplantation services, who voluntarily report data to the NTR. Data collection will be from seven main types of transplantation services:
 - Blood and Marrow Transplant
 - Cornea Transplant
 - Heart and Lung Transplant
 - Liver Transplant
 - Renal Transplant
 - Heart Valve Transplant
 - Bone and Tissue Transplant
2. The National Vital Registration system (Jabatan Pendaftaran Negara). Their data is useful for determining or verifying mortality outcomes of transplant patients.
3. Information Documentation Unit of the MOH, which operates the Health Management Information system (HMIS).

SPONSORS OF THE NTR

- Medical Development Division, MOH
- National Transplant Coordinating Committee
- Malaysian Society Of Transplantation
- Clinical Research Centre, Hospital Kuala Lumpur

GOVERNANCE BOARD

The Governance Board is established by the sponsors of the NTR to govern the NTR. Current membership of the Governance Board are as follows:

Name	Representation
Tan Sri Dato' Dr. Yahya Awang Chairperson	Cardiothoracic Consultant, Damansara Specialist Hospital NTR Expert Panel Chairman of Heart / Lung Transplant
Dato' Dr. Zaki Morad Mohd Zaher Co-chair	Head, Department of Nephrology, Hospital Kuala Lumpur NTR Expert Panel Chairman of Renal Transplant
Dr. Fadhillah Zowyah Lela Yasmin Mansor Co-chair	Chairperson, Registry Subcommittee National Transplant Coordinating Committee Ministry Of Health
Dato' Dr. Tan Kai Chah	Hepatobiliary / Liver Transplant Surgeon, Subang Jaya Medical Centre
Dr. Mohd. Raili Hj. Suhaili	Medical Development Division, Ministry of Health
Dr. Tan Chwee Choon	Malaysian Society of Transplantation
Dr. Lim Teck Onn	Clinical Research Centre (CRC), Hospital Kuala Lumpur
Dr. Jamaiah Haniff	Clinical Research Centre (CRC), Hospital Kuala Lumpur
Mr. Rohan Malek	Malaysian Urological Association
Dr. Hooi Lai Seong	Malaysian Society of Nephrology
Mr. Hamdan Leman	Malaysian Society of Thoracic & Cardiovascular Surgeons
Dr. Aizai Azan Abdul Rahim	National Heart Association of Malaysia
Prof. Dr. Abdul Rani Samsudin	Malaysian National Tissue Bank
Dr. Wong Jun Shyan	Ophthalmological Society Of MMA
Datuk Dr. Mohd. Ismail Merican	Malaysian Liver Foundation
Dr. Hamidah Shaban	Malaysian Thoracic Society
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Dr. Gill Satwant Singh	National Kidney Foundation of Malaysia
Dr. Chang Kian Meng	Malaysian Society of Haematology
Dr. Kelvin Lim Lye Hock	Malaysian Association of Oral & Maxillofacial Surgeons
Dr. R T Arasu	Malaysian Dental Association
Dr. Alan Teh Kee Hean	NTR Expert Panel Co-chair of Blood and Marrow Transplant (Adult)
Prof. Dr. Chan Lee Lee	NTR Expert Panel Co-chair of Blood and Marrow Transplant (Paediatric)
Dato' Dr. Zakaria Zahari	NTR Expert Panel Chairman of Liver Transplant
Dr. Shamala Retnasabapathy	NTR Expert Panel Chairman of Cornea Transplant
Dr. Goh Bak Leong	NTR Expert Panel Co-chair of Renal Transplant
Mr. Mohamed Ezani Hj Md. Taib	NTR Expert Panel Co-chair of Heart / Lung Transplant

EXPERT PANEL

NTR has established seven groups of expert panel comprising members of the medical profession and allied health with expert knowledge in the various disciplines:

- Blood and Marrow Transplant
- Cornea Transplant
- Heart and Lung Transplant
- Liver Transplant
- Renal Transplant
- Heart Valve Transplant
- Bone and Tissue Transplant

The role of the expert panel is:

1. To undertake quality control of the clinical registry form and the data dictionary
2. To undertake quality control of the reported data
3. To undertake literature review in the relevant area
4. To interpret the results generated by NTR's statisticians
5. To write the section of the NTR report relevant to the panel expertise
6. To specify the data reporting procedure
7. To facilitate access to source documents for Transplant Registry Unit (TRU) staff to do data verification

List of Expert Panel members for each respective discipline:

Discipline: Blood and Marrow Transplant

Co-Chair (Adult)	Dr. Alan Teh Kee Hean
Co-Chair (Paeds)	Prof. Dr. Chan Lee Lee
Member	Prof. Dr. Cheong Soon Keng
	Dr. Chang Kian Meng
	Dr. Gan Gin Gin @ Gan Shiaw Sze
	Dr. Hishamshah Mohd Ibrahim
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	Prof. Dr. Lin Hai Peng
	Dr. Mahfuzah Mohamed
	Dr. Ng Soo Chin
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	Dr. Vijaya Sangkar

Discipline: Cornea Transplant

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Co-Chair	Dr. Choong Yean Yaw
Member	Dr. Jonathan Choon Siew Cheong
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	Dato' Dr. Veera Ramani
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Discipline: Heart and Lung Transplant

Chairman	Tan Sri Dato' Dr. Yahya Awang
Co-Chair	Mr. Mohamed Ezani Hj Md.Taib
Member	Datin Dr. Aziah Ahmad Mahayiddin
	Dr. Ashari Yunus
	Dr. Aizai Azan Abdul Rahim
	Dato' Dr. David Chew Soon Ping
	Dr. Hamidah Shaban

Discipline: Liver Transplant

Chairman	Dato' Dr. Zakaria Zahari
Member	Dr. Ganesalingam A/L Kanagasabai
	Dr. Goon Hong Kooi
	Dr. Lim Chooi Bee
	Assoc. Prof. Dr. Lee Way Seah
	Dr. Sushila Sivasubramaniam
	Dato' Dr. Tan Kai Chah
	Dr. Tan Soek Siam
	Dr. S Thavaranjitham

Discipline: Renal Transplant

Chairman	Dato' Dr. Zaki Morad Mohd Zaher
Co-Chair	Dr. Goh Bak Leong
Member	Dr. Fan Kin Sing
	Dr. Lily Mushahar
	Mr. Rohan Malek
	Dr. S Prasad Menon
	Prof. Dr. Tan Si Yen

Discipline: Heart Valve Transplant

Chairman	Mr. Hamdan Leman
-----------------	------------------

Discipline: Bone / Tissue Transplant

Chairman	Prof. Dr. Zulmi Wan
Member	Prof. Dr. Abdul Rani Samsudin
	Dr. Badrul Shah Badaruddin
	Dato' Dr. Hasim Mohamad
	Dr. Norimah Yusof
	Dr. Robert Penafort

STAFF OF NATIONAL TRANSPLANT REGISTRY

Clinical Registry Manager Ms. Woo Li Fong

Clinical Registry Coordinator Ms. Leong Wei Chee

SUPPORTING STAFF FROM THE CLINICAL RESEARCH CENTRE

The Clinical Research Centre (CRC) of the Ministry of Health provides technical support for the National Transplant Registry. The clinical epidemiologists provide methodological and epidemiological input while the database is supported on CRC's IT infrastructure.

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Clinical Epidemiologist Dr. Sanjay Rampal

Clinical Epidemiologist Dr. Anita Das

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INTRODUCTION

Organ transplantation is now well established as the best if not the only life saving therapy for patients with end-stage organ failure. It was more than half a century ago that the first successful kidney transplant was performed in Boston in 1954. This was followed by lung transplant (Mississippi) in 1963, liver transplant (Denver) and heart transplant (Cape Town) in 1967. With advances in immunosuppressive therapy and improved surgical techniques the success rate i.e. graft survival at 1 year, 5 years and 10 years post transplant have improved tremendously. Transplant surgery has become commonplace and is being performed on patients who would have been deemed unsuitable for transplant in the past.

Lack of organs remain the major issue globally, with demand exceeding the availability of organs. Other than from brain dead donors, organs are increasingly sourced from living donors (both related and unrelated), the practice of which is wrought with ethical concerns. Use of marginal organs is increasing, with acceptable success rate, including those from non-heart beating donors.

Organ Transplantation Activities in Malaysia

Organ transplantation

The first organ transplant in the country was a living related renal transplant that took place in Hospital Kuala Lumpur on 15th December 1975. This was followed six months later by the first cadaveric renal transplant on 1st June 1976. Since then a total of 1050 kidney transplants have been carried out in Malaysia of which more than 82% of the kidneys were from living related donors (including emotionally related) and the rest from cadaveric donors. Renal transplants have been mainly done in HKL, UMMC (since 1991) and Selayang Hospital (since 2000) with the exception of a few cases in the private sector.

On average about 40 to 60 kidney transplants are done locally annually (2 per million population per year) and this has not changed since the 1980s. On the other hand the number of renal failure patients going on to dialysis therapy has increased from 33 pmp in 1995 to 101 pmp in 2003. Many patients resort to having their transplants done commercially overseas such as in India (commercial living unrelated) or China (commercial cadaveric transplants). Currently there are more than 11,000 patients on the dialysis program nationwide with more than half of them being suitable for renal transplantation. The waiting list grows longer as every year about 2,500 new patients develop end stage renal failure.

Heart transplantation is done exclusively in Institut Jantung Negara (IJN) with the first transplant performed on 18th December 1997. To date 15 heart transplants have been carried out while 31 patients have died while waiting for a suitable donor. Since 2004 IJN together with Institut Perubatan Respiratori (IPR) of the Ministry of Health, has been preparing to perform lung transplantation as well as heart-lung transplant but none has been carried out to date. This is due to the lack of cadaveric organs.

The liver transplant program started in 1995 in Subang Jaya Medical Centre, which only does living donor paediatric liver transplants. Selayang Hospital, which has been designated as a Transplant Hospital, started its liver transplant service in April 2002 with a living related transplant, which was immediately followed by the first cadaveric liver transplant in the country. A total of 61 liver transplants have been done in Malaysia thus far, 51 in SJMC and 10 in Selayang Hospital.

To date there is no pancreas transplant program in the country.

In May 2000 the Hand Team at Selayang Hospital successfully carried out a cadaveric arm and hand transplant between 2 identical twin babies, the donor being brain dead from severe congenital brain abnormality. This transplant was the first of its kind in the world involving young children and created history in Malaysia.

Tissue transplantation

Cornea transplantation in Malaysia dates back to the early 1970's with corneas obtained from Sri Lanka. The LIONS eye bank was established in HKL on 9th May 2000. Today corneal graft surgeries are widely performed by ophthalmologists throughout the country both in the government and private sectors utilising corneas sourced from Sri Lanka or USA (either through the LIONS eye bank or obtained directly) or more recently from an increasing number of local cadaveric donors.

The bone marrow transplant service first started in University Hospital, Kuala Lumpur (UHKL) in 1987, initially for paediatric patients, and later for adults as well. This was followed by bone marrow transplantation in HKL in 1994 and subsequently in HUKM and SJMC. Today haematopoietic stem cells can be harvested from blood as well bone marrow for transplantation.

The National Tissue Bank was established in July 1991 at the School of Medical Sciences, Universiti Sains Malaysia Health Campus, Kubang Kerian, Kelantan. The bank, which was set up in collaboration with the Malaysian Institute for Nuclear Technology Research (MINT) and International Atomic Energy Agency (IAEA), collects, processes, stores and distributes tissues such as bone, skin, and amnion from both human and animal sources, to be used by surgeons nationwide as biomaterial or tissue grafts to replace diseased tissues. There are also bone banks established in HKL and UMMC. Plans are proposed for a larger and centrally located Tissue Bank as the needs for tissue grafts and the volume of tissues donated have increased tremendously in recent years.

The use of cardiovascular tissue homografts has become routine, especially in paediatric cardiac surgery for repair of congenital heart defects. There is an increasing demand for homografts because of growing paediatric cardiac surgery practice. Because of the escalating cost of imported homografts IJN has established a cardiovascular tissue bank since 1995. IJN has successfully retrieved and prepared cardiac homografts that have been implanted in more than a hundred patients.

National Transplant Registry

The evidence suggests that transplant activity is fairly common in the country. However, there has been no centralised register in the past that collects data on these activities. Although individual centres that perform the transplant may have audited their performance and monitored outcomes on their own, this information is not shared with the rest of the transplant community. It is difficult to assess the true situation about the transplant program in Malaysia, in particular survival rate and rate of complications and compare it to the rest of the world. Efforts have been made to monitor the outcomes of renal transplant patients and this is reported annually as part of the National Renal Registry which is maintained by the Malaysian Society of Nephrology. The bone marrow registry has been maintained online since 1999.

Any serious effort to improve transplant services requires information on its occurrence, distribution and outcomes. The National Transplant Registry was established in November 2003 under the aegis of the Malaysian Society of Transplantation in collaboration with CRC, supported by a grant from the Ministry of Health and with financial contributions from various interested parties. The registry collects data from various organ and tissue transplant groups namely Blood and Marrow Transplant, Cornea Transplant, Heart/Lung Transplant, Liver Transplant, Kidney Transplant, Heart Valve Transplant and Bone and Tissue Transplant. The hard work by everyone involved, from source data producers, members of the various expert panel, staff of the registry and CRC have culminated in the publication of this first report. It is hoped that the registry will continue to be maintained.

Dr. Lela Yasmin Mansor
Co-Chair
National Transplant Registry