



# 6<sup>th</sup>

## REPORT OF THE NATIONAL TRANSPLANT REGISTRY 2009

**Editors:**  
**Hooi LS**  
**Lela Yasmin Mansor**

With contributions by:

Alan Teh K H, Chan L L, Shamala R, Chandramalar S, Mohamed Ezani,  
David Chew S P, Ashari Yunus, Ganesalingam K, Goh B L, Suzina Sheikh



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**Disclaimer**

There is a potential that data for previous years printed in this report are different from what were printed in previous reports. This is because analysis for this report is based on the latest dataset in the web which may have been updated by SDP.

## Foreword

We, at The Malaysian Society of Transplantation, are both pleased and delighted to present the 6<sup>th</sup> National Transplant Registry Report which summarises the cumulative data related to organ donation & transplantation activities in Malaysia up to 31<sup>st</sup> December 2009. Though the data is collected, compiled and presented in a 'retrospective' manner, it nevertheless provides a useful means to monitor trends in organ donation and transplantation over the years. The information generated is highly relevant and essential to plan the future development of transplantation in this country.

The report includes chapters on kidney, liver, heart and lung transplantation, further chapters on cornea, bone, blood and marrow transplantation and a chapter on cadaveric organ & tissue donation. Each chapter outlines and presents epidemiological information, the types of immunosuppression and the outcomes for each of the different transplant modalities.

The National Transplant Registry Report is a product of the hard work, commitment and dedication of its editors, Dr Hooi Lai Seong & Datin (Dr) Fadhilah Zowyah Lela Yasmin Mansor, the members of the steering committee, the expert panels, the source data providers and the Registry coordinator, Ms Leong Wei Chee. Unfortunately Ms Leong will be resigning from the National Transplant Registry in December 2011 for personal reasons. Her resignation will bring to a close her remarkable career with the Registry for almost 8 years. The Registry wishes to acknowledge her enormous contribution to its success.

The editors have devoted much time and energies to the preparation of the report, and to ensure uniformity in the style of presentation of each of the organ / tissue specific reports. The expert panels, representing each area of clinical transplantation, completed their tasks with great precision and professionalism. I am indeed indebted to each and every individual who has contributed, in one way or another, towards the successful completion of the 6<sup>th</sup> NTR Report.

We are extremely grateful to the Ministry of Health Malaysia and the National Clinical Research Centre for their invaluable help and support. Without their assistance it would simply not be possible to maintain the registry and I sincerely hope they will continue to support the efforts of the Malaysian Society of Transplantation in maintaining this registry. It is hoped that with the continued cooperation and participation of all parties involved, it will be possible to ensure that the data remains available and relevant for studies in the future. It is thus vital to ensure that the quality and integrity of the database is maintained and supported in the long term. Efforts are continuing to develop a real-time web-based registry which will be able to seamlessly integrate the collection and tabulation of data from the various transplant related activities in the country in a much more rapid and efficient manner.

The data in the registry is copyrighted, but may be used in scientific and/or research publications; in compliance with current national and international guidelines on research ethics and data handling including the 'Vancouver Guidelines on Responsible Authorship'.

The 6<sup>th</sup> NTR Report is dedicated to the commitment of all individuals and source data providers throughout Malaysia. I wish to thank them all for their continued support and contributions to the successful release of this report. It would not have been possible to sustain the activities of the registry without the support of each and every individual including our corporate sponsors Roche & Janssen. We sincerely hope that you will find this report both informative and useful.

**Datuk (Mr) Harjit Singh MBBS; FRCS Ed; FRCSI**  
**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
- Roche (M) Sdn. Bhd. and Janssen-Cilag for their support in providing sponsorships
- Many others, whose names are not listed here, for their support.

## **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, Universiti Kebangsaan Malaysia Medical Centre
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, Sime Darby Medical Centre Subang Jaya

### **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 Sibu
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. Sime Darby Medical Centre Subang Jaya

**Discipline: Renal Transplant**

1. C. S. Loo Kidney & Medical Specialist Centre
2. Damai Medical & Heart Clinic
3. Fan Medical Renal Clinic
4. Kidney Unit, Assunta Hospital
5. Klinik Dr Choo & Liew
6. Nephrology Clinic (Renal Transplant), Hospital Kuala Lumpur
7. Nephrology Clinic (Renal Transplant), Hospital Kuala Lumpur (Paed)
8. Renal Transplant Clinic, Hospital Batu Pahat
9. Renal Transplant Clinic, Hospital Bintulu
10. Renal Transplant Clinic, Hospital Duchess of Kent
11. Renal Transplant Clinic, Hospital Dungun
12. Renal Transplant Clinic, Hospital Kemaman
13. Renal Transplant Clinic, Hospital Kluang
14. Renal Transplant Clinic, Hospital Labuan
15. Renal Transplant Clinic, Hospital Likas
16. Renal Transplant Clinic, Hospital Melaka
17. Renal Transplant Clinic, Hospital Mersing
18. Renal Transplant Clinic, Hospital Miri

**Discipline: Renal Transplant**

19. Renal Transplant Clinic, Hospital Pakar Sultanah Fatimah
20. Renal Transplant Clinic, Hospital Pantai Penang
21. Renal Transplant Clinic, Hospital Pontian
22. Renal Transplant Clinic, Hospital Pulau Pinang
23. Renal Transplant Clinic, Hospital Queen Elizabeth
24. Renal Transplant Clinic, Hospital Raja Perempuan Zainab II
25. Renal Transplant Clinic, Hospital Raja Permaisuri Bainun
26. Renal Transplant Clinic, Hospital Segamat
27. Renal Transplant Clinic, Hospital Selayang
28. Renal Transplant Clinic, Hospital Serdang
29. Renal Transplant Clinic, Hospital Sibul
30. Renal Transplant Clinic, Hospital Sultan Ismail
31. Renal Transplant Clinic, Hospital Sultanah Aminah
32. Renal Transplant Clinic, Hospital Sultanah Bahiyah
33. Renal Transplant Clinic, Hospital Sultanah Nur Zahirah
34. Renal Transplant Clinic, Hospital Taiping
35. Renal Transplant Clinic, Hospital Tawau
36. Renal Transplant Clinic, Hospital Tengku Ampuan Afzan
37. Renal Transplant Clinic, Hospital Tengku Ampuan Rahimah
38. Renal Transplant Clinic, Hospital Tuanku Ja'afar
39. Renal Transplant Clinic, KPJ Ampang Puteri Specialist Hospital
40. Renal Transplant Clinic, KPJ Selangor Specialist Hospital
41. Renal Transplant Clinic, Normah Medical Specialist Centre
42. Renal Transplant Clinic, Prince Court Medical Centre
43. Renal Transplant Clinic, Pusat Perubatan Universiti Kebangsaan Malaysia
44. Renal Transplant Clinic, Renal Care (Ipoh Specialist Hospital)
45. Renal Transplant Clinic, Sabah Medical Centre
46. Renal Transplant Clinic, Sarawak General Hospital
47. Renal Transplant Clinic, Selangor Medical Centre
48. Renal Transplant Clinic, Sime Darby Medical Centre Subang Jaya
49. Renal Transplant Clinic, Sri Kota Medical Centre
50. Renal Transplant Clinic, Sunway Medical Centre
51. Renal Transplant Clinic, Universiti Sains Malaysia Hospital
52. Renal Transplant Clinic, University Malaya Medical Centre
53. Renal Transplant Clinic (Paed), Ward 8C&D, Hospital Sultan Ismail
54. Simon Wong Medical & Kidney Clinic, Timberland Medical Centre
55. Smartcare Dialysis Centre, Subang Jaya
56. Tan Medical Renal Clinic
57. 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 to govern the NTR and the terms of reference are as follows:

1. Provide the necessary leadership and direction for the National Transplant Registry.
2. Ensure that the vision, objectives and goals of the National Transplant Registry are clearly established and that strategies are in place for achieving them.
3. Establish policies and procedures for the proper functioning of the National Transplant Registry.
4. Seek input and feedback from all stakeholders and end users with regards to their expectations and the performance of the National Transplant Registry.
5. Secure funding and financial support for the National Transplant Registry.
6. Galvanize the commitment of all interested parties to the National Transplant Registry.
7. Receive and review the annual report from the steering committee.

Current members of the Governance Board are as follows:

### **Chairperson**

Dato' Dr Zaki Morad Mohd Zaher

### **Vice Chairperson**

Datin Dr Fadhillah Zowyah Lela Yasmin Mansor

### **Members:**

Datuk (Mr) Harjit Singh  
Dr Teng Seng Chong

Malaysian Society of Transplantation  
Medical Development Division, Ministry of Health

Tan Sri Dato' Seri Dr Mohd. Ismail Merican

Malaysian Liver Foundation

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 Abdul Malik Hussein

Malaysian Orthopaedic Association

Dr Tan Chwee Choon

National Kidney Foundation of Malaysia

Dato' Dr Chang Kian Meng

Malaysian Society of Haematology

Dato' Dr M.Venugopal Balchand

Malaysian Association of Thoracic & Cardiovascular Surgeons

Dr Goh Pik Pin

Clinical Research Centre, Hospital  
Kuala Lumpur & Malaysian Society of  
Ophthalmology

Dr Jamaiah Haniff

Clinical Research Centre, Hospital  
Kuala Lumpur

### **Secretariat:**

Ms Leong Wei Chee

## 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 as deemed necessary.
2. To undertake quality control of the reported data.
3. To undertake literature review on 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's 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-chairperson (Adult)</b>	Dr Alan Teh Kee Hean
<b>Co-chairperson (Paeds)</b>	Prof Dr Chan Lee Lee
<b>Members</b>	Prof Gan Gin Gin @ Gan Shiaw Sze
	Dr Hishamshah Mohd Ibrahim
	Prof Madya Dr S Fadilah Abdul Wahid
	Dr Ong Tee Chuan

### Discipline: **Cornea Transplant**

<b>Chairperson</b>	Dr Shamala Retnasabapathy
<b>Members</b>	Prof Dato' Dr Veera Ramani
	Dr Choong Yean Yaw
	Dr Michael Law Sie Haur
	Dr Thiageswari Umopathy
	Dr Chandramalar Santhirathelagan
	Associate Prof Dr Mohtar Ibrahim

**Discipline: Heart and Lung Transplant**

<b>Chairperson</b>	Mr Mohamed Ezani Hj Md. Taib
<b>Members</b>	Dato' Dr David Chew Soon Ping
	Dr Aizai Azan Abdul Rahim
	Dr Abdul Rais Sanusi
	Dr Ashari Yunus

**Discipline: Liver Transplant**

<b>Chairperson</b>	Dr Ganesalingam A/L Kanagasabai
<b>Members</b>	Dr Lim Kin Foong
	Dr Haniza Omar
	Dr Lim Chooi Bee
	Prof Dr Lee Way Seah

**Discipline: Renal Transplant**

<b>Chairperson</b>	Dr Goh Bak Leong
<b>Members</b>	Dato' Dr Zaki Morad Mohd Zaher
	Dato' Dr (Mr) Rohan Malek
	Dr Fan Kin Sing
	Dr S Prasad Menon
	Dr Lily Mushahar
	Dr Lim Soo Kun

**Discipline: Bone and Tissue Transplant**

<b>Chairperson</b>	Dr Suzina Sheikh Ab Hamid
<b>Members</b>	Dr Abdul Malik Mohamed Hussein
	Assoc Prof Dr Ahmad Hafiz Zulkifly
	Dr Thiageswari Umopathy
	Dr Ewe Teong Wan
	Dr Norimah Yusof
	Assoc Prof Dr Vivek Ajit Singh

**Discipline: Cadaveric Organ and Tissue Donations**

<b>Chairperson</b>	Datin Dr Fadhilah Zowyah Lela Yasmin Mansor
<b>Members</b>	Dr Hooi Lai Seong
	Dr Omar Sulaiman
	Dr Muhammed Anis Bin Abdul Wahab
	Matron Jamaliah Kario
	Staff Nurse Santi A/P Krishanan

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