

FOURTH  
REPORT OF THE  
NATIONAL TRANSPLANT REGISTRY  
2007

Editors  
Hooi LS  
Lela Yasmin Mansor

*With contributions by:*

Alan Teh KH, Chan LL, Shamala R, Choong YY, Michael Law SH, Chandramalar S,  
Mohamed Ezani, David Chew SP, Ashari Yunus, Ganesalingam K, Goh BL, Suzina Sheikh



July 2009  
©National Transplant Registry, Malaysia

ISSN

**Published by:**

National Transplant Registry  
1<sup>st</sup> Floor MMA House  
124, Jalan Pahang  
53000 Kuala Lumpur  
Malaysia

Tel : (603) 4045 5948

Fax : (603) 4044 0613

e-mail : [ntr@acrm.org.my](mailto:ntr@acrm.org.my)

Website: <http://www.mst.org.my>

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## FOREWORD

Organ transplantation has made a slow but steady progress in Malaysia despite the various constraints. The awareness on organ donation and transplantation is certainly much better than it was about a decade ago. The organisational framework and various infrastructure facilities to enhance the development of transplantation have evolved with the setting up of a transplant unit in the Medical Development Division of the Ministry of Health Malaysia. It is thus vital to monitor this progress and development of transplantation in the country objectively through a database of the various activities linked to it.

The National Transplant Registry serves as a national database of the transplantation activity in the country. It was established in 2003 to document the experiences and outcomes of solid organ and tissue transplantation in Malaysia. Collection and analysis of data on the various organ and tissue transplants performed in Malaysia, in a continuing fashion is extremely useful to enhance progress and promote safety in transplantation. The National Transplant Registry is a member of the Association of Clinical Registries, Malaysia (ACRM), which was established in 2005.

The Malaysian Society of Transplantation is pleased to present this 4th Annual Report (2007) containing data from all the transplant programs in Malaysia since 2003. The 4<sup>th</sup> National Transplant Registry Report represents data of the transplantation activity for the year 2007. This report contains the updated statistics and information on the full range of transplant activity, from organ donation to transplantation and post-transplant outcomes such as graft and patient survival. This data is useful for monitoring the trends, progress and outcomes of transplantation in Malaysia.

The information contained in these reports is evidence based and hence highly useful to help develop and enhance the transplant programs in Malaysia. The annual registry reports can be used to formulate policies to address deficiencies and shortfalls in the delivery process so as to allow transplantation to be carried out more efficiently and effectively with improved graft survival and improved quality of life for the recipients. This wealth of information and data can serve to inspire further research on issues of importance to the development of transplantation in the country. The data from the previous registry reports has been referenced in various scientific publications both local and international. It is hoped that the data from the present report will also serve such needs of the scientific community.

The National Transplant Registry is administered and supported by the Malaysian Society of Transplantation since 2005 with professional and technical support from National Clinical Research Centre and the Ministry of Health Malaysia. This year's report as in the past has been prepared by Dr Hooi Lai Seong & Datin Dr Lela Yasmin Mansor with contributions from the various expert panels. I would like to express my gratitude to them for their valuable contributions in preparing, editing & proof reading this report.

I wish to thank all source data producers from the public and private hospitals and university medical centres for collaborating and contributing data to the National Transplant Registry over the years. We look forward to their continued participation, along with that of all centres and organisations active in transplantation in Malaysia.

Special thanks to the members of the expert panels, the Transplant Registry Unit and the Governance Board for their tremendous contributions to the success of this registry.

It is hoped that this registry will evolve with time into a useful warehouse of information and data of the transplantation activity in Malaysia.

Datuk (Mr) Harjit Singh  
President  
Malaysian Society of Transplantation

## **ACKNOWLEDGEMENTS**

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

We would especially like to thank the following:

- Our source data providers that are the transplant surgeons, physicians and staff of all organ and tissue transplant centres and transplant follow up centres from the government, universities 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, Malaysia
- 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 Roche (M) Sdn. Bhd. for their financial contribution to the registry yearly.

## **PARTICIPATING CENTRES**

### **Discipline: Blood and Marrow Transplant**

1. Ampang Puteri Specialist Hospital
2. Division of Haematology, Department of Medicine, University of Malaya Medical Centre
3. Haematology Department, Hospital Ampang
4. Haematology Department, Sime Darby Medical Centre Subang Jaya
5. Haemopoietic Stem Cell Transplant Unit, Hospital Universiti Sains Malaysia
6. Maybank BMT Centre, Hospital Universiti Kebangsaan Malaysia
7. Oncology-Haematology Department, Gleneagles Medical Centre, Penang
8. Oncology-Haematology Department, Lam Wah Ee Hospital
9. Paediatric BMT Unit, Department of Paediatrics, University of Malaya Medical Centre
10. Paediatric BMT Unit, Institute of Paediatrics, Hospital Kuala Lumpur
11. Paediatric BMT Unit, Subang Jaya Medical Centre

### **Discipline: Bone and Tissue Transplant**

1. Bone Bank, Hospital Kuala Lumpur
2. Bone Bank, University of Malaya Medical Centre
3. Department of Orthopaedic & Traumatology, Hospital Kangar
4. Department of Orthopaedic Surgery, Hospital Sultanah Bahiyah
5. Department of Orthopaedic Surgery, Hospital Taiping
6. Department of Orthopaedic Surgery, University of Malaya Medical Centre
7. Department of Orthopaedics, Hospital Ipoh
8. Department of Orthopaedics, Hospital Kajang
9. Department of Orthopaedics, Hospital Kuantan
10. Department of Orthopaedics, Hospital Pulau Pinang
11. Department of Orthopaedics, Hospital Raja Perempuan Zainab II
12. Department of Orthopaedics, Hospital Seberang Jaya
13. Department of Orthopaedics, Hospital Sultanah Aminah
14. Department of Orthopaedics, Hospital Sultanah Nur Zahirah
15. Department of Orthopaedics, Hospital Tengku Ampuan Rahimah
16. Department of Orthopaedics, Hospital Universiti Sains Malaysia
17. Department of Orthopaedics, Sarawak General Hospital
18. Department of Orthopaedics, Sultanah Fatimah Specialist Hospital
19. Department of Orthopaedics, Traumatology and Rehabilitation, International Islamic University Malaysia
20. Department of Surgery, Hospital Raja Perempuan Zainab II
21. Hospital Fatimah, Ipoh
22. Institute of Orthopaedic & Traumatology, Hospital Kuala Lumpur
23. Island Hospital, Penang
24. Kota Bharu Medical Centre
25. Malaysian Nuclear Agency
26. National Tissue Bank, Universiti Sains Malaysia
27. Normah Medical Specialist Centre, Kuching
28. Ophthalmology Department, Hospital Kuala Lumpur
29. Ophthalmology Department, Hospital Sultanah Bahiyah
30. Ophthalmology Department, Hospital Sungai Buloh
31. Ophthalmology Department, Hospital Teluk Intan

**Discipline: Bone and Tissue Transplant**

32. Ophthalmology Department, Hospital Tengku Ampuan Afzan
33. Ophthalmology Department, Hospital Tengku Ampuan Rahimah
34. Ophthalmology Department, Hospital Universiti Sains Malaysia
35. Ophthalmology Department, Sri Kota Medical Centre
36. Timberland Medical Centre, Kuching
37. Wan Orthopaedic, Trauma & Sports Injury Centre, Seremban Specialist Hospital

**Discipline: Cornea Transplant**

1. Eye Clinic, Mahkota Medical Centre
2. Hope Eye Centre, Gleneagles Intan Medical Centre, Kuala Lumpur
3. International Specialist Eye Centre, Kuala Lumpur
4. K.C. Yeo Eye Specialist Centre, Melaka
5. Ophthalmology Department, 94 Hospital Angkatan Tentera Kem Terendak
6. Ophthalmology Department, Gleneagles Medical Centre, Penang
7. Ophthalmology Department, Hospital Batu Pahat
8. Ophthalmology Department, Hospital Bukit Mertajam
9. Ophthalmology Department, Hospital Duchess of Kent
10. Ophthalmology Department, Hospital Ipoh
11. Ophthalmology Department, Hospital Kangar
12. Ophthalmology Department, Hospital Kuala Lipis
13. Ophthalmology Department, Hospital Kuala Lumpur
14. Ophthalmology Department, Hospital Kuala Pilah
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 Raja Perempuan Zainab II
24. Ophthalmology Department, Hospital Selayang
25. Ophthalmology Department, Hospital Sibul
26. Ophthalmology Department, Hospital Sultan Ismail Pandan
27. Ophthalmology Department, Hospital Sultanah Aminah
28. Ophthalmology Department, Hospital Sultanah Bahiyah
29. Ophthalmology Department, Hospital Sultanah Nur Zahirah
30. Ophthalmology Department, Hospital Sungai Buloh
31. Ophthalmology Department, Hospital Sungai Petani
32. Ophthalmology Department, Hospital Taiping
33. Ophthalmology Department, Hospital Tawau
34. Ophthalmology Department, Hospital Teluk Intan
35. Ophthalmology Department, Hospital Tengku Ampuan Afzan
36. Ophthalmology Department, Hospital Tengku Ampuan Rahimah
37. Ophthalmology Department, Hospital Tuanku Ja'afar
38. Ophthalmology Department, Hospital Umum Sarawak
39. Ophthalmology Department, Hospital Universiti Kebangsaan Malaysia
40. Ophthalmology Department, Hospital Universiti Sains Malaysia

**Discipline: Cornea Transplant**

41. Ophthalmology Department, Sri Kota Medical Centre
42. Ophthalmology Department, University of Malaya Medical Centre
43. Pusat Pakar Mata Centre For Sight, PJ
44. Puteri Specialist Hospital, Johor Bahru
45. Sunway Medical Centre
46. Tan Eye Specialist Centre, Sunway Medical Centre
47. 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. Paediatric Hepatology Unit, Hospital Selayang
4. Institute of Paediatrics, Hospital Kuala Lumpur
5. Subang Jaya Medical Centre

**Discipline: Renal Transplant**

1. 96 Hospital Angkatan Tentera Kem Lumut
2. C. S. Loo Kidney & Medical Specialist Centre
3. Fan Medical Renal Clinic
4. Nephrology Department, Hospital Batu Pahat
5. Nephrology Department, Hospital Bintulu
6. Nephrology Department, Hospital Duchess of Kent
7. Nephrology Department, Hospital Ipoh
8. Nephrology Department, Hospital Kangar
9. Nephrology Department, Hospital Kemaman
10. Nephrology Department, Hospital Kluang
11. Nephrology Department, Hospital Kuala Lumpur
12. Nephrology Department, Hospital Labuan
13. Nephrology Department, Hospital Melaka
14. Nephrology Department, Hospital Miri
15. Nephrology Department, Hospital Pakar Sultanah Fatimah
16. Nephrology Department, Hospital Pontian
17. Nephrology Department, Hospital Pulau Pinang
18. Nephrology Department, Hospital Queen Elizabeth



**Discipline: Renal Transplant**

19. Nephrology Department, Hospital Raja Perempuan Zainab II
20. Nephrology Department, Hospital Segamat
21. Nephrology Department, Hospital Selayang
22. Nephrology Department, Hospital Serdang
23. Nephrology Department, Hospital Sibul
24. Nephrology Department, Hospital Sultan Ismail Pandan
25. Nephrology Department, Hospital Sultanah Aminah
26. Nephrology Department, Hospital Sultanah Bahiyah
27. Nephrology Department, Hospital Sultanah Nur Zahirah
28. Nephrology Department, Hospital Taiping
29. Nephrology Department, Hospital Tawau
30. Nephrology Department, Hospital Tengku Ampuan Afzan
31. Nephrology Department, Hospital Tengku Ampuan Rahimah
32. Nephrology Department, Hospital Tuanku Ja'afar
33. Nephrology Department, Sarawak General Hospital
34. Nephrology Department, UKM Hospital
35. Nephrology Department, University Malaya Medical Centre
36. Nephrology Department, USM Hospital
37. Nephrology Unit, Ampang Puteri Specialist Hospital
38. Nephrology Unit, Sime Darby Medical Centre Subang Jaya
39. Nephrology Unit, Sunway Medical Centre
40. Paediatric Renal Transplant Clinic, Hospital Kuala Lumpur
41. Paediatric Ward, Hospital Sultan Ismail Pandan
42. Renal Transplant Clinic, Sabah Medical Centre
43. Renal Transplant Clinic, Selangor Medical Centre
44. Renal Transplant Clinic, Sri Kota Medical Centre
45. Renal Transplant Unit, Hospital Pantai Mutiara
46. Simon Wong Medical & Kidney Clinic, Timberland Medical Centre
47. Tan Medical Renal Clinic
48. Wee Kidney & Medical Specialist Clinic

## **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 transplantation practitioners, can be used 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).

## **NTR SPONSORS**

- 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 NTR sponsors to govern the NTR. Current members of the Governance Board are as follows:

<b>Name</b>	<b>Representation</b>
Tan Sri Dato' Dr Yahya Awang <b>Chairperson</b>	Cardiothoracic Consultant, Damansara Specialist Hospital NTR Expert Panel Chairman of Heart / Lung Transplant
Dato' Dr Zaki Morad Mohd Zaher <b>Co-chair</b>	Head, Department of Nephrology, Hospital Kuala Lumpur NTR Expert Panel Chairman of Renal Transplant
Datin Dr Fadhilah Zowyah Lela Yasmin Mansor <b>Co-chair</b>	Chairperson, Registry Subcommittee National Transplant Coordinating Committee Ministry Of Health
Dr Teng Seng Chong	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 Jamaiyah Haniff	Clinical Research Centre (CRC), Hospital Kuala Lumpur
Mr Rohan Malek	Malaysian Urological Association
Dr Hooi Lai Seong	Malaysian Society of Nephrology
Dr Aizai Azan Abdul Rahim	National Heart Association of Malaysia
Dr Suzina Sheikh Ab. Hamid	Malaysian National Tissue Bank
Dr Wong Jun Shyan	Ophthalmological Society Of MMA
Tan Sri Datuk Dr Mohd. Ismail Merican	Malaysian Liver Foundation
Dr Hamidah Shaban	Malaysian Thoracic Society
Dr Wan Faisham	Malaysian Orthopaedic Association
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 Chairperson 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 / Heart Valve Transplant
Prof Zulmi Wan	NTR Expert Panel Chairman of Bone and Tissue Transplant

## EXPERT PANEL

NTR has established seven groups of Expert Panel comprising members of the medical profession and allied health with expert knowledge in these 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**

<b>Co-chair (Adult)</b>	Dr Alan Teh Kee Hean
<b>Co-chair (Paeds)</b>	Prof Dr Chan Lee Lee
<b>Members</b>	Prof Dr Cheong Soon Keng
	Dr Chang Kian Meng
	Dr Gan Gin Gin @ Gan Shiao Sze
	Dr Hishamshah Mohd Ibrahim
	Dr Jameela Sathar
	Prof Dr Lin Hai Peng
	Dr Mahfuzah Mohamed
	Dr Ng Soo Chin
	Dr S Visalachy Purushothaman
	Dr Vijaya Sangkar

### **Discipline: Cornea Transplant**

<b>Chairperson</b>	Dr Shamala Retnasabapathy
<b>Co-chair</b>	Dr Choong Yean Yaw
<b>Members</b>	Dato' Dr Veera Ramani
	Dr Jonathan Choon Siew Cheong
	Dr Chuah Kay Leong
	Dr Michael Law Sie Haur
	Dr Mariam Ismail

	Assoc Prof Dr SC Reddy
	Dr Sahimi Sulaiman
	Dr U Thiageswari
	Dr Chandramalar Santhirathelagan

**Discipline: Heart and Lung Transplant**

<b>Chairman</b>	Tan Sri Dato' Dr Yahya Awang
<b>Co-chair</b>	Mr Mohamed Ezani Hj Md. Taib
<b>Members</b>	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**

<b>Chairman</b>	Dato' Dr Zakaria Zahari
<b>Members</b>	Dr Ganesalingam A/L Kanagasabai
	Dr Goon Hong Kooi
	Dr Lim Chooi Bee
	Prof Dr Lee Way Seah
	Dr Sushila Sivasubramaniam
	Dr Tan Soek Siam
	Dr S Thavaranjitham

**Discipline: Renal Transplant**

<b>Chairman</b>	Dato' Dr Zaki Morad Mohd Zaher
<b>Co-chair</b>	Dr Goh Bak Leong
<b>Members</b>	Dr Fan Kin Sing
	Dr Lily Mushahar
	Mr Rohan Malek
	Dr S Prasad Menon
	Prof Dr Tan Si Yen

**Discipline: Heart Valve Transplant**

<b>Chairman</b>	Mr Mohamed Ezani Hj Md. Taib
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**Discipline: Bone and Tissue Transplant**

<b>Chairman</b>	Prof Dr Zulmi Wan
<b>Members</b>	Dr Suzina Sheikh Ab Hamid
	Dr Badrul Shah Badaruddin
	Dato' Dr Hasim Mohamad
	Dr Norimah Yusof
	Dr Robert Penafort

## **NTR STAFF**

Clinical Registry Coordinator      Ms Leong Wei Chee

Clinical Research Assistant      Mr Ahmad Fairuz Putra Bin Ahmad Zulkifli

## **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.

Clinical Epidemiologist      Dr Jamaiah Haniff

Information & Communication  
Technology (ICT) Manager      Ms Celine Tsai Pao Chien

Network Administrator      Mr Kevin Ng Hong Heng

Assistant Network Administrator      Mr Adlan Ab. Rahman

Database Administrator      Ms Lim Jie Ying

Desktop publisher      Ms Azizah Alimat

## **BIostatistical CONSULTANTS**

Consultant Biostatistician      Dr Hoo Ling Ping

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