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Eurotransplant mission statement

Mission

Service organization for transplant candidates through the collaborating transplant programmes within the organization

Goals

- To achieve an optimal use of available donor organs and tissues.
- To secure a transparent and objective selection system, based upon medical criteria.
- To assess the importance of factors which have the greatest influence on transplant results.
- To support donor procurement to increase the supply of donor organs and tissue.
- To further improve the results of transplantation through scientific research.
- Promotion, support and coordination of organ transplantation in the broadest sense of terms

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as per December 31, 1997

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Centre- code	Centre / City	Surgeon	Physician	Transplant coordinators
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LA	Cliniques Universitaires St. Luc, Bruxelles	J.B. Otte, R. Reding, J. de Ville de Goyet, F. Wese	A. Geubel, E. Sokal	M. Jansen, F. Roggen
LG	Centre Hospitalier Universitaire, Liège	P. Honoré, M. Meurisse	J. Beleiche	M-H. Delbouille, M-F. Hans
LM	Universitair Ziekenhuis Gasthuisberg, Leuven	R. Aerts, W. Coosemans, J. Pirenne	J. Fevery	L. Roels, F. Van Gelder

Centre- code	Centre / City	Surgeon	Physician	Transplant coordinators
Germany				
AK	Universitätsklinikum der Rheinisch-Westfälischen TH, Aachen	V. Schumpelick	S. Matern	R. Kasperk
-	Knappschafts Krankenhaus, Bochum	M. Büsing, J. Klemmner	J. Klemmner	A. Deiss
BO	Chirurgische Universitätsklinik, Bonn	A. Hirner, A. Müller	T. Sauerbruch, U. Spengler	E. Backhaus
BV	Charité-Campus Virchow Klinikum der Humboldt Universität, Berlin	P. Neuhaus	U. Frei	D. Horch
DU	Med. Einrichtungen der Heinrich-Heine-Universität, Düsseldorf	P. Goretzki, W. Röher		B. Schaepeers
ES	Universitätsklinikum, Essen	F.W. Eigler	R. Lange	R. Abel
FM	Klinikum der Johann-Wolfgang-Goethe-Universität, Frankfurt	A. Encke, E. Hanisch, B. Markus	C. Allers	S. Schleede
FR	Klinikum der Albert-Ludwigs-Universität, Freiburg	G. Kirste	H. Blum	M. Blümke, F. Schaub
GO	Klinikum der Georg-August-Universität, Göttingen	B. Ringe	G. Ramadori	R. Werner
HB	Klinikum der Ruprecht-Karls-Universität, Heidelberg	Ch. Herfarth, E. Klar		E. Frey
HG	Universitäts-Krankenhaus Eppendorf, Hamburg	Ch. Broelsch	M. Sterneck	T. Karbe, R. Kütremeier
HO	Klinikum der Medizinischen Hochschule, Hannover	R. Pichlmayr †	M. Manns	H. Basse, F. Vogelsang
JE	Klinikum der Friedrich-Schiller-Universität, Jena	J. Scheele		R. Börner
KI	Klinikum der Christian-Albrechts-Universität, Kiel	B. Kremer	H. Kraemer-Hansen	N. Robien, G. Schütt
KL	Klinik der Universität Köln-Lindenthal, Köln	T. Beckurts		G. Kerp
KM	Städtische Krankenanstalten Köln-Merheim, Köln	A. Paul		A. Frohn, G. Kerp
LP	Klinikum der Universität, Leipzig	J. Hauss		T. Weiskirchen
MB	Klinikum Otto-von-Guericke Universität, Magdeburg	H. Lippert, T. Manger	J. Mössner	J. Fahlke, C. Wachsmuth
MH	Klinikum Rechts der Isar der Technischen Universität, München	C.D. Heidecke	V. Schusdziarra	C. Schulz
ML	Klinikum Großhadern der Ludwig-Maximilians-Universität, München	H-G. Rau	A. Gerbes	C. Schulz
MN	Klinikum der Westfälischen Wilhelms-Universität, Münster	N. Senninger	K.H. Dietl	S. Kley, M. Mauritz-Bröcker
MZ	Klinikum der Johannes-Gutenberg-Universität, Mainz	G. Otto	A.W. Lokse	B. Brenke
NB	Chirurgische Klinik der Universität Erlangen-Nürnberg, Erlangen	W. Hohenberger		K. Burkhardt, L. Renders
RB	Klinikum der Universität Regensburg	M. Anthuber, K.W. Jauch		K. Burkhardt, L. Renders
RO	Klinikum der Universität, Rostock	U.T. Hopt, W. Schareck	S. Liebe, M. Löhr	F-P. Nitschke
TU	Klinikum der Eberhard-Karls Universität, Tübingen	W. Lauchart, R. Viebahn	H. Becker	C. Fischer-Fröhlich
WZ	Klinikum der Julius-Maximilians-Universität, Würzburg	W. Timmermann		D. De Cicco
The Netherlands				
GR	Academisch Ziekenhuis, Groningen	K. de Jong, P. Peeters, M. Slooff	A. van den Berg, E. Haagsma, I. Klompmaker, L. Meerman	W.J.A. Brokelman, P.H. Nieboer, A.L. Stel
LB	Leiden University Medical Centre, Leiden	O. Terpstra	B. van Hoek	R. Dam, M. Groot, M. van Gorp, M. Kruyswijk
RD	Academisch Ziekenhuis Dijkzigt, Rotterdam	M. IJzermans, H. Tilanus	H. Metselaar	R. Dam, M. Groot, M. van Gorp, M. Kruyswijk
Pancreas (*Islet) Transplant Centres				
Austria				
IB	Chirurgische Universitätsklinik, Innsbruck	A. Königsrainer, R. Margreiter	M. Lechleitner, W. Steurer	H. Feitz, P. Schobel
WG	Universitätsklinik für Chirurgie, Wien	F. Mühlbacher, R. Steininger	A. Gangl	F. Langer, Ch. Mittermaier
Belgium				
AN	Universitair Ziekenhuis Antwerpen, Edegem			G. Van Beeumen, W. Van Donink
BP*	Academisch Ziekenhuis der Vrije Universiteit, Brussel	D. Ysebaert		C. Hendriekx

Centre- code	Centre / City	Surgeon	Physician	Transplant coordinators
BR	ULB, Hôpital Erasme, Bruxelles	L. Depauw	F. Fery	E. Angenon, V. Duthie, B. Van Haelewijck
GE	Universitair Ziekenhuis, Gent	U. Hesse	N. Lameire	L. Colenbie, M. Vandervenmet
LA	Cliniques Universitaires St. Luc, Bruxelles	J. Squifflet	B. Vandeleene	V. Dumont, C. Lecomte
LM	Universitair Ziekenhuis Gasthuisberg, Leuven	R. Aerts, W. Coosemans, J. Pirenne	Y. Vanrenterghem	L. Roels, F. Van Gelder
Germany				
BB	Knappschaftskrankenhaus, Bochum	M. Büsing	M. Nauck	A. Deiss
BV	Charité-Campus Virchow Klinikum der Humboldt Universität, Berlin	P. Neuhaus	U. Frei	D. Horch
ES	Universitätsklinikum, Essen	F. Eigler	R. Lange	R. Abel
FR	Klinikum der Albert-Ludwigs-Universität, Freiburg	G. Kirste	H. Blum	M. Blümke, F. Schaub
GI*	Klinikum der Justus-Liebig-Universität, Gießen	J. Scheele	R.G. Bretzel	M. Brendel
JE	Klinikum der Friedrich-Schiller-Universität, Jena	T. Beckurts	H. Sperschneider	R. Börner
KL	Klinik der Universität Köln-Lindenthal, Köln	A. Paul	G. Kerp	G. Kerp
KM	Städtische Krankenanstalten Köln-Merheim, Köln	W. Land	R. Landgraf, B. Zanker	A. Frohn, G. Kerp
ML	Klinikum Großhadern der Ludwig-Maximilians-Universität, München	K.H. Diehl	S. Heidenreich	C. Schulz
MN	Klinikum der Westfälischen Wilhelms-Universität, Münster	M. Rothmund	H. Lange	S. Kley, M. Mauritz-Bröcker
MR	Klinikum Lahnberge der Philips-Universität, Marburg	W. Hohenberger	U. Kunzendorf	A. Brinke-Lang, U. Heck
NB	Chirurgische Klinik der Universität Erlangen-Nürnberg, Erlangen	M. Anthuber, K.W. Jauch	R. Hampel	K. Burkhardt, L. Renders
RB	Klinikum der Universität, Regensburg	U.T. Hopt, W. Schareck	H. Becker	K. Burkhardt, L. Renders
RO	Klinikum der Universität, Rostock	I. Irkin, W. Lauchart, R. Viebahn		F-P. Nischke
TU	Klinikum der Eberhard-Karls-Universität, Tübingen	D. Abendroth		C. Fischer-Fröhlich
UL	Klinikum der Universität, Ulm			S. Rettenberger, B. Salz
The Netherlands				
GR	Academisch Ziekenhuis, Groningen	R. Ploeg, R. van Schilfegaarde	A. Tegzess	W.J.A. Brokelman, P.H. Nieboer, A.L. Stel
LB	Leiden University Medical Centre, Leiden	J. Ringers	J.W. de Fijter	R. Dam, M. Groot, M. van Gorp, M. Kruyswijk
MS	Academisch Ziekenhuis, Maastricht	G. Kootstra	J. van Hooff	A. Nederstigt
Centre- code	Tissue Typing Laboratory / City	Head		
ETRL	Eurotransplant Reference Laboratory, Leiden University Medical Centre, Leiden, The Netherlands		F. Claas, I. Doxiadis, G. Schreuder	
Austria				
GA	Universitätsklinik, Abteilung für Transfusionsmedizin und Immunhämatologie, Graz		G. Lanzer	
IB	Universitätsklinik, HLA Labor, Innsbruck		D. Schönitzer	
OL	Allgemeines Krankenhaus, Blutzentrale, Linz		B. Blauth	
OW	Allgemeines Krankenhaus, HLA Labor, Wels		C. Artman	
WG	Institut für Blutgruppenserologie, Wien		W. Mayr	
Belgium				
AN	Bloedtransfusiecentrum Antwerpen, Belgische Rode Kruis, Edegem		L. Muylle	
BJ	Academisch Ziekenhuis der Vrije Universiteit, Bloedtransfusiecentrum Jette, Brussel		C. Demanet	
BR	Hôpital Erasme, Tissue typing laboratory, Bruxelles		E. Dupont	
GE	Universitair Ziekenhuis, Tissue typing laboratory, Gent		B. Vandekerckhove	

Centre- code	Tissue Typing Laboratory / City	Head
LA	Université de Louvain, Tissue typing laboratory, Bruxelles	M. de Bruyère
LG	Laboratoire des Groupes Sanguins, Liège	C. Bouillenne
LM	Bloedtransfusiecentrum, Belgische Rode Kruis, Leuven	M.P. Emonds
Germany		
AK	Mikrobiologie am Universitätsklinikum der Rheinisch-Westfälischen TH, Aachen	K. Schweitzer
BE	Universitätsklinikum Benjamin Franklin, Labor für Gewebetypisierung, Berlin	S. Bünte
BV	Charité-Campus Virchow Klinikum der Humboldt Universität, Berlin	R. Blasczyk
EB	Krankenhaus im Friedrichshain, HLA Labor, Berlin	C. Schönemann
DU	Institut für Blutgerinnung und Transfusionsmedizin, Düsseldorf	B. Kuntz
ER	Institut für Klinische Immunologie, Erlangen	R. Waßmuth
ES	Universitätsklinikum, Institut für Immunologie, Essen	H. Grosse-Wilde
FM	Immunohaematologie, Blutspendedienst Hessen, Frankfurt	C. Seidl
FR	Blutspendedienst, Labor für Gewebetypisierung, Freiburg	H. Lang
GI	Institut für Klinische Immunologie und Transfusionsmedizin, Gießen	G. Bein
GO	Klinikum der Universität, HLA Labor, Göttingen	H. Neumeyer
HA	Institut für Pathologische Biochemie, Interdisziplinäres Typisierungslabor, Halle	H. Machulla
HB	Institut für Immunologie und Serologie, Heidelberg	G. Opelz
HG	Universitäts-Krankenhaus Eppendorf, HLA Labor, Hamburg	P. Kühnl
HM	Gemeinschaftspraxis, Kassel	B. Kreuzig, H.D. Weißhaar
HO	Klinikum der Medizinischen Hochschule, Immunohaematologie/Blutbank, Hannover	H. Robin-Winn
JE	Institut für Transfusionsmedizin, HLA-Labor, Jena	Th. Binder
KI	Klinikum der Christian-Albrechts-Universität, HLA Labor, Kiel	E. Westphal
KM	Institut für Transfusionsmedizin, Köln-Merheim	M. Dörner
KS	Institut für Rechtsmedizin, Transplantationsimmunologie, Kaiserslautern	B. Thiele
LP	Institut für Transfusionsmedizin, Leipzig	S. Schröder
LU	Institut für Immunologie und Transfusionsmedizin, Lübeck	H. Klüter
ML	Kinderklinik der Ludwig-Maximilians-Universität, HLA Labor, München	E. Albert
MR	Klinikum Lahnberge der Philipps-Universität, HLA Labor, Marburg	M. Wolf
MZ	Klinikum der Johannes-Gutenberg Universität, HLA Labor, Mainz	W. Hitzler
RO	Klinikum der Universität, Abteilung für Transfusionsmedizin, HLA Labor, Rostock	D. Barz
TU	Klinikum der Eberhard-Karls-Universität, Abteilung für Transfusionswesen und Blutbank, Tübingen	D. Wernet
UL	DRK Blutspendezentrale, Transplantationsimmunologie, Ulm	S. Goldmann
Luxembourg		
LX	Centre Hospitalier, HLA Labor, Luxembourg	F. Hentges
The Netherlands		
AW	Centraal Laboratorium Bloedtransfusiedienst, Nederlandse Rode Kruis, Amsterdam	N.M. Lardy
GR	Laboratorium voor transplantatie-immunologie, Groningen	S. Lens
LB	Leiden University Medical Centre, Immunohaematologie, Leiden	F. Claas, G. Schreuder
MS	Academisch Ziekenhuis, Laboratorium voor weefseltypering, Maastricht	E. van den Berg-Loonen
NY	Academisch Ziekenhuis St. Radboud, Bloedtransfusiedienst, Nijmegen	W. Allebes, I. Joosten
UT	Academisch Ziekenhuis, Bloedbank, Utrecht	H. Otten

Foreword

Each year the Eurotransplant International (ET) Annual Report provides a large amount of data on the organ donation and transplantation activities in the five member countries of ET and this year is no exception. In 1997, organ donation rates remained stable, with the exception of Austria where there was a 15% decrease. Despite this decrease, Austrian donation rates were second only to those in Belgium at 19.5 and 22.5 donors per million inhabitants, respectively.

As a consequence of the stagnation in donation rates, the number of transplants performed during 1997 did not alter significantly compared with 1996. The waiting list for kidney and liver transplants increased slightly, while the number of patients on the heart, lung, and pancreas waiting lists did not change. As shown in Table 2.8, the number of patients who died while awaiting transplantation remained high, especially among patients awaiting hearts and livers. We can only hope that the implementation of new legislation in The Netherlands and Germany will increase donation rates in these two countries.

The ET office devoted a considerable amount of time in 1997 to analysing the new legislation and its consequences for ET, in case it will be recognized as the official organ allocation organization in the countries affected. This process is ongoing and has included fruitful discussions with both Dutch and German governmental and other official representatives.

As part of the process the Board asked the ET office to begin computer simulations to come to a more patient-orientated allocation system for liver transplants similar to that currently used for kidney allocation.

Current German law states that only medical criteria can be used to allocate organs for transplantation. However, under the new legislation the allocation organization will be obliged to follow-up carefully the outcome of the allocated organs in terms of patient and graft survival. As follow-up data in the ET database is a major concern, the ET Board decided to appoint a data manager whose primary function will be the improvement of data collection through a better collaboration with the ET centres. This will include offering transplant centres connection to other international transplant databases, such as the International Heart and Lung Transplant Registry and the International Pancreas Transplant Registry. Links with the CTS (Collaborative Transplant Study) database and the European Liver Transplant Registry are currently in preparation. Such links should reduce the number of registry questionnaires to be completed by individual centres and, it is hoped, will also improve overall follow-up reporting.

The year 1997 will also be remembered by the Eurotransplant community by the tragic death of Prof. Dr. Rudolph Pichlmayr. He was one of the first Board members and supporter of the ET-philosophy from the first hour on. The transplantation society in general and the ET community especially lost one of its great pioneering sons on whom many of us could count. We always will remain very grateful to him.

Finally, we would like to take this opportunity to thank all colleagues in Eurotransplant involved in the various fields of organ donation and transplantation. Thanks to them we are again able to provide you with a wealth of information over the year 1997. May this Annual Report be a reflection of our sincere gratitude to all of you.

Prof. Dr. Yves Vanrenterghem
President

Drs. Bernard Cohen
Director

Dr. Guido G. Persijn
Medical Director

Leiden, August 1998

1. Report of the Board of Stichting Eurotransplant International Foundation

Drs. B. Haase-Kromwijk, Eurotransplant International Foundation, Leiden, The Netherlands

The Board of Stichting Eurotransplant International Foundation met on January 15, June 16, and October 8-10, 1997. Two members of the Board, Prof. Dr. F. Lackner and Drs. H.M.A. Schippers, were re-elected during the year to the positions of ethical expert and financial expert, respectively, and some technical adaptations to the Articles of Association of the Foundation were approved.

1.1 Policy

A policy document entitled *Key notes for a new Eurotransplant policy* which describes the current and future goals of Eurotransplant was discussed and the Board agreed that the following sentence should be added to the mission statement: *Eurotransplant is a service organization for transplant candidates through the collaborating transplant programmes within the organization.* The Board also decided that Eurotransplant should focus on the following priorities:

- The allocation of organs
- The introduction of an accreditation system for the collaborating transplant programmes
- The further development of scientific output, for example through more effective data collection and co-operation with international transplant registries

In 1997, the Board closely followed important developments in organ donation and transplantation legislation in the Eurotransplant countries. For example, in Belgium, a royal decree on transplantation and allocation was published, in Germany a transplant law was approved on December 1 and, in The Netherlands, preparations were begun to implement a law on organ donation and transplantation in 1998.

The Board approved so-called twinning agreements between Eurotransplant centres and centres outside the region. Such agreements were still thought to be the best way to further the development of these centres. The conditions for twinning include, amongst others, an official agreement between the two centres to be approved by the Board, a training period of a maximum period of two years, and the reimbursement of costs according to the economical standard of the country involved. As the Czech Ministry of Health abolished Czech Transplant as of January 1, 1998, the planned official cooperation agreement with this organization could not be put into action.

A non-resident policy concerning adult liver patients was established and the Board approved the recommendation of the Ethics Committee, which states that a non-resident policy is allowable provided that patients (all categories) are properly informed of their new status in the allocation system.

The Board also approved a number of recommendations from the Advisory Committees. Details of these recommendations were published in the *Eurotransplant Newsletter*.

1.2 Central office

Plans to develop a new building to house Eurotransplant central office were abandoned due to the delay caused by government regulations and rising costs.

The Information Department was restructured and an interim information manager was appointed to organize the restructuring. During the year, the Board decided that the Information Department should be extended to accelerate the development of outstanding projects. This included the employment of extra staff on a project by project basis.

Three main priority development areas were identified in the Information Department: allocation, improvements in the functionality of the database for remote users, and the restructuring of the transplant database.

Restructuring of the transplant database will also be addressed through improved collaboration between Eurotransplant and other international transplant registries. The completeness of the data held in the database also needs improvement and, to support this work, a special data manager will be appointed. The Board decided that submission of data relevant to the functioning of Eurotransplant should be a precondition to membership of the organization. If centres do not follow this rule, they will exclude themselves from further co-operation. This policy is also requested and supported by legislation in the Eurotransplant countries.

In 1997, the Advisory Committees were composed as follows:

KIDNEY ADVISORY COMMITTEE (ETKAC)

Name	From	Until	Successor of	Remarks
Prof.Dr. U. Frei (BV)	01.1997			chairman, representative Board
Dr. R. Kramar (OW)	09.1994			representative Austria
Prof.Dr. F. Mühlbacher (WG)	09.1994			representative Austria
Prof.Dr. Y. Pirson (LA)	09.1994			representative Belgium
Prof.Dr. N. Lameire (GE)	09.1994			representative Belgium
Prof.Dr. G. Kirste (FR)	07.1996			representative Germany
Prof.Dr. G. Offermann (BE)	09.1994			representative Germany
Dr. U. Schmidt (KS)	12.1996			representative Germany
Prof.Dr. K. Dreikorn (BM)	12.1996			representative Germany
Dr. P. Duhoux (LX)	09.1994			representative Luxemburg
Dr. A. Hoitsma (NY)	09.1994			representative The Netherlands
<i>Prof.Dr. W. Weimar (RD)</i>	<i>09.1994</i>	<i>01.1998</i>		<i>representative The Netherlands</i>
Dr. R. Hené (UT)	01.1998		Prof.Dr. W. Weimar	representative The Netherlands
Prof.Dr. F.H.J. Claas (LB)	09.1994			representative TTAC
Prof.Dr. G. Offner (HO)	09.1994			external advisor 'Pediatric'
Prof.Dr. G. Opelz (HB)	09.1994			external advisor 'Allocation'
Dr. Th. Wujciak (HB)	09.1994			external advisor 'Allocation'
Dr. G.G. Persijn (ET)	09.1994			secretary

THORACIC ADVISORY COMMITTEE (THAC)

Name	From	Until	Successor of	Remarks
Prof.Dr. A. Haverich (HO)	09.1994			chairman, representative Board
Dr. G. Laufer (WG)	09.1994			representative Austria
Prof.Dr. K. Tscheliessnigg (GA)	09.1994			representative Austria
Prof.Dr. J. Schoevaerds (LA)	09.1994			representative Belgium
Prof.Dr. J. Vanhaecke (LM)	09.1994			representative Belgium, vice-chairman
Prof.Dr. S. Hagl (HB)	09.1994			representative Germany)
Prof.Dr. B. Reichart (ML)	09.1994			representative Germany
Prof.Dr. Th. Wahlers (HO)	09.1995			representative Germany
Prof.Dr. H. Scheld (MN)	12.1996			representative Germany
Dr. W.J. de Boer (GR)	09.1994			representative The Netherlands
<i>Dr. N. de Jonge (UT)</i>	<i>09.1994</i>	<i>01.1998</i>		<i>representative The Netherlands</i>
Dr. A. Balk (RD)	01.1998		Dr. N. de Jonge	representative The Netherlands
Dr. M. Loebe (BD)	12.1995			external advisor 'Donor'
Dr. M. Antoine (BR)	06.1995			external advisor 'Database'
Dr. J. De Meester (ET)	09.1994			secretary

LIVER ADVISORY COMMITTEE (ELAC)

Name	From	Until	Successor of	Remarks
Prof.Dr. M.J.H. Slooff (GR)	09.1994			chairman, representative Board
Prof.Dr. R. Margreiter (IB)	09.1994			representative Austria, vice-chairman
Prof.Dr. B. de Hemptinne (GE)	09.1994			representative Belgium
Prof.Dr. J.B. Otte (LA)	09.1994			representative Belgium
<i>Dr. J. Erhard (ES)</i>	<i>09.1994</i>	<i>11.1997</i>		<i>representative Germany</i>
Prof.Dr. W. Lauchart (TU)	12.1997		Dr. J. Erhard	representative Germany
Prof.Dr. P. Neuhaus (BV)	09.1994			representative Germany
Prof.Dr. B. Ringe (GO)	09.1994			representative Germany
Dr. H.J. Metselaar (RD)	04.1995			representative The Netherlands
<i>Dr. H. De Winter (ET)</i>	<i>01.1996</i>	<i>11.1997</i>		<i>secretary</i>
Dr. G. Stellingwerff (ET)	04.1998		Dr. H. De Winter	secretary

PANCREAS ADVISORY COMMITTEE (PAC)

Name	From	Until	Successor of	Remarks
Prof.Dr. G. Kootstra (MS)	08.1994			chairman, representative Board
Dr. A. Königsrainer (IB)	08.1994			representative Austria
Prof.Dr. J-P. Squifflet (LA)	08.1994			representative Belgium
Prof.Dr. D. Abendroth (UL)	08.1994			representative Germany
<i>Prof.Dr. U.T. Hopt (RO)</i>	<i>08.1994</i>	<i>11.1997</i>		<i>representative Germany, vice-chairman</i>
Dr. M. Büsing (BB)	12.1997		Prof.Dr. U.T. Hopt	representative Germany
Prof.Dr. R.G. Bretzel (GI)	09.1996			representative Germany)
<i>Dr. H.H.P.J. Lemkes (LB)</i>	<i>12.1995</i>	<i>01.1998</i>		<i>representative The Netherlands</i>
Dr. J. Ringers (LB)	01.1998		Dr. H.H.P.J. Lemkes	representative The Netherlands
Prof.Dr. F.H.J. Claas (LB)	08.1994			representative TTAC
Dr. J. De Meester (ET)	08.1994			secretary

TISSUE TYPING ADVISORY COMMITTEE (TTAC)

Name	From	Until	Successor	Remarks
Prof.Dr. F.H.J. Claas (LB)	09.1995			chairman, representative Board
Prof.Dr. W. Mayr (WG)	09.1995			representative Austria
Dr. M.P. Emonds (LM)	09.1995			representative Belgium
Dr. G. Bein (GI)	09.1995			representative Germany
Dr. J. Mytilineos (HB)	01.1997			representative Germany
Dr. F. Hentges (LX)	09.1995			representative Luxemburg
Dr. S. Lems (GR)	09.1995			representative The Netherlands
Dr. I.I.N. Doxiadis (ETRL)	09.1995			secretary

ORGAN PROCUREMENT COMMITTEE (OPC)

Name	From	Until	Successor of	Remarks
<i>Prof.Dr. B. Ringe (GO)</i>	<i>09.1995</i>	<i>10.1997</i>		<i>chairman, representative Board</i>
Prof.Dr. J. Lerut (LA)	10.1997		Prof.Dr. B. Ringe	chairman, representative Board
Dr. P. Wamsler (WG)	03.1995			representative TC's Austria
<i>Mrs. B. Van Haelewijk (BR)</i>	<i>09.1995</i>	<i>01.1998</i>		<i>representative TC's Belgium</i>
Mr. L. Roels (LM)	01.1998		Mrs. B. Van Haelewijk	representative TC's Belgium
<i>Mr. J. Kranenburg (GR)</i>	<i>09.1995</i>	<i>08.1997</i>		<i>representative TC's The Netherlands</i>
Ms. J. Popma (AW)	12.1997		Mr. J. Kranenburg	representative TC's The Netherlands
Dr. F-P. Nitschke (RO)	09.1995			representative TC's Germany
Mr. R. Werner (GO)	09.1995			representative TC's Germany
Prof.Dr. G. Kirste (FR)	09.1996			representative ETKAC
<i>Prof.Dr. Th. Wahlers (HO)</i>	<i>09.1995</i>	<i>10.1997</i>		<i>representative ThAC</i>
Dr. M. Antoine (BR)	01.1998		Prof.Dr. Th. Wahlers	representative ThAC
<i>Dr. J. Erhard (ES)</i>	<i>06.1996</i>	<i>11.1997</i>		<i>representative ELAC</i>
Prof.Dr. W. Lauchart (TU)	01.1998		Dr. J. Erhard	representative ELAC
Prof.Dr. J-P. Squifflet (LA)	09.1995			representative PAC
Dr. I.I.N. Doxiadis (LB)	02.1998			representative TTAC
Dr. J. de Boer (ET)	09.1995			secretary

COMPUTER SERVICES WORKING GROUP (CSWG)

Name	From	Until	Successor of	Remarks
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Dr. E. Nagel (HO)	09.1997		Dr. K. Ketzler	representative Germany
Drs. B. Cohen (ET)	05.1995			secretary

2. Eurotransplant: donation, waiting list, and transplants

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2.1 Donation and donor organ availability in 1997

2.1.1 Cadaveric organ donors from the Eurotransplant region

The donation statistics presented here include only cadaveric donors who donated at least one organ that was transplanted. Excluded are 93 donors reported to or offered by Eurotransplant whose organs were not transplanted.

The annual donation figures for each Eurotransplant country have remained steady for several years now and 1997 was no exception: the total number of cadaveric donors used in 1997 was identical to the number used in 1996 (N=1647) (Table 2.1). The only substantial increase observed was in the number of pancreases used in clinical transplants, which rose by 43% from 154 to 225 pancreases (Table 2.2).

There was no major increase in the use of elderly donors (aged 56 years or more) between 1996 and 1997 (348 elderly donors were used in 1996 compared with 364 in 1997) (Table 2.3). Following a peak of 742 donors with ABO blood group type O in 1996 (45% of donors), the number returned to average levels in 1997 – 670 blood group type O donors (41%).

Table 2.1 Number of cadaveric donors with transplantable organs in the Eurotransplant region from 1994 to 1997

Country	population (million)	1994 N	1995 N	1996 N	1997 N	1997 Per million inhabitants	1996/1997
Austria	8	171	172	184	156	19.5	- 15.2%
Belgium	10	228	196	212	225	22.5	+ 6.1%
Germany	80	982	1022	1012	1045	13.1	+ 3.3%
Luxemburg	0.4	4	2	13	5	12.5	-
Netherlands	15	196	228	226	216	14.4	- 4.4%
Total	113.4	1581	1620	1647	1647	14.5	-

Table 2.2 Number of organ donors with transplantable organs in the Eurotransplant region from 1994 to 1997, by organ

Year	1994	1995	1996	1997
Organ donors, total	1581	1620	1647	1647
Organ donors				
Kidney	1544	1585	1607	1607
Heart	725	746	773	803
Lung	155	144	168	169
Liver	827	825	934	979
Pancreas	97	119	154	225

Table 2.3 Demographics of cadaveric donors with transplantable organs in the Eurotransplant region in 1997

Country	Total	Age (years)			Sex		AB0 Blood group				Cause of death		
		0-15	16-55	≥56	Male	Female	A	AB	B	0	Accident	Natural	Suicide
Austria	156	6	127	23	102	54	66	8	19	63	60	86	10
Belgium	225	17	163	45	146	79	105	8	13	99	79	121	25
Germany	1045	62	717	266	618	427	446	52	133	414	368	626	51
Luxemburg	5	0	5	0	3	2	2	0	1	2	2	3	0
Netherlands	216	22	164	30	111	105	96	8	20	92	90	121	5
Total	1647	107	1176	364	980	667	715	76	186	670	599	957	91
	100%	7%	71%	22%	59%	41%	43%	5%	11%	41%	36%	58%	6%

As shown in Table 2.4, the percentage of multi-organ donors (MODs) continued to rise, from 64% in 1994 to 71% in 1997. Differences in donation rates between countries were similar to those observed last year and rates were again higher in Austria and Belgium than in Germany and The Netherlands. However, these differences were less pronounced when the denominator ‘donor population’ was limited to heart-beating cadaveric kidney donors aged 16–55 years (N=1134/1607; 71%): Austria, 88%; Belgium, 89%; Germany, 78%; The Netherlands, 81%. The multi-organ donation rate from donors aged 56 years or more was 38% (N=138/358).

2.1.2 Cadaveric organ donors from outside the Eurotransplant region

Organs from 262 donors outside the Eurotransplant region were offered to the duty office of Eurotransplant (Addenda Table 2a, 2b). Organs from 129 of these donors were accepted and transplanted within the region. The organs fell into two categories:

- a. Donor organs offered by another European organ exchange organization that was unable to use the organs locally. Through this international collaboration 25 donor livers, 22 hearts, 21 kidneys and nine lungs were transplanted in the Eurotransplant region.
- b. Donor organs made available to a Eurotransplant transplant programme by an individual centre outside the Eurotransplant region, but within the framework of educational collaboration (‘twinning’). Such cadaveric donors are classified as local donors in the accounts of each Eurotransplant programme. In total, 55 donor livers, seven hearts, two kidneys, eight lungs, and one pancreas (as part of a simultaneous liver/pancreas transplant) were transplanted within the Eurotransplant region.

Table 2.4 Type of organ donation in 1997

Country	Kidney donor				No-kidney donor		Cadaveric donor	
	Total	Kidney-only	Multi-organ	%MOD	Total	Total	%	
Austria	154	34	120	78%	2	156	10%	
Belgium	214	32	182	85%	11	225	14%	
Germany	1021	344	677	66%	24	1045	63%	
Luxemburg	5	1	4	80%	0	5	<1%	
Netherlands	213	60	153	72%	3	216	13%	
Total 1997	1607	471	1136	71%	40	1647	100%	
Total 1996	1607	535	1072	67%	40	1647		
Total 1995	1585	585	1000	63%	35	1620		
Total 1994	1544	549	995	64%	37	1581		

In Eurotransplant a kidney donor is defined as a donor from whom at least one kidney is transplanted (not just recovered). A kidney donor from whom at least one non-renal organ is also used in a transplant is called a multi-organ donor (MOD). When only one or more non-renal organs are used, the donor is classified as a no-kidney donor.

Table 2.5 Size of the active Eurotransplant waiting list, by organ, on December 31, 1993–1997

Year Organ	1993	1994	1995	1996	1997
Kidney	9419	10157	10510	10988	11324
Heart	672	723	709	744	744
Heart/lung	49	71	79	71	66
Lung	203	227	224	204	216
Liver	203	212	263	327	374
Pancreas	134	147	138	182	194
Total	10680	11537	11923	12516	12918

The data included in this table provide a snapshot of the waiting lists on the last day of each calendar year. Only the patients who are actively awaiting an organ transplant have been counted. Patients with the urgency code ‘not transplantable’, have been excluded. Patients waiting for a simultaneous multiple-organ transplant are registered on the waiting list of each organ awaited. Therefore, the organ-specific waiting list represents the need for organs rather than the actual number of patients.

2.2 Active cadaveric transplant waiting list at the end of 1997

Compared with 1996, there was no significant increase in the active organ transplant waiting lists at the end of 1997 (Table 2.5).

2.3 Inflow to the waiting list in 1997

Registrations include patients awaiting a first transplant as well as those awaiting a repeat transplant (Table 2.6). Increases in the number of registrations were noted for pancreas/kidney transplants (+37%), lung transplants (+33%), liver transplants (+5%), and kidney transplants (+5%).

2.4 Outflow from the waiting list in 1997

2.4.1 Organ transplants from non-living donors

In 1997, 5413 cadaveric donor organs were used in 5177 transplant procedures (Table 2.7). Multiple-organ transplants, such as pancreas/kidney, account for the lower number of procedures compared with the number of organs used. The number of cadaveric transplants carried out in 1997 was greater than the number carried out in 1996 for the following organs: pancreas (+72; +46%), heart/lung (+9; +26%), and liver (+65; +6%).

2.4.2 Living donor transplants

In 1997, 411 living donors donated kidneys (Table 2.7), which is an increase of 67% compared with 1996. Forty-three liver transplants were performed using liver segments from living related donors (N=39) or the explanted native liver of a patient who received a domino liver transplant (N=4).

Table 2.6 Registrations on the Eurotransplant waiting lists from 1994 to 1997, by organ

Year Organ	1994	1995	1996	1997
Kidney	5059	4886	4826	5045
Heart	1218	1208	1319	1310
Heart/lung	93	81	71	76
Lung	223	226	219	292
Liver	1114	1240	1393	1468
Pancreas	123	157	219	300
Total	7830	7798	8047	8491

Table 2.7 Number of transplants within the Eurotransplant region from 1994 to 1997, by organ

Year	1994	1995	1996	1997
Cadaveric donors				
Transplanted organs,				
Kidney	2997	3064	3083	3110
Heart	696	732	759	782
Heart/lung	43	42	34	43
Lung	138	125	154	155
Liver	892	944	1032	1097
Pancreas	96	119	154	226
Transplant procedures				
Total	4746	4899	5053	5177
Living donors				
Kidney	168	211	246	411
Heart (domino)	2	0	1	0
Lung (lung lobe)	0	1	0	0
Liver (segment or domino)	24	25	22	43

2.4.3 Mortality on the waiting list

In 1997, approximately 1200 patients died while awaiting a first or repeat organ transplant, irrespective of their urgency code (Table 2.8). A persistent increase in mortality has occurred over the last four years in patients awaiting kidney, lung, and liver transplants. The majority of heart, lung, and liver transplant candidates died within the first few months of registration.

Table 2.8 Mortality on the Eurotransplant waiting lists from 1994 to 1997, by organ

Year Organ	1994	1995	1996	1997
Kidney	496	522	545	570
Heart	316	303	293	294
Heart/lung	28	28	28	22
Lung	62	70	71	89
Liver	142	167	200	221
Pancreas	3	4	9	5
Total	1047	1094	1146	1201

3. Kidney: donation, waiting lists, and transplants

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3.1 Kidney donors

A total of 1719 potential kidney donors were reported to the central office of Eurotransplant in 1997 (Table 3.1). Kidneys were transplanted from a 1607 donors, which is identical to the number of donors used in 1996. No kidneys were procured from 32 of the donors and, at the time of procurement or transplantation, 234 kidneys were judged to be unsuitable for transplant due to renal pathology, vascular tree abnormalities, atherosclerosis of the renal arteries, or nephrectomy-related damage to the kidney, renal vessels, or ureter. In total, there were 3092 cadaveric kidney transplant procedures. One kidney was transplanted from 86 donors and two kidneys were transplanted from 1521 donors. In the latter group, the kidneys from 36 donors were transplanted into one recipient.

As in 1996, 27.3 kidneys per million inhabitants were available for transplantation in the Eurotransplant region, and more kidneys were available for transplant in Austria and Belgium than in Germany or The Netherlands (38,8 and 40,5 versus 24,6 and 27,9 kidneys per million inhabitants, respectively).

Characteristics of the 1997 donor pool include (Table 3.2):

- The number of donors aged over 55 years – 358 (22%) – was similar to that seen in previous years (1995: N=346, 1996: N=344).
- Donor ABO blood group type O (ABO-O) distribution was similar to the average distribution of the last decade.
- A total of 36 kidneys were transplanted from 19 non-heart-beating kidney donors, compared with 44 kidneys from 30 such donors in 1996.
- Kidneys were transplanted from 13 donors who were hepatitis C antibody-positive and from six hepatitis B surface antigen-positive donors.

Table 3.1 Use of cadaveric donor kidneys in the Eurotransplant region in 1997

Donor Eurotransplant country	Austria	Belgium	Germany	Luxemburg	Netherlands	1997 Total	1996 Total
Total no. of kidney donors reported	162	232	1090	5	230	1719	1695
Kidney donors from whom no kidneys were procured	4	8	13	0	7	32	28
Total no. of potentially available kidney donors	158	224	1077	5	223	1687	1667
Total no. of potentially available donor kidneys*	316	448	2154	10	446	3374	3334
No kidney available for transplant	1	10	30	0	1	42	36
– Donor with a single kidney	0	0	4	0	1	5	11
– Permission for only one kidney	0	0	1	0	0	1	5
– Kidneys en-bloc ^o , paediatric as well as adult donor	1	10	25	0	0	36	20
Total no. of inspected and/or procured donor kidneys	315	438	2124	10	445	3332	3298
No transplantation	12	34	163	0	31	240	200
– Medical reasons	12	34	159	0	29	234	191
– Organizational reasons	0	0	1	0	2	3	3
– No suitable recipients	0	0	3	0	0	3	6
Transplantation	303	404	1961	10	414	3092 ⁺	3098 ⁺⁺
Kidney donors used	154	214	1021	5	213	1607	1607

* Conversion: one donor = two kidneys

^o Kidneys en-bloc, used in a transplant, are counted as one kidney used and one kidney not available; the transplantation of two adult donor kidneys in the same transplant procedure is also considered as one transplant.

⁺⁺ Six donor kidneys transplanted in 1997

⁺ Two donor kidneys transplanted in 1998

Table 3.2 Demographics of cadaveric kidney donors in the Eurotransplant region in 1997

Country	Total	Age (years)			Sex		ABO Blood group				Cause of death		
		0-15	16-55	≥56	Male	Female	A	AB	B	O	Accident	Natural	Suicide
Austria	154	6	125	23	101	53	65	8	19	62	59	85	10
Belgium	214	17	155	42	139	75	99	8	13	94	78	113	23
Germany	1021	58	700	263	602	419	433	52	132	404	360	611	50
Luxemburg	5	0	5	0	3	2	2	0	1	2	2	3	0
Netherlands	213	22	161	30	110	103	95	8	20	90	88	120	5
Total	1607	103	1146	358	955	652	694	76	185	652	587	932	88
	100%	6%	71%	22%	59%	41%	43%	5%	11%	41%	37%	58%	5%

3.2 Waiting list

The total active kidney waiting list rose by 3% from 10 988 in 1996 to 11 324 in 1997, compared with average annual increases of 4% in previous years (Addendum Table 6a; Figure 3.1). The new Eurotransplant kidney allocation system, which was introduced in 1996, continued to accomplish high transplant rates in long-waiting and paediatric patients, and maintained a balance between the import and export of donor kidneys across national borders (Table 3.5; Addenda Table 4a). These achievements had an impact on the composition of the Eurotransplant kidney-only waiting list which also grew by 3% in 1997 (Table 3.3). This growth was due exclusively to an increase in the waiting list in Germany.

Characteristics of the 1997 kidney waiting list include (Table 3.3):

- The number of paediatric recipients (aged less than 16 years) was reduced by 29% from 104 to 74.
- In each Eurotransplant country, kidney-only transplant candidates with blood group type O were the largest group on the waiting list and often constituted more than 50% of the list.
- The number of patients sensitized against HLA antibodies (6% or more panel reactive antibodies (PRA)) was reduced by 10% from 1680 to 1512.
- The ratio between patients awaiting a repeat transplant and those awaiting a first transplant did not change and, as in previous years, The Netherlands had the highest percentage of patients awaiting a re-transplant (26%).
- For the second year in a row, the number of patients waiting longer than five years for a kidney transplant decreased from 1165 to 1000. These patients now represent less than 10% of the total waiting list.
- The number of non-resident transplant candidates – patients who were neither living nor being treated in one of the five Eurotransplant countries – fell by 25% in 1997.

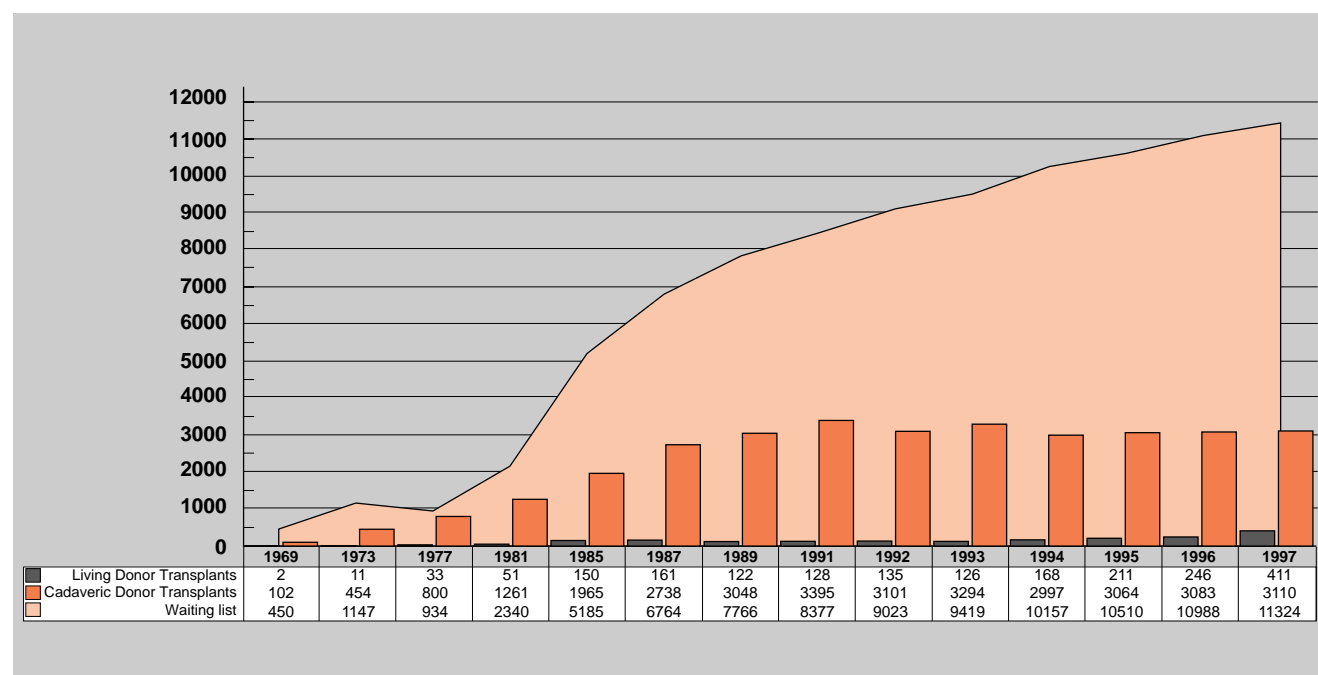


Figure 3.1 Dynamics of the Eurotransplant kidney waiting list and transplants between 1969 and 1997

Table 3.3 Active cadaveric kidney transplant waiting list on December 31, 1997: characteristics

		Austria	Belgium	Germany	Luxemburg	Netherlands	Total 1997	%	Total 1996
Total		834	932	8546	11	1001	11324		10988
Type of transplant	Kidney-only	812	908	8437	11	997	11165		10855
	Kidney/heart	1	1	8	0	0	10		7
	Kidney/liver	0	3	18	0	0	21		16
	Kidney/lung	0	0	1	0	0	1		0
	Kidney/pancreas	20	20	77	0	4	121		98
	Kidney/islet	1	0	5	0	0	6		12
Kidney-only waiting list		812	908	8437	11	997	11165	100%	10855
Age (years)	0–15	3	6	45	0	20	74	1%	104
	16–55	575	760	6020	9	738	8102	73%	8124
	56+	234	142	2372	2	239	2989	27%	2627
ABO	A	317	279	3511	1	346	4454	40%	4283
	AB	13	11	182	0	20	226	2%	224
	B	67	77	820	1	87	1052	9%	1050
	O	414	541	3924	9	544	5432	49%	5288
	Not yet reported	1	–	–	–	–	1	–	10
% PRA current	0–5%	620	779	7468	9	758	9634	87%	9151
	6–84%	168	109	897	2	189	1365	12%	1521
	85–100%	17	12	68	0	50	147	1%	159
	Not yet reported	7	8	4	0	0	19	–	24
Sequence	First	654	760	7137	9	734	9294	83%	8947
	Repeat	158	148	1300	2	263	1871	17%	1908
Time waiting (years)	0–1	556	496	4399	5	511	5967	53%	5770
	2–4	189	314	3296	5	394	4198	38%	3920
	5+	67	98	742	1	92	1000	9%	1165
Residency	Living in ET	765	551	8424	11	997	10748	96%	10315
	Living outside ET	47	357	13	0	0	417	4%	540

Table 3.4 Cadaveric kidney transplant waiting list in 1997: inflow (registrations) and outflow

		Austria	Belgium	Germany	Luxemburg	Netherlands	Total 1997	Total 1996
Registrations	Total	427	440	3385	1	792	5045	4826
	<i>First transplant</i>	347	363	2891	1	680	4282	4112
	<i>Repeat transplant</i>	80	77	494	0	112	763	714
Outflow	Transplantation (cadaveric donor)	310	405	1970	6	419	3110	3083
	Mortality on the waiting list	53	26	363	3	125	570	545
	De-listing	52	41	341	0	83	517	554

3.3 Inflow to the waiting list in 1997

A 5% increase in waiting list registrations occurred in 1997 (Table 3.4), and most new registrations were in Germany and The Netherlands. Fifteen percent of new registrations were for patients who required re-transplantation.

Increased restrictions on the acceptance of non-residents explains the decrease in the number of new registrations in Belgium between 1993 and 1997 (Addendam Table 7a).

3.4 Outflow from the waiting list during 1997

3.4.1 Kidney transplant activity

A total of 3110 cadaveric kidney transplants were performed in 1997 compared with 3083 in 1996 (Table 3.5). The slight increase was due to a rise in the number of combined pancreas/kidney transplantations in conjunction with a small decrease in the number of kidney-only transplants.

Table 3.5 also summarizes the 2879 kidney-only transplants carried out in 1997:

- Twenty-two percent of kidney-only transplants took place between donors and recipients with zero HLA-A, B, DR mismatches.
- The number of paediatric patients who received transplants in 1997 (153; 5%) was similar to that in 1996 (156).
- The number of ABO-O donors was reduced in 1997 compared with previous years and explains the lower transplant rate among ABO-O recipients. However, the proportion of ABO-O kidneys transplanted into recipients with other blood groups remained unaltered at 8%.
- Compared with 1995 (N=276, 9.4%) and 1996 (N=373, 12.8%), significantly more patients who had been on the waiting list for five years or more were transplanted in 1997 (N=700, 24.3%).
- Twenty-three en-bloc kidney transplants from paediatric donors were carried out and, of 14 adult donors, both kidneys were transplanted into one patient.

In addition, 35 'highly immunized' patients received transplants and accounted for approximately 20% of the 'highly immunized' waiting list. Of these, 22 patients received kidneys via the Eurotransplant kidney allocation programme, seven patients via the Highly Immunized Trial (HIT) protocol, and six patients via the Acceptable Mismatch programme.

The total 1997 activity of the Acceptable Mismatch programme amounted to 17 transplants while 18 transplants in Eurotransplant were realized through the HIT protocol (Table 3.5). Additionally, one kidney/pancreas transplant candidate received a cross-match negative HIT kidney and one HIT kidney was transplanted outside Eurotransplant in Switzerland.

Transplant activities and kidney exchange are shown in detail in the Addenda.

An excellent balance between national kidney procurement and transplantation was maintained throughout the year, while permitting an average local/regional transplant rate of 58% (1662/2879).

3.4.2 Mortality on the waiting list and de-listing

In 1997, a total of 570 patients died while on the waiting list (Table 3.4). Almost 60% (334) of patients died within three years of registration.

In addition, a further 517 patients were removed from the waiting list for various reasons, such as they were poor transplant candidates, they received living donor transplants, or they were no longer interested, and so on (Table 3.4). Approximately 50% of patients left the waiting list during the first three years after registration.

3.5 Living donor kidney transplants

Living donor kidney transplantation showed a significant rise in 1997 of 67% (411 donors in 1997 compared with 246 in 1996), and represented 12% of the total Eurotransplant kidney transplant activity (Table 3.5). Living unrelated donor kidney transplants, which increased from 39 in 1996 to 114 in 1997, were mainly responsible for the increase. Spousal transplants accounted for 87% (one-third male donors and two-thirds female) of these transplants.

A survey of the living donor kidney transplant activity by country and by centre is also presented in the Addenda.

Table 3.5 Kidney transplants in 1997: characteristics

		Austria	Belgium	Germany	Luxemburg	Netherlands	Total 1997	%	Total 1996
<i>Cadaveric donor</i>	<i>Kidney transplants</i>	310	405	1970	6	419	3110		3083
Type of transplant	Kidney-only	285	385	1802	6	401	2879		2915
	Kidney/heart	2	2	5	0	0	9		9
	Kidney/liver	2	3	15	0	0	20		19
	Kidney/pancreas	21	15	135	0	18	189		131
	Kidney/islet	0	0	13	0	0	13		9
Kidney-only transplants	Total	285	385	1802	6	401	2879	100%	2915
HLA-A, B, DR mismatch	0	49	50	464	0	80	643	22%	672
	1	19	28	117	0	32	196	7%	316
	2	78	117	433	2	116	746	26%	864
	3	85	142	533	2	134	896	31%	799
	4	44	46	207	2	37	336	12%	224
	5	10	2	44	0	2	58	2%	29
	6	0	0	4	0	0	4	<1%	11
Age (years)	0-15	11	14	102	0	26	153	5%	156
	16-55	194	270	1212	4	251	1931	67%	2026
	56+	80	101	488	2	124	795	28%	733
ABO	A	129	164	751	3	169	1216	42%	1206
	AB	10	12	150	1	19	192	7%	165
	B	44	49	248	0	52	393	14%	388
	O	102	160	653	2	161	1078	37%	1156
% PRA prior to transplant	0-5%	230	337	1545	6	324	2442	85%	2507
	6-84%	53	45	238	0	66	402	14%	369
	85-100%	2	3	19	0	11	35	1%	39
Time waiting (years)	0-1	129	239	614	3	173	1158	40%	1862
	2-4	106	106	634	3	172	1021	35%	680
	5+	50	40	554	0	56	700	24%	373
Sequence	First	218	310	1483	6	330	2347	82%	2422
	Repeat	67	75	319	0	71	532	18%	493
Residency	Living in ET region	277	352	1797	6	401	2833	98%	2827
	Living outside ET region	8	33	5	0	0	46	2%	88
Special kidney transplant groups	High urgency	7	1	41	0	5	54	2%	60
	Non-heart-beating donor	7	1	0	0	26	34	–	35
	Acceptable Mismatch	0	0	1	0	16	17	–	15
	Highly Immunized Trial	2	3	12	0	1	18	–	25
	En bloc, paediatric donor	0	4	19	0	0	23	–	16
	En bloc, adult donor	0	2	12	0	0	14	–	5
	Horseshoe kidney	0	1	1	0	0	2	–	0
Origin	Local-regional	183	211	1059	6	203	1662	58%	1606
	National	12	31	502	0	60	605	21%	743
	Other ET countries	88	140	227	0	135	590	20%	552
	Outside ET region	2	3	14	0	3	22	1%	14
<i>Living donor</i>	<i>Kidney transplants</i>	24	17	279	0	91	411	100%	246
Type of donor	Living related	20	16	187	0	74	297		207
	<i>Father</i>	4	3	33	0	12	52	13%	53
	<i>Mother</i>	6	6	96	0	18	126	31%	79
	<i>Sibling</i>	8	5	52	0	40	105	26%	65
	<i>Other relatives</i>	2	2	6	0	4	14	3%	10
	Living unrelated	4	1	92	0	17	114		39
	<i>Partner</i>	3	1	80	0	15	99	24%	35
	<i>Other</i>	1	0	12	0	2	15	3%	4
Sequence	First	19	15	248	0	84	366	89%	222
	Repeat	5	2	31	0	7	45	11%	25
Residency	Living in ET region	23	15	273	0	91	402	98%	241
	Living outside ET region	1	2	6	0	0	9	2%	5
<i>Total kidney transplant activity</i>		<i>334</i>	<i>422</i>	<i>2249</i>	<i>6</i>	<i>510</i>	<i>3521</i>		<i>3329</i>

3.6 Kidney-only 'high urgency' programme

In 1997, only a restricted number of grants for 'high urgency' (HU) kidney-only transplants per centre were available in the Eurotransplant region. HU patients are those whose dialysis treatment is endangered by imminent lack of access, or who are in a very poor physical or psychological condition.

HU requests were made for 64 patients in 1997, compared with 67 in 1996. One request for a liver/kidney transplant and one for a pancreas/kidney transplant were accepted. Of the 64 HU patients, 55 underwent transplantation in 1997 (Table 3.6).

Since March 1997 HU allocation within the Eurotransplant kidney allocation procedure has been downgraded and, as a consequence, the average waiting time increased from two to 28 days, and more HU kidney transplants used local or regional donor kidneys.

Table 3.6 Dynamics of the kidney high urgency waiting list in 1997

		Austria	Belgium	Germany	Luxemburg	Netherlands	Total 1997	Total 1996
Waiting list at the beginning of the year		0	0	0	0	0	0	9
Inflow	New High Urgency patients	8	1	48	0	7	64	67
	<i>Reasons for High Urgency</i>							
	<i>Dialysis access problems</i>	3	1	17	0	4	25	23
	<i>Dialysis morbidity</i>	0	0	12	0	0	12	25
	<i>Poor psychological condition</i>	1	0	14	0	1	16	9
	<i>Kidney failure post-kidney/pancreas transplant</i>	1	0	4	0	2	7	3
	<i>Other</i>	3	0	1	0	0	4	7
Outflow	High Urgency kidney transplants	7	1	42	0	5	55	60
	<i>Kidney-only</i>	7	1	41	0	5	54	60
	<i>Kidney/pancreas</i>	0	0	1	0	0	1	0
	Withdrawn from High Urgency waiting list	1	0	4	0	1	6	16
Waiting list at the end of the year		0	0	2	0	1	3	0

4. Thoracic organs: donation, waiting lists, and transplants

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4.1 Thoracic organ donors

4.1.1 Heart donors

Table 4.1 gives an overview of the fate of cadaveric hearts from the 1111 potential donors reported to the central office of Eurotransplant in 1997. Of the hearts accepted for transplantation 17% (N=163) were discarded during procurement. Hearts from a total of 803 donors were eventually transplanted, which represents an increase of 3.8% compared with 1996. Hearts from 42 donors were used in heart/lung transplants.

Only 6% of heart donors were aged over 55 years compared with 22% and 13% of kidney and liver donors, respectively (Table 4.2). One-fifth of the heart donors were taller than 180 cm.

4.1.2 Lung donors

Table 4.3 summarizes the fate of lungs from the 380 potential lung donors reported to the central office of Eurotransplant in 1997. Upon inspection, 22% of donor lungs were found to be unsuitable for transplantation. Lungs from 169 donors were ultimately transplanted, which is similar to the number of donors used in 1996. Approximately 18% of heart donors also donated lungs, and lungs from 42 donors were transplanted together with the heart. A single lung was transplanted from 23 donors and a total of 104 donors donated both lungs. Of these, 92 procedures were double lung transplants.

Only two lung donors (1%) were aged over 55 years (Table 4.4).

Table 4.1 Use of cadaveric donor hearts in the Eurotransplant region in 1997

Donor Eurotransplant country	Austria	Belgium	Germany	Luxemburg	Netherlands	Total 1997	Total 1996
Total no. of heart donors reported	124	162	689	4	132	1111	1052
No donor hearts procured	21	26	71	0	27	145	176
– No time for selection / offer withdrawn	3	5	3	0	3	14	8
– Medical reasons	16	17	48	0	20	101	125
– No suitable recipient due to donor size	0	3	6	0	2	11	14
– No suitable recipient due to donor blood group	0	0	0	0	0	0	1
– Centre out of capacity or recipient unfit	0	0	1	0	0	1	5
– Transport problems / other organizational reasons	2	1	5	0	1	9	8
– Cardiovascular instability of donor	0	0	8	0	1	9	15
Donor heart inspection/procurement:	103	136	618	4	105	966	876
No transplantation	18	10	110	1	24	163	103
– Organ unsuitable for transplantation	18	10	110	1	24	163	102
– No back-up recipient	0	0	0	0	0	0	1
Transplantation	85	126	508	3	81	803	773
– Donor for heart/lung	5	11	23	0	3	42	34
– Donor for heart	80	115	485	3	78	761	739

Table 4.2 Demographics of cadaveric heart donors in the Eurotransplant region in 1997

Country	Total	Age (years)			Sex		ABO Blood group				Cause of death		
		0–15	16–55	≥56	Male	Female	A	AB	B	O	Accident	Natural	Suicide
Austria	85	5	79	1	57	28	37	5	7	36	42	38	5
Belgium	126	10	106	10	86	40	57	6	8	55	51	58	17
Germany	508	39	433	36	301	207	226	24	63	195	228	246	34
Luxemburg	3	0	3	0	2	1	1	0	1	1	2	1	0
Netherlands	81	7	72	2	44	37	33	5	10	33	42	38	1
Total	803	61	693	49	490	313	354	40	89	320	365	381	57
	100%	8%	86%	6%	61%	39%	44%	5%	11%	40%	45%	48%	7%

Table 4.3 Use of cadaveric donor lungs in the Eurotransplant region in 1997

Donor Eurotransplant country	Austria	Belgium	Germany	Luxemburg	Netherlands	Total	Total	Total
						1997	1997	1996
Total no. of lung donors reported	59	52	208	1	60	380	386	
No donor lung procured	27	16	85	0	34	162	183	
– No time for selection / offer withdrawn	4	2	5	0	3	14	4	
– Medical reasons	19	13	58	0	25	115	132	
– No suitable recipient due to donor size	2	1	6	0	3	12	4	
– No suitable recipient due to donor blood group	0	0	5	0	1	6	0	
– Centre out of capacity or recipient unfit	0	0	4	0	2	6	28	
– Transport problems/other organizational reasons	1	0	4	0	0	5	9	
– Cardiovascular instability of donor	1	0	3	0	0	4	6	
Donor lung inspection/procurement: (either one or two lungs per donor)	32	36	123	1	26	218	203	
No transplantation	3	6	33	1	6	49	35	
– Organ unsuitable for transplantation	3	6	32	1	6	48	34	
– No back-up recipient	0	0	1	0	0	1	1	
Transplantation	29	30	90	0	20	169	168	
– Donor for heart/lung	5	11	23	0	3	42	34	
– Donor for double lung	15	13	51	0	13	92	92	
– Donor for single lung	4	4	12	0	3	23	27	
– Donor for two single lungs	5	2	4	0	1	12	15	

Table 4.4 Demographics of cadaveric lung donors in the Eurotransplant region in 1997

Country	Total	Age (years)			Sex		ABO Blood group				Cause of death		
		0–15	16–55	≥56	Male	Female	A	AB	B	O	Accident	Natural	Suicide
Austria	29	4	24	1	20	9	16	2	1	10	14	11	4
Belgium	30	2	27	1	16	14	15	0	2	13	8	16	6
Germany	90	6	84	0	54	36	46	0	15	29	46	37	7
Luxemburg	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	20	1	19	0	12	8	5	0	3	12	10	10	0
Total	169	13	154	2	102	67	82	2	21	64	78	74	17
	100%	8%	91%	1%	60%	40%	49%	1%	12%	38%	46%	44%	10%

4.2 Waiting lists

The number of heart transplant candidates on the active waiting list on December 31, 1997 was the same as in 1996 (N=744) (Table 4.5; Figure 4.1). A decrease in the Austrian waiting list of 42 candidates was balanced by an increase of 39 in the German waiting list. The heart/lung and lung waiting lists also did not change significantly between 1996 and 1997 (Tables 4.6, 4.7; Figure 4.2).

Characteristics of the heart waiting list include:

- At 12.9 patients per million inhabitants, Austria had the highest heart transplant waiting list in the Eurotransplant region in 1997.
- Patients with ABO blood group type A (ABO-A) made up 50% of the heart waiting list.
- Of all the organ waiting lists, the heart waiting list included the highest percentage of patients aged over 55 years (N=334; 45%).
- No patient in Belgium or The Netherlands was on the waiting list for more than one year.

Characteristics of the heart/lung waiting list include:

- Belgium had a higher number of patients on the heart/lung transplant waiting list compared with the other countries: 1.8 patients per million inhabitants.
- ABO-O patients constituted the majority of patients on the waiting list.
- As in 1996, about 40% of patients had been waiting for one year or more by the end of 1997.

While on the thoracic organ waiting lists, transplant candidates are assigned a medical urgency code that is used to prioritize them in the allocation procedure.

Code HU: high urgency

Patients whose heart graft fails within three days of transplantation. This code does not exist for lung transplant candidates. If a patient is on the HU list, the offer and exchange of a donor heart is mandatory.

Code SU: special urgency

Patients in a critical medical condition but not eligible for the HU code. There is no mandatory offer but, if a donor heart, heart/lung, and/or lung is made available to the Eurotransplant pool, SU patients have priority over elective patients. There is a restricted number of SU grants per year and per programme.

Code T: transplantable

Elective transplantable patients with end-stage heart and/or end-stage lung disease.

Code NT: not transplantable

This code is assigned whenever a patient has a temporary contraindication to transplantation. Temporary is defined as lasting a maximum of six months.

Table 4.5 Active heart transplant waiting list at 31 December 1997: characteristics

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Number		103	39	575	27	744	100%	744
Number per million inhabitants		12.9	3.9	7.2	1.8	6.6		6.6
Type of transplant	Heart-only	102	38	567	27	734	99%	737
	Heart/kidney	1	1	8	0	10	1%	7
Age (years)	0-5	0	0	8	0	8	1%	5
	6-15	0	0	3	0	3	–	2
	16-55	60	22	303	14	399	54%	406
	56+	43	17	261	13	334	45%	331
ABO blood group	A	39	17	298	15	369	50%	355
	AB	4	0	10	1	15	2%	24
	B	10	5	61	1	77	10%	83
	O	50	17	206	10	283	38%	282
Sequence	First	102	38	573	26	739	99%	735
	Repeat	1	1	2	1	5	1%	9
Time waiting (months)	0-5	46	34	316	19	415	56%	391
	6-11	26	5	134	8	173	23%	191
	12-23	25	0	111	0	136	18%	141
	24+	6	0	14	0	20	3%	21
Residency	Living in ET region	103	39	573	27	742	99%	738
	Living outside ET region	0	0	2	0	2	<1%	6

Table 4.6 Active heart/lung transplant waiting list at 31 December 1997: characteristics

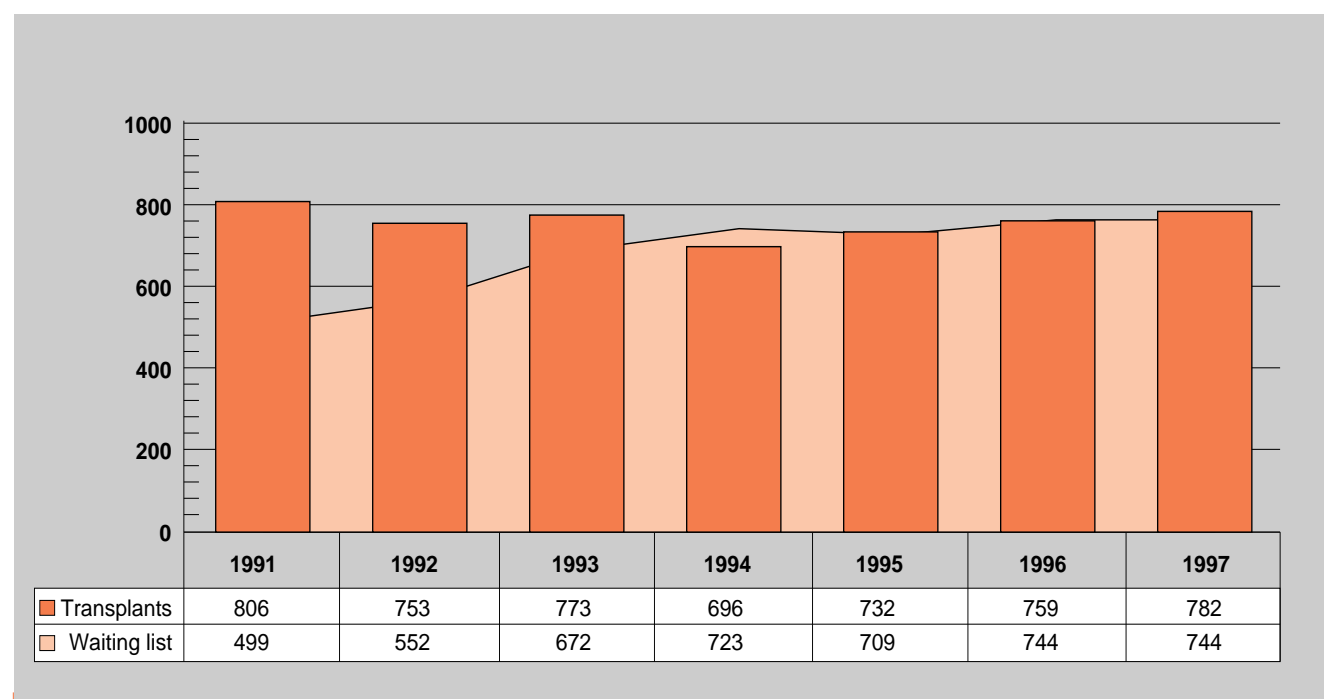
		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Number		1	18	45	2	66	100%	71
Number per million inhabitants		–	1.8	0.6	–	0.6		0.6
Type of transplant	Heart/lung	1	18	44	2	65	99%	70
	Heart/lung/liver	0	0	1	0	1	1%	1
Age (years)	6-15	0	0	4	0	4	6%	6
	16-55	1	16	38	2	57	86%	61
	56+	0	2	3	0	5	8%	4
ABO blood group	A	1	4	17	2	24	36%	24
	AB	0	0	1	0	1	1%	1
	B	0	5	4	0	9	14%	12
	O	0	9	23	0	32	49%	34
Sequence	First	1	18	45	2	66	100%	70
	Repeat	0	0	0	0	0	–	1
Time waiting (months)	0-11	1	14	25	1	41	62%	42
	12-23	0	3	11	0	14	21%	14
	24+	0	1	9	1	11	17%	15
Residency	Living in ET region	1	18	44	2	65	99%	69
	Living outside ET region	0	0	1	0	1	1%	2

Characteristics of the lung waiting list include:

- The Netherlands had the highest number of patients on the lung transplant waiting list: 4.1 patients per million inhabitants.
- Most patients on the lung waiting list (N=149; 69%) were awaiting double-lung transplantation. The small waiting list for single lung transplantation prevented 100% successful dual single-lung allocation.
- Thirty-two percent of patients had been on the waiting list for one year or more at the end of 1997.

Table 4.7 Active lung transplant waiting list at 31 December 1997: characteristics

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Number		21	18	115	62	216	100%	204
Number per million inhabitants		2.6	1.8	1.4	4.1	1.9		1.8
Type of transplant	Lung-only							
	Double	8	12	76	47	143	66%	156
	Double/right	0	0	0	2	2	1%	0
	Single left	3	3	5	2	13	6%	9
	Single right	0	1	15	11	27	13%	20
	Either single	10	1	15	0	26	12%	18
	Lung/liver							
	Double/liver	0	1	2	0	3	1%	1
	Single right/liver	0	0	1	0	1	–	0
	Lung/kidney							
	Double/kidney	0	0	1	0	1	–	0
Age (years)	6-15	0	0	4	2	6	3%	3
	16-55	17	15	92	51	175	81%	176
	56+	4	3	19	9	35	16%	25
ABO blood group	A	5	7	51	31	94	44%	95
	AB	0	1	2	2	5	2%	5
	B	5	1	7	5	18	8%	20
	O	11	9	55	24	99	46%	84
Sequence	First	20	17	105	60	202	94%	197
	Repeat	1	1	10	2	14	6%	7
Time waiting (months)	0-11	21	10	83	34	148	68%	107
	12-23	0	4	15	16	35	16%	60
	24+	0	4	17	12	33	16%	37
Residency	Living in ET region	18	17	115	62	212	98%	202
	Living outside ET region	3	1	0	0	4	2%	2



4.3 Inflow to the thoracic waiting list in 1997

There was no change in the number of new heart transplant registrations in each country in 1997 compared with 1996 (Table 4.8). Belgium registered 21 heart/lung transplant candidates in 1997 compared with only 12 in 1996, and heart/lung transplant registration was rare in Austria and The Netherlands (Table 4.9).

Registrations for a lung transplants increased by 33%, from 219 in 1996 to 292 in 1997, and the greatest increases occurred in Austria and Germany (Table 4.10).

Repeat thoracic transplantations remained low in all countries in the region in 1997.

Table 4.8 Heart transplant waiting list in 1997: inflow (registrations) and outflow

		Austria	Belgium	Germany	Netherlands	Total 1997	Total 1996
Registrations	Total	154	132	950	74	1310	1319
	<i>First transplant</i>	152	122	935	71	1280	1279
	<i>Repeat transplant</i>	2	10	15	3	30	40
<hr/>							
Outflow	Transplantation	92	106	531	53	782	759
	Mortality on the waiting list	41	14	225	14	294	293
	De-listing	44	25	150	8	227	200

Table 4.9 Heart/lung transplant waiting list in 1997: inflow (registrations) and outflow

		Austria	Belgium	Germany	Netherlands	Total 1997	Total 1996
Registrations	Total	3	21	51	1	76	71
	<i>First transplant</i>	3	21	51	1	76	70
	<i>Repeat transplant</i>	0	0	0	0	0	1
<hr/>							
Outflow	Transplantation	3	9	31	0	43	34
	Mortality on the waiting list	0	4	18	0	22	28
	De-listing	0	2	7	0	9	5

Table 4.10 Lung transplant waiting list in 1997: inflow (registrations) and outflow

		Austria	Belgium	Germany	Netherlands	Total 1997	Total 1996
Registrations	Total	51	27	175	39	292	219
	<i>First transplant</i>	48	25	164	37	274	211
	<i>Repeat transplant</i>	3	2	11	2	18	8
<hr/>							
Outflow	Transplantation	30	26	89	10	155	154
	Mortality on the waiting list	6	7	63	13	89	71
	De-listing	6	1	12	3	22	14

4.4 Outflow from the waiting list in 1997

4.4.1 Thoracic organ transplant activities

Heart transplants increased by 3% compared with 1996, and the increase was in line with the rise in the number of donors in the Eurotransplant region (Table 4.11). Nineteen transplants were carried out in neonates and small infants – a procedure only carried out in Germany.

Sixty-one percent of recipients (N=478) underwent heart transplantation within six months of joining the waiting list and a similar proportion of patients waited less than two years for their heart/lung transplants (N=34; 69%) (Tables 4.11, 4.12). With the exception of patients in The Netherlands, over three-quarters of people underwent lung transplantation within one year (N=119; 77%) (Table 4.13).

ABO-O donor hearts and lungs were used in 16% and 28%, respectively, of non-O recipients.

Transplant activities and exchange of thoracic donor organs are shown in detail in the Addenda.

Table 4.11 Heart transplants in 1997: characteristics

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Cadaveric heart transplants		92	106	531	53	782	100%	759
Type of transplant	Heart only	90	104	526	53	773	99%	750
	Heart/kidney	2	2	5	0	9	1%	9
Urgency code	HU	1	1	4	0	6	1%	12
	SU	11	18	58	1	88	11%	116
	Transplantable	80	87	469	52	688	88%	631
Age (years)	0–5	0	0	19	0	19	2%	22
	6–15	2	0	12	0	14	2%	26
	16–55	47	56	265	38	406	52%	371
	56+	43	50	235	15	343	44%	340
ABO blood group	A	39	50	241	27	357	46%	332
	AB	7	5	43	3	58	7%	42
	B	15	10	79	6	110	14%	104
	O	31	41	168	17	257	33%	281
Sequence	First	89	99	521	52	761	97%	725
	Repeat	3	7	10	1	21	3%	34
Time waiting (months)	0–5	51	80	312	35	478	61%	455
	6–11	19	19	103	14	155	20%	155
	12–23	16	6	87	4	113	14%	131
	24+	6	1	29	0	36	5%	18
Residency	Living in ET region	92	102	528	53	775	99%	746
	Living outside ET region	0	4	3	0	7	1%	13

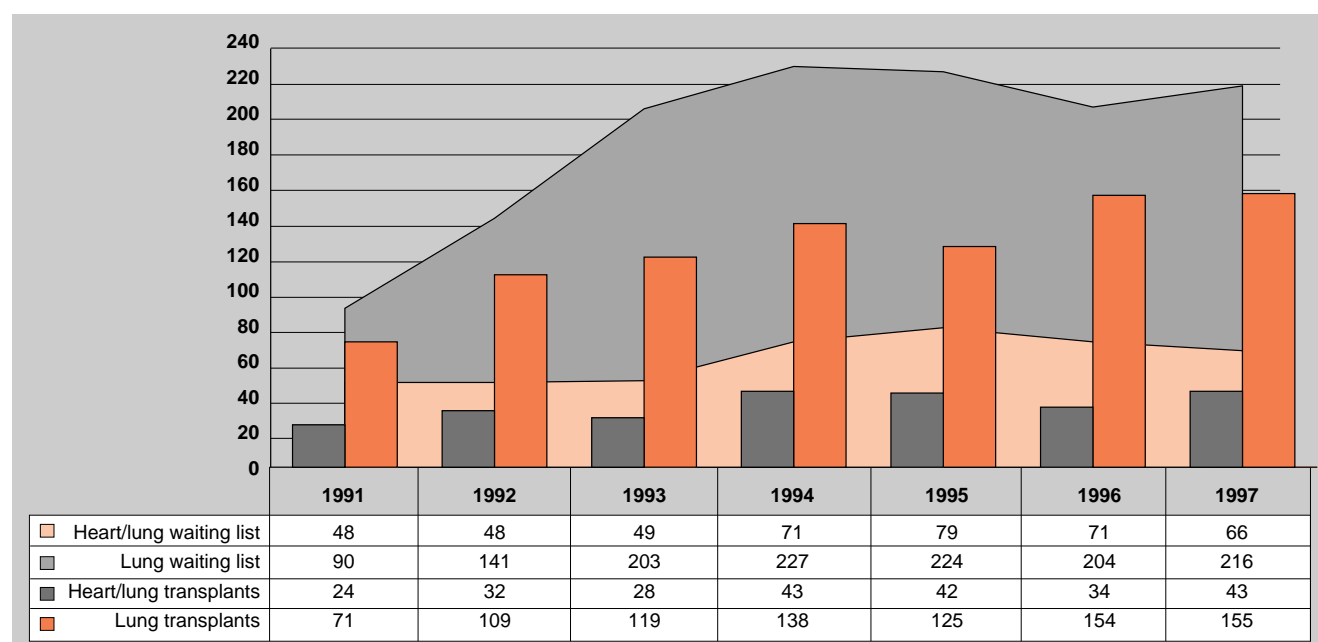


Figure 4.2 Dynamics of the Eurotransplant active heart/lung waiting list and heart/lung transplants and Eurotransplant active lung waiting list and cadaveric lung transplants between 1991 and 1997

Table 4.12 Heart/lung transplants in 1997: characteristics

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Heart/lung transplants		3	9	31	0	43	100%	34
Type of transplant	Heart/lung	3	9	30	0	42	98%	34
	Heart/lung/liver	0	0	1	0	1	2%	0
Urgency code	SU	1	1	4	0	6	14%	4
	Transplantable	2	8	27	0	37	86%	30
Age (years)	0-15	0	0	1	0	1	2%	4
	16-55	2	8	30	1	40	93%	30
	56+	1	1	0	0	2	5%	0
ABO blood group	A	1	5	15	0	21	49%	17
	AB	0	0	0	0	0	–	2
	B	1	1	3	0	5	12%	4
	O	1	3	13	0	17	39%	11
Sequence	First	3	9	31	0	43	100%	34
	Repeat	0	0	0	0	0	0%	0
Time waiting (months)	0-11	1	6	16	0	23	44%	21
	12-23	2	2	7	0	11	25%	11
	24+	0	1	8	0	9	21%	2
Residency	Living in ET region	3	9	30	0	42	98%	32
	Living outside ET region	0	0	1	0	1	2%	2

Table 4.13 Lung transplants: characteristics in 1997

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Lung transplants		30	26	89	10	155	100%	154
Type of transplant	Lung-only	30	26	88	10	154	98%	154
	Lung/liver	0	0	1	0	1	2%	0
Lung type	Double	18	13	61	9	101	65%	98
	Single left	8	7	10	0	25	16%	33
	Single right	4	6	18	1	29	19%	23
Urgency code	HU	–	–	–	–	–	–	5
	SU	4	1	13	0	18	12%	17
	Transplantable	26	25	76	10	137	88%	132
Age (years)	6-15	0	0	3	0	3	2%	6
	16-55	26	18	67	9	120	77%	109
	56+	4	8	19	1	32	21%	39
ABO	A	19	17	50	5	91	59%	65
	AB	1	1	5	1	8	5%	13
	B	4	1	13	1	19	12%	20
	O	6	7	21	3	37	24%	56
Sequence	First	29	25	85	10	149	96%	146
	Repeat	1	1	4	0	6	4%	8
Time waiting (months)	0-5	25	17	51	1	94	61%	80
	6-11	3	7	15	0	25	16%	19
	12-23	2	2	14	9	27	17%	30
	24+	0	0	9	0	9	6%	15
Residency	Living in ET region	27	26	89	10	152	98%	148
	Living outside ET region	3	0	0	0	3	2%	6

4.4.2 Mortality on the waiting list and de-listing

Mortality of patients on the heart transplant waiting list (N=294) was similar to that in 1996 (N=293); 65% of patients died within the first six months of joining the list (Table 4.8). De-listing due to improved medical condition occurred in 154 cases (68%), on average 15 months after registration.

There was a major increase in mortality among patients awaiting lung transplant, from 71 in 1996 to 89 in 1997, and 42% of patients died within 90 days of registration (Table 4.10). Similar mortality rates were seen among patients on the heart/lung waiting list – 50% of the patients died shortly after registration (Table 4.11). In general, patients were removed from the heart/lung and lung waiting lists as soon as they became unsuitable for transplant. Removal from the heart/lung waiting list also encompassed patients who were switched from the heart/lung transplant procedure to the double-lung procedure.

4.5 Thoracic high urgency programme

Nine High Urgency (HU) heart transplants were requested in 1997 (Table 4.14). Three of these grafts recovered following initial poor function shortly after the HU request was made, and the remaining six patients all received new transplants.

4.6 Thoracic special urgency programme

Transplants were carried out in 77%, 75%, and 50% of Special Urgency (SU) heart, heart/lung, and lung patients, respectively (Table 4.15). Thanks to the assignment of a restricted number of grants per centre per year and the usage of a heart give-back ('pay-back') procedure, the number of SU heart transplants did not surpass the threshold of 15% of the total heart transplant activity of Eurotransplant in 1997 (Table 4.11).

The average waiting time of SU heart, heart/lung, and lung transplant patients was seven, 74, and 19 days, respectively. Mortality rates on the SU lung waiting list remained high in 1997.

Table 4.14 Dynamics of the high urgency thoracic organ waiting lists, from 1993 to 1997

		Requests	Transplants	Deaths on HU waiting list	Withdrawals from HU waiting list
Heart	1993	15	7	2	6
	1994	8	5	2	1
	1995	16	11	2	3
	1996	20	12	6	2
	1997	9	6	0	3
Heart/lung	1993	1	0	1	0
	1994	1	0	0	1
	1995	1	0	1	0
	1996	0	0	0	0
	1997	0	0	0	0
Lung	1993	6	4	1	1
	1994	0	0	0	0
	1995	3	3	0	0
	1996	5	5	0	0
	1997	–	–	–	–

Table 4.15 Dynamics of the special urgency thoracic organ waiting lists, from 1993 to 1997

		On waiting list on January 1	Requests	Transplants	Deaths on SU waiting list	Withdrawals from SU waiting list	On waiting list on December 31
Heart	1993	2	125	104	12	10	1
	1994	1	119	97	10	10	3
	1995	3	144	107	15	14	11
	1996	11	145	116	12	26	2
	1997	2	112	88	8	15	3
Heart/lung	1993	0	7	4	1	1	1
	1994	1	6	4	2	1	0
	1995	0	14	8	3	2	1
	1996	1	11	4	2	2	4
	1997	4	4	6	1	1	0
Lung	1993	1	24	17	4	3	1
	1994	1	18	14	1	3	1
	1995	1	28	19	6	3	1
	1996	1	34	18	8	6	3
	1997	3	33	18	10	6	2

5. Liver: donation, waiting lists and transplants

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5.1 Liver donors

Table 5.1 shows the fate of livers from the 1325 potential cadaveric liver donors reported to the central office of Eurotransplant in 1997. As in 1996, 92% of donor livers were accepted. However, 19% (N=236/1217) were discarded at the time of procurement and the proportion discarded rose to 38% for donors aged over 55 years (N=78/203). The total number of donors whose livers were transplanted increased by 5% compared with 1996. Thirty-nine donor livers were divided ('splitted') and transplanted into two recipients.

Liver donors closely resembled kidney donors in terms of demographics (Tables 3.2, 5.2). Half of paediatric donors (age 0-15 years) weighed more than 40 kg.

As in 1996, simultaneous heart and liver donation was accomplished from 77% of heart donors and 63% of liver donors.

Table 5.1 Use of cadaveric donor livers in the Eurotransplant region in 1997

Donor Eurotransplant country	Austria	Belgium	Germany	Luxemburg	Netherlands	Total 1997	Total 1996
Total no. of liver donors reported	143	215	785	3	179	1325	1223
No donor liver procured:	10	19	63	0	16	108	97
– No time for selection or offer withdrawn	2	5	0	0	1	8	9
– Medical reasons	7	13	55	0	14	89	63
– No suitable recipient due to donor size	0	0	5	0	0	5	4
– No suitable recipient due to donor blood group	0	0	2	0	0	2	2
– Centre out of capacity or recipient unfit	1	0	0	0	0	1	5
– Transport problems or other organizational reasons	0	1	0	0	0	1	1
– Cardiovascular instability of donor	0	0	1	0	1	2	13
Donor liver inspection/procurement:	133	196	722	3	163	1217	1126
No transplantation	24	22	174	0	18	238	192
– Organ unsuitable for transplantation	24	22	172	0	18	236	192
– No back-up recipient (positive cross-match)	0	0	2	0	0	2	0
Transplantation	109	174	548	3	145	979	934
– Split-liver donors	3	3	27	0	6	39	31
– Liver donors	106	171	521	3	139	940	903

Table 5.2 Demographics of cadaveric liver donors in the Eurotransplant region in 1997

Country	Total	Age (years)			Sex		ABO Blood group				Cause of death		
		0–15	16–55	≥56	Male	Female	A	AB	B	O	Accident	Natural	Suicide
Austria	109	6	98	5	74	35	46	7	11	45	46	55	8
Belgium	174	14	130	30	115	59	77	7	8	82	58	94	22
Germany	548	39	430	79	311	237	240	25	68	215	221	290	37
Luxemburg	3	0	3	0	2	1	1	0	1	1	1	2	0
Netherlands	145	16	118	11	82	63	59	7	16	63	64	79	2
Total	979	75	779	125	584	395	423	46	104	406	390	520	69
	100%	7%	80%	13%	60%	40%	43%	5%	11%	41%	40%	53%	7%

5.2 Waiting list

The number of patients on the active waiting list on December 31, 1997 increased by 14% compared with 1996 (Table 5.3; Figure 5.1).

The waiting list showed the following (Table 5.3):

- It included fewer paediatric patients in 1997 (N=28) than in 1996 (N=46). Nevertheless, at 8%, the percentage of paediatric transplant candidates was highest for the liver waiting list compared with the other lists.
- 28% of patients waited for six months or more prior to transplantation at the end of 1997.
- The number of non-residents, defined as patients who neither lived nor were being treated in one of the Eurotransplant countries, was 26 (7%).

Table 5.3 Active cadaveric liver transplant waiting list at 31 December 1997: characteristics

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Number		47	44	256	27	374	100%	327
Number per million inhabitants		5.8	4.4	3.2	1.8	3.3		2.9
Type of transplant	Liver-only	47	40	232	27	346	93%	310
	Liver/kidney	0	3	18	0	21	6%	16
	Liver/lung	0	1	3	0	4	1%	1
	Liver/pancreas	0	0	2	0	2	–	0
	Liver/heart/lung	0	0	1	0	1	–	0
Age (years)	0-5	3	4	8	3	18	5%	35
	6-15	0	2	5	3	10	3%	11
	16-55	32	23	180	16	251	67%	207
	56+	12	15	63	5	95	25%	74
ABO blood group	A	16	16	105	6	143	38%	117
	AB	2	2	2	0	6	2%	13
	B	7	6	34	1	48	13%	47
	O	22	20	115	20	177	47%	150
Sequence	First	47	44	244	25	360	96%	308
	Repeat	0	0	12	2	14	4%	19
Time waiting (months)	0-2	30	19	113	15	177	47%	182
	3-5	6	11	70	6	93	25%	63
	6-11	10	5	46	4	65	17%	55
	12+	1	9	27	2	39	11%	27
Residency	Living in ET region	41	33	247	27	348	93%	309
	Living outside ET region	6	11	9	0	26	7%	18

While on the waiting list, liver transplant candidates are assigned medical urgency codes that are used to prioritize them in the liver allocation procedure. The codes are:

Code HU: high urgency

Patients with *de novo* hepatic failure ranging from acute to fulminant onset, including rapidly progressive Wilson's disease and Budd-Chiari disease, patients in need of a repeat transplant due to an irreversible life-threatening graft failure (within 14 days of the previous transplant), patients with severe hepatic trauma, and anhepatic patients. Patients with liver tumours are not eligible for an HU request. If a patient is on the HU waiting list, the offer and exchange of a donor liver is mandatory.

Code T: Transplantable

Elective transplantable patients with end-stage liver disease.

Code NT: Not transplantable

This code is assigned to patients with a temporary contraindication to liver transplant.

5.3 Inflow to the liver waiting list in 1997

1997 saw an increase in first liver transplants which, in turn, led to an increase in the overall number of registrations for cadaveric liver transplants of 5% compared with 1996 (Table 5.4). Living donor liver transplants are not included in the statistics, with the exception of patients who ultimately received a domino liver transplant.

More than half of the registrations for repeat liver transplants were HU requests (N=109/195; 56%) (Table 5.6).

Table 5.4 Liver transplant waiting list in 1997: inflow (registrations) and outflow

Liver Waiting List		Austria	Belgium	Germany	Netherlands	Total 1997	Total 1996
Registrations	Total	186	167	1011	104	1468	1393
	<i>First transplant</i>	173	150	864	86	1273	1196
	<i>Repeat transplant</i>	13	17	147	18	195	197
<hr/>							
Outflow	Transplantation (cadaveric donor)	131	139	738	89	1097	1032
	Mortality on the waiting list	27	30	151	13	221	200
	De-listing	15	38	67	6	126	111

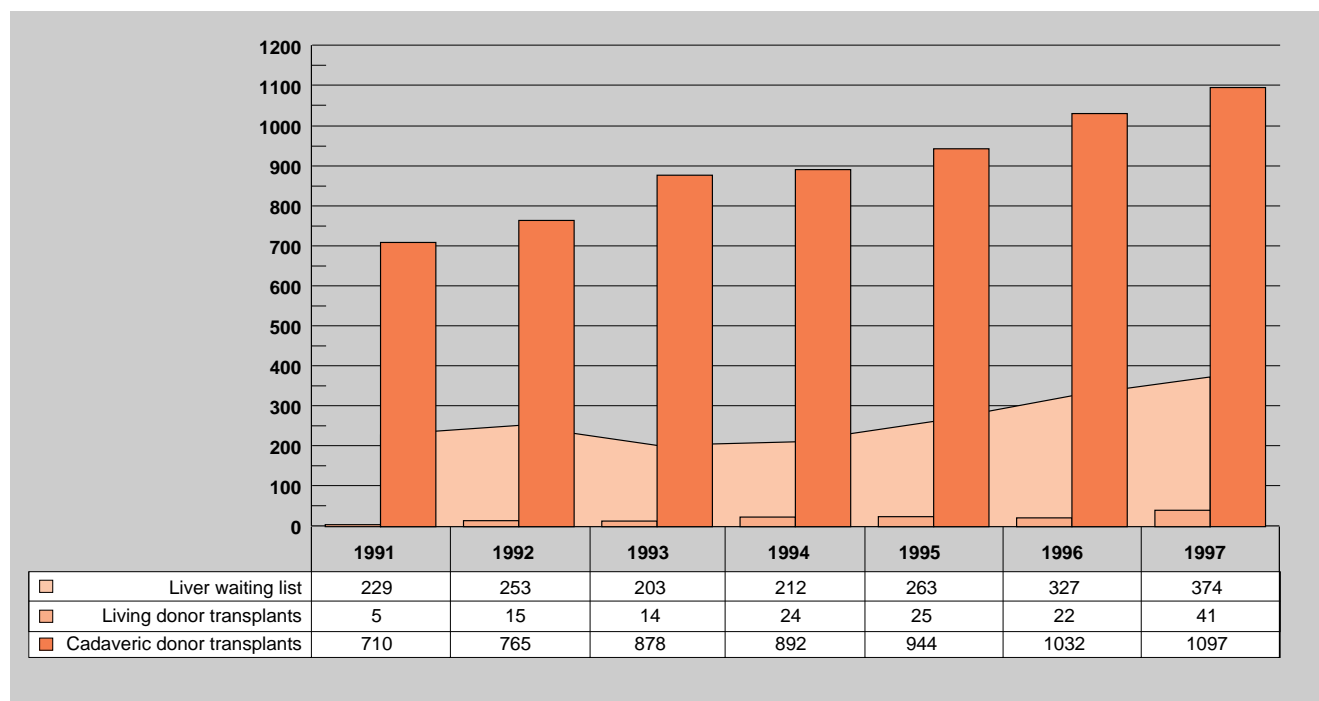


Figure 5.1 Dynamics of the Eurotransplant liver waiting list and liver transplants between 1991 and 1997

5.4 Outflow from the liver waiting list in 1997

5.4.1 Liver transplant activities

The increased number of cadaveric liver donors in the Eurotransplant region in 1997 enabled more liver transplants to be carried out – 6% more than in 1996. The contribution from twinning centres outside the Eurotransplant region was similar to 1996 – 55 transplants in 1997 compared with 50 in 1996. Importantly, centres in Hamburg and Hannover in Germany played a leading role in the development of cadaveric split-liver transplants.

Other points to note are (Table 5.5):

- Split-liver transplants accounted for 7% of the total liver transplant activity.
- The majority of paediatric liver recipients (N = 71/108) were younger than six years of age.
- Only 50 ABO blood group type O (ABO-O) donor livers (11%) were transplanted into non-O liver patients, compared with 16% in 1996. Three ABO-incompatible liver transplants were carried out.
- Repeat liver transplants constituted 13% of the total number of transplants. This figure was 26% in paediatric liver transplants.
- Excluding HU transplants, 62% of recipients received a transplant within three months of registration.
- Transplants in non-Eurotransplant residents accounted for 7% of the total liver transplant activity.

Transplant activities and liver exchange by country and by centre are shown in detail in the Addenda.

5.4.2 Mortality on the waiting list and de-listing

The number of liver transplant candidates who died while on the waiting list in 1997 was 221, of whom 78% were awaiting a first liver transplantation (Table 5.4). The majority (83%) of deaths occurred within six months of registration.

In 1997, 126 patients were removed from the waiting list for a variety of reasons, including: they were poor transplant candidates, they recovered liver function, or they underwent domino liver transplant.

5.5 Living donor liver transplants

Centres in Brussels (LA) and Hamburg further expanded their programmes of living-related segmental liver transplantation. In Hannover, four domino liver transplants were performed using the native liver of a patient who underwent a liver transplant due to familial amyloid neuropathy.

In cases of living related transplants, mothers and fathers were equally likely to donate liver segments to their children (Table 5.5). The majority of patients who received a living donor transplant were younger than five years of age.

Table 5.5 Liver transplants in 1997: characteristics

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
<i>Cadaveric donor liver transplants</i>		131	139	738	89	1097	100%	1032
Type of transplant	Liver whole	123	128	653	88	992	90%	949
	Liver split	4	8	67	1	80	7%	64
	Liver split/kidney	–	–	1	–	1	–	1
	Liver/kidney	2	3	14	–	19	2%	18
	Liver/pancreas	2	–	1	–	3	–	0
	Liver/lung	–	–	1	–	1	–	0
Liver/heart/lung	–	–	1	–	1	–	0	
Urgency code	HU-first	4	12	54	12	82	7%	117
	HU-repeat	6	5	64	8	83	7%	83
	Transplantable	121	122	620	69	932	86%	832
Age (years)	0-5	7	15	44	5	71	6%	65
	6-15	0	6	24	7	37	4%	42
	16-55	79	80	471	61	691	63%	653
	56+	45	38	199	16	298	27%	272
ABO blood group	A	61	52	343	30	486	44%	435
	AB	9	4	54	0	67	6%	63
	B	15	14	100	11	140	13%	130
	O	46	69	241	48	404	37%	404
Sequence	First	123	126	628	74	951	87%	886
	Repeat	8	13	110	15	146	13%	146
<i>Patients</i>		<i>124</i>	<i>134</i>	<i>663</i>	<i>81</i>	<i>1002</i>	–	–
Time waiting (months)	0-2	97	94	498	55	744	68%	741
	3-5	22	24	126	19	191	17%	151
	6-11	12	17	73	10	112	10%	98
	12+	0	4	41	5	50	5%	42
Residency	Living in ET region	120	98	709	89	1016	93%	946
	Living outside ET region	11	41	29	0	81	7%	86
<i>Living donor liver transplants</i>		2	17	24	0	43	100%	22
Relationship	Father	1	7	10	0	18	42%	10
	Mother	1	9	10	0	20	46%	9
	Other relatives	0	1	0	0	1	2%	1
	Unrelated	0	0	0	0	0	–	1
	Domino	0	0	4	0	4	10%	1
Age (years)	0-5	2	15	19	0	36	84%	19
	6-15	0	2	1	0	3	7%	2
	16-55	0	0	1	0	1	2%	0
	56+	0	0	3	0	3	7%	1
ABO blood group	A	0	4	9	0	13	30%	10
	AB	0	3	4	0	7	16%	0
	B	1	3	4	0	8	19%	2
	O	1	7	7	0	15	35%	10
Sequence	First	2	17	23	0	42	97%	22
	Repeat	0	0	1	0	1	3%	0
<i>Total liver transplant activity</i>		<i>133</i>	<i>156</i>	<i>762</i>	<i>89</i>	<i>1140</i>		<i>1054</i>

5.6 Liver high urgency programme

In 1997, High Urgency (HU) liver requests constituted 15% of the total number of entries on the waiting list (N=218/1468) (Table 5.6). There were significantly fewer HU requests for a first liver transplant than in 1996. Despite an adaptation of the eligibility criteria for a HU repeat transplant which now requires a graft failure less than 14 days after the first transplant, no reduction in the number of HU repeat transplants occurred in 1997. Compared to an HU first liver transplant, an HU repeat liver transplant was more likely to be requested for paediatric patients (67%) than adults (47%).

The chance to receive a transplant, while on the HU waiting list was 76% and 81% of the transplants took place within 48 hours. The mortality rate on the HU waiting list was approximately 12%.

Table 5.6 Dynamics on the 'High Urgency' liver waiting list, from 1992 to 1997

Year	HU requests	Transplants	Deaths on HU waiting list	Withdrawals from HU waiting list
1992	190	136	13	41
1993	235	203	15	17
1994	221	165	31	25
1995	198	164*	23	11
1996	257	201*	25	31
1997	218	165	26	27
Reason for HU liver transplant				
Subacute-fulminant hepatic failure (first transplant)				
1992	108	72	9	27
1993	124	105	11	8
1994	121	94	12	15
1995	116	91*	18	7
1996	146	118*	14	14
1997	109	82	15	12
Irreversible graft failure (repeat transplant)				
1992	82	64	4	14
1993	111	98	4	9
1994	100	71	19	10
1995	82	73	5	4
1996	111	83	11	17
1997	109	83	11	15

* One liver transplant was performed in the next calendar year

6. Pancreas: donation, waiting lists, and transplants

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6.1 Pancreas donors

In 1997, 793 pancreas donors were reported to the central office of Eurotransplant (Table 6.1). More attention was paid to clinical transplantation in 1997 than in previous years and about 80% of all pancreases from donors aged 10–50 years were offered to clinical transplant programmes. Thirty-two percent of all donor pancreases accepted for transplantation (N=94/297) were found to be unsuitable at the time of procurement and, ultimately, pancreases from 203 donors were used in a whole pancreas transplant, which was an increase of nearly 50% compared with 1996.

Fifty-three pancreases were processed to produce pancreatic islet suspensions that were used in 22 transplants. Islet transplant practices vary from the use of only one pancreas per transplant to multiple pancreases per procedure.

Donor activity and availability in the pancreas research programmes, by country and centre, are shown in the Addenda.

6.2 Waiting list

The overall number of patients on the active waiting list for a pancreas transplant increased by 6% (N=12) compared with 1996; a significant increase in the pancreas (/kidney) waiting list of 27 patients was balanced by a decrease in the islet (/kidney) waiting list of 15 patients (Table 6.2).

Table 6.1 Use of donor pancreases in the Eurotransplant region in 1997

Donor Eurotransplant country	Austria	Belgium	Germany	Luxemburg	Netherlands	Total 1997	Total 1996
Total no. of pancreas donors reported	65	162	419	2	145	793	674
No pancreas donor procurement:	12	19	92	0	22	145	177
– No time for selection or offer withdrawn	0	3	4	0	2	9	7
– Medical reasons	6	11	54	0	13	84	105
– No suitable recipient: size or blood group	0	0	1	0	0	1	1
– Centre/bank out of capacity or recipient unfit	3	0	23	0	4	30	47
– Transplant problems or other organizational reasons	2	5	7	0	2	16	13
– Donor cardiovascular instability	1	0	3	0	1	5	4
Pancreas donor inspection/procurement:	53	143	327	2	123	648	497
No transplantation/research	19	25	98	0	18	160	81
– Organ unsuitable for transplantation	17	11	56	0	10	94	46
– Organ unsuitable for research	2	14	42	0	8	66	34
– No back-up recipient (positive cross-match)	0	0	0	0	0	0	1
Whole pancreas transplantation	30	30	112	0	31	203	139
Research and islet transplantation	4	88	117	2	74	285	277
– β cell project, Brussels	4	86	60	2	56	208	221
– Islet transplants (one transplant/multiple donors)	–	–	–	–	–	5	3
– Pancreas islet research, GieBen	0	1	25	0	2	28	32
– Islet transplants (one transplant/one donor)	–	1	14	–	2	17	11
– Local and other pancreas banks	0	1	32	0	16	49	24
– Islet transplants	–	–	–	–	–	0	1

The characteristics of the pancreas/kidney waiting list on December 31, 1997 (N=121) are shown in Table 6.2:

- Of the patients on the pancreas/kidney waiting list, 52% (N=63) were ABO blood group type O.
- Twelve patients had a current % panel reactive antibodies (PRA) level of 6% or more.
- Waiting time of one year or more was rare (N=13; 10%).

Table 6.2 Active pancreas transplant waiting list on December 31, 1997: characteristics

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Number		25	37	128	4	194		182
Type of transplant	Pancreas/kidney	20	20	77	4	121		98
	Islet/kidney	1	–	5	–	6		12
	Pancreas/liver	–	–	2	–	2		0
	Pancreas-only	4	1	8	–	13		10
	Islet-only	–	16	36	–	52		62
Pancreas/kidney waiting list		20	20	77	4	121	23%	98
Age (years)	16–40	10	11	42	2	65	54%	56
	41+	10	9	35	2	56	46%	42
ABO blood group	A	3	8	26	2	39	32%	45
	AB	0	2	2	0	4	3%	0
	B	4	4	7	0	15	12%	14
	O	13	6	42	2	63	52%	39
% PRA current	0–5%	16	16	73	3	108	90%	85
	6–84%	2	3	3	1	9	7%	9
	85–100%	1	1	1	0	3	3%	1
	Not yet reported	1	0	0	0	1	–	3
Time waiting as pancreas/kidney (months)	0–5	11	7	57	2	77	64%	56
	6–11	5	7	18	1	31	26%	28
	12–23	2	3	2	1	8	6%	9
	24+	2	3	0	0	5	4%	5

6.3 Inflow to the pancreas waiting list during 1997

The number of registrations for a pancreas transplant in 1997 was 53% higher than in 1996 (Table 6.3). Austria and Germany showed particularly high increases in the number of registrations: from 21 to 34 in Austria and from 121 to 205 in Germany. The vast majority of registrations were for pancreas/kidney transplants and about 8% of registrations were for pancreas re-transplantation, with an equal ratio of pancreas-only to pancreas/kidney re-transplants. The waiting list for islet transplants is currently maintained by: Brussels Jette, Belgium (Prof. Dr. D. Pipeleers), Gießen, Germany (Prof. Dr. R. Bretzel), and Innsbruck, Austria (Prof. Dr. R. Margreiter).

6.4 Outflow from the pancreas waiting list in 1997

6.4.1 Pancreas transplant activities

For the second year in a row, pancreas/kidney transplant activity significantly increased from 131 transplants in 1996 to 189 in 1997 (+ 44%) (Table 6.4; Figure 6.1). Similarly, pancreas-only, pancreas/liver, islet-only, and islet/kidney transplants constituted approximately 15% of the total pancreas transplant activity.

Table 6.4 shows the characteristics of the pancreas/kidney transplants carried out in 1997 (N=189), and the following points should be noted:

- Belgian transplant programmes adhered to a limited number of HLA-antigen mismatches.
- Patient selection was determined by waiting time and 47% of patients had a waiting time of six months or more.

The majority of patients received a first kidney and first pancreas transplant (N=179; 95%).

Transplant activities and pancreas exchange, per country and per centre, are shown in detail in the Addenda.

Table 6.3 Pancreas transplant waiting list in 1997: inflow (registrations) and outflow

		Austria	Belgium	Germany	Netherlands	Total 1997	Total 1996
Registrations	Total	34	30	217	19	300	219
	Pancreas	34	27	205	19	285	186
	<i>First pancreas transplant</i>	28	25	191	19	263	174
	<i>Repeat pancreas transplant</i>	6	2	14	0	22	12
	Islet						
	<i>First islet transplant</i>	0	3	12	0	15	33
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Outflow	Transplantation	25	20	163	18	226	154
	Mortality on the waiting list	0	1	4	0	5	9
	De-listing	2	6	25	7	40	22

Table 6.4 Pancreas transplants in 1997: characteristics

		Austria	Belgium	Germany	Netherlands	Total 1997	%	Total 1996
Number		25	20	163	18	226		154
Type of transplant	Pancreas/kidney	21	15	135	18	189		131
	Islet/kidney	–	–	13	–	13		9
	Pancreas-only	2	–	10	–	12		8
	Islet-only	–	5	4	–	9		6
	Pancreas/liver	2	–	1	–	3		0
Pancreas/kidney transplants		21	15	135	18	189	100%	131
HLA-A, B, DR mismatch	0	1	0	0	0	1	1%	1
	1	0	1	6	0	7	4%	4
	2	0	4	15	3	22	12%	11
	3	2	5	25	1	33	17%	30
	4	10	4	36	5	55	29%	41
	5	7	0	35	2	44	23%	33
	6	1	1	18	7	27	14%	11
Age (years)	16-40	15	11	87	11	124	66%	87
	41+	6	4	48	7	65	34%	44
ABO blood group	A	9	5	71	8	93	49%	49
	AB	1	0	9	0	10	5%	3
	B	4	5	19	1	29	16%	13
	O	7	5	36	9	57	30%	66
% PRA prior to transplant	0-5%	16	15	128	17	176	93%	123
	6-84%	5	0	6	1	12	6%	8
	85-100%	0	0	1	0	1	1%	8
Time waiting as pancreas/kidney (months)	0-5	14	3	79	4	100	53%	106
	6-11	3	7	40	7	57	30%	16
	12-23	4	5	12	7	28	15%	8
	24+	0	0	4	0	4	2%	1

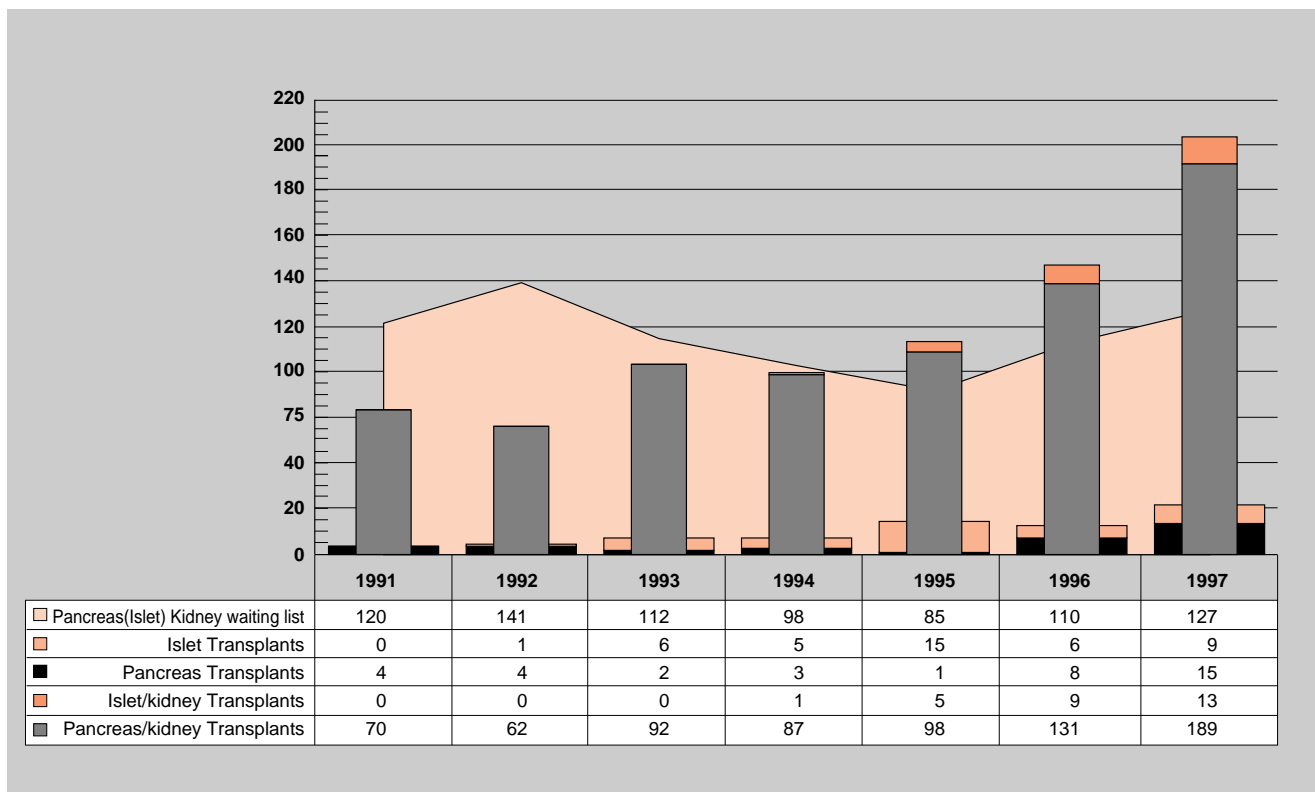


Figure 6.1 Dynamics of the Eurotransplant pancreas/kidney and islet/kidney waiting list, pancreas/kidney, islet/kidney, pancreas and islet-only transplants between 1991 and 1997

6.4.2 Mortality on the waiting list and de-listing

Mortality on the waiting list was low (N=5), since waiting time was short and patients were frequently removed from the list (N=40) (Table 6.3). Patients were removed from the list when they failed to meet the pancreas/kidney transplant criteria or they were no longer eligible for a pancreas transplant but were still eligible for a kidney transplant.

7. Histocompatibility testing

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7.1 Introduction

Improvement in the quality of tissue typing, screening, and crossmatching is the ongoing task of the Eurotransplant Reference Laboratory (ETRL). This task is addressed by organizing quality control exercises (proficiency testing programmes) for the tissue typing centres (TTC) participating in Eurotransplant, initiating studies, and discussing possible new recommendations within the Tissue Typing Advisory Committee (TTAC).

7.2 Eurotransplant proficiency testing

The quality control schemes applied in 1997 to determine the individual performance of the TTCs are reported below.

7.2.1 Quality control exercise on HLA typing

In 1997, 16 cell suspensions were sent out to the TTCs. Each TTC received eight samples for analysis and was asked to report the results within one month of dispatch.

Almost all laboratories reported the results on time. The 75% consensus rule, as requested by the European Federation of Immunogenetics (EFI) and implemented for the present exercise, facilitated the acceptance of possible discrepancies. A consensus was obtained for all HLA-A, B, and DR 'broad' antigens. In total, 382 HLA typings were evaluated and the results are summarized in Table 7.1.

Table 7.1 Quality control exercise on HLA typing

Locus	Total N Typings	N Discrepant	% Discrepancy
HLA-A	382	5	1.3
HLA-B	382	11	2.9
HLA-DR	382	3	0.8

The results are very similar to those obtained in 1996. It is striking that HLA-DR typing is at present more reliable than typing for HLA-A or B. This is presumably due to the introduction of molecular techniques in the TTCs.

7.2.2 Quality control exercise on HLA typing

Two exercises (DNA#09 and DNA#10; 10 samples each) were sent to 49 participants. DNA was isolated from either from organ donor spleens, peripheral blood from healthy blood donors, or cell lines. Some rare alleles and rare haplotypes were included. Only one laboratory was not yet able to perform DNA typing and therefore did not submit results.

In total, 15 HLA-DRB1* 'broad' discrepancies were observed. The majority of the discrepancies were found in a small number of specific samples (Table 7.2).

Table 7.2 Quality control exercise on HLA-DR typing by DNA: problem case

DNA#1005 with five discrepancies	
Correct typing:	DRB1*0701,1421
Major discrepancy:	DRB1*0701,0301
Minor discrepancy:	DRB1*0701,1310/new
	DRB1*0701,1417/1406

This exercise revealed that DNA typing is a very powerful technique. However, a significant number of participants overestimated the method and reporting data without naming the HLA locus, which is not acceptable. Similarly, local nomenclatures must be avoided; notation such as DRB1*0401-0421 is inaccurate. In this case the correct typing report for the allele is DRB1*04.

7.2.3 Quality control exercise on crossmatching

As in the past, TTCs participating in the quality control exercise were asked to perform crossmatches using cells provided and four different Eurotransplant patient sera selected by the ETRL. The TTCs used local crossmatch techniques to simulate day-to-day practice. In total 24 sera were to be crossmatched by each TTC (Table 7.3).

Table 7.3 Quality control exercise on crossmatching

Total number of sera crossmatched	1052
Number of crossmatches carried out without DTT	977
Number of crossmatches carried with DTT	906

DTT = Dithiothreitol; reagent that destroys antibodies of the IgM type.

The exercises for the period 1996-1997 showed that mixtures of antibodies (IgG and IgM), HLA-DR, DQ, DP specific antibodies, as well as mixtures of auto- and allo-antibodies caused problems (Table 7.4). Clerical errors were also observed and some centres reported the scoring but no interpretation of their results. More effort is therefore needed to improve crossmatching.

Table 7.4 Quality control exercise on crossmatching: results

	Crossmatch without DTT N*	Crossmatch with DTT N*
All TTC agreed	20	21
One TTC disagreed	18	11
Two TTCs disagreed	9	8
More than two TTCs disagreed	27	34

*N = number of individual exercises

7.2.4 Quality control exercise on screening

For the quality control exercise on screening TTCs received, at regular intervals, serum samples from the ETRL and were asked to test them in their usual screening procedures. In total, 16 sera were screened by each TTC. The panel size used by the participants ranged between 36 to 150 HLA-typed cells, using serological screening techniques with or without DTT, commercial ELISA-based as well as home-made techniques. The results revealed a high concordance in the case of IgG HLA class I specific antibodies, while HLA antibodies of the IgM type were several times defined as negative (probably due to loss of activity during shipment). All TTCs defined the specificity of the sera.

The results may be summarized as follows:

- High degree of concordance.
- Many laboratories (still) do not report % panel reactive antibodies (PRA).
- Problems with the tail analysis.

7.2.5 Proficiency testing on donor retyping

Following the decision of the Board of Eurotransplant to discontinue the HLA retyping of all organ donors in September 1996, the ETRL has divided this programme into two parts:

Part 1 Retyping of random donors from Austria, Belgium, Luxemburg, and The Netherlands.

Part 2 Retyping of selected donors from Germany, that is homozygous donors or donors with odd or rare typing and combinations were selected.

Peripheral blood from organ donors was sent to the ETRL. After DNA preparation, HLA typing was carried out using molecular methods (mainly the sequence specific oligonucleotide method (SSO)).

As shown in Table 7.5 donor HLA typing in Eurotransplant reached high standards. However, a point of concern was the increasing number of clerical errors, especially in transmitting results to the Eurotransplant desk office.

Table 7.5 Proficiency testing on donor retyping

	N Donor retyping	N Discrepant
Random donors: Austria, Belgium, Luxemburg, The Netherlands	418	14
Selected donors: Germany	130	9

7.2.6 Pilot study on recipient HLA retyping

The pilot study on recipient HLA retyping was initiated by the TTAC.

This study was carried out in close co-operation with the German Society for Immunogenetics (DGI).

From the 28 laboratories in Germany, 22 submitted samples from organ recipients for retyping. In total, 217 samples were analysed. Typing was performed blind using both SSO and sequence specific priming. The material was collected centrally and sent to seven TTCs that acted as control laboratories.

The number of discrepancies between the original typing in a recipient centre and that carried out in a control laboratory and the number of discrepancies between control laboratories were similar and low. Discrepancy rates were 2.2% for HLA-A, 0.6% for HLA-B, and 1.0% for HLA-DR.

For the TTCs of the 20 countries affiliated to Eurotransplant, retyping was carried out by the ETRL. DNA from 10 consecutive recipients was also retyped. The retyping was carried out using SSO, and the results were discussed with the participants prior to the final analysis.

The ETRL observed problems with the amplification of HLA-B*73 as well as some amplification failures for HLA-A and B as compared with HLA-DR, DQ. The observed number and type of discrepancies were very similar to those seen in the DGI study.

In conclusion, both studies confirmed the usefulness of the pilot study. HLA typing using molecular methods seems to be feasible, but the number of clerical errors is too high.

7.3 Programmes for the highly immunized patients in Eurotransplant

Two programmes are currently available for highly immunized patients participating in Eurotransplant: the Acceptable Mismatch Programme (AM) and the Highly Immunized Trial (HIT), originally implemented by Prof. Dr. G. Opelz (Heidelberg). Both programmes are organized and controlled by the ETRL. Both programmes are open for all eligible patients within Eurotransplant. In 1997, a total of 37 highly immunized patients underwent transplantation.

7.4 Eurotransplant serum sets

Serum sets for HLA-A, B, C and HLA-DR, DQ are regularly compiled by the ETRL. This is achieved through the co-operation of a number of HLA laboratories both within and outside Eurotransplant. The aim of the distribution of the serum sets has not changed: to achieve uniform HLA-A, B, C and HLA-DR, DQ typing of organ donors and potential organ recipients and their family members.

In 1995, serum set #19 was prepared for HLA-DR, DQ. The set consists of 44 sera, including a positive and negative control, and allows unambiguous typing for DR1, DR2 (DR15, DR16), DR3, DR4, DR5 (DR11, DR12), DR6 (DR13, DR14), DR7, DR8, DR9, and DR10. Typing for DR8 is difficult but possible. Serum set #20 for HLA-A, B, C typing was introduced in 1996 and consists of 120 sera, including a negative control. All HLA specificities that usually occur in the Caucasian population can be typed using this serum set.

In order to evaluate the performance of the serum sets, as many possible typing results (serum scores and interpretation) should be submitted by the affiliated laboratories to the ETRL. In addition, these data help to minimize clerical errors. Typing laboratories both within and outside Eurotransplant are kindly requested to submit sera to be included in the sets. The ETRL can offer (local) sera in return to help complete local sets.

7.5 Other activities

7.5.1 Tissue typers meeting

The annual tissue typers meeting was held in Leiden on October 9, 1997. More than 100 participants from almost all Eurotransplant TTCs participated. The meeting focused on all aspects of histocompatibility issues related to transplantation and was a useful forum for discussion.

7.5.2 Fourth extramural meeting

More than 40 participants attended the fourth extramural meeting held in Halle, Germany on March 14, 1997, which was dedicated to screening and crossmatching procedures.

7.5.3 FACS study

A study on the usefulness of the FACS study was initiated by Prof. Dr. G. Bein, Gießen, and will be performed in co-operation with the ETRL.

7.5.4 Site visits

Members of the ETRL visited three TTCs affiliated to Eurotransplant with typing or screening problems. These visits helped to resolve the problems and improve the quality of the laboratories and their communication with the ETRL.

7.5.5 Tissue Typing Advisory Committee

A fruitful interaction exists between the ETRL and the TTAC. The TTAC advises the Board on histocompatibility-related problems. All centres can (and should) submit ideas and suggestions to the TTAC via their national representative. All TTCs receive both the agenda and a summary of the minutes of the TTAC.

7.6 Future perspectives

The results of the quality control exercises in screening and crossmatching are still not wholly adequate. Therefore, the ETRL will concentrate on these two aspects of serological testing. Education, wet-bench teaching in the ETRL, teaching course(s), and site visits may help to overcome these problems. In addition, efforts will be made to stabilize and maintain the current high level of HLA typing in the future.

8. Publications

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8.1 Introduction

1997 was characterized by increased co-operation between the Eurotransplant community and staff at the central office in Leiden. This was reflected in the large number (over 300) of requests for epidemiological data and scientific analyses received by central office and the number of publications written in collaboration with Eurotransplant medical staff.

The unique database maintained at the central office is available to everybody working within the Eurotransplant community. It is thanks to the efforts of all the transplant programmes and tissue-typing laboratories that we were able to maintain and update the database. We understand that this is time-consuming work but it is important that it is continued, especially with legislative requirements on the horizon. The overview of the 1997 publications and abstracts may be seen as an acknowledgement and tribute to all the contributors. Thank you all.

Please do not hesitate to approach the medical staff if you need information. Your requests will be most welcome and we will do our best to help.

8.2 Publications

The names of authors who work at Eurotransplant central office are underlined.

Alfani D, Pretagostini R, Rossi M, Poli L, Bruzzone P, Colonnello M, De Simone P, Berloco P, Persijn G, Smits J, Cortesini R. **Living unrelated kidney transplantation: a 12-year single center experience.** *Transplantation Proceedings* 1997; **29**: 191-194.

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Cohen B, Persijn GG. **World trends in organ donation.** 4th International Society for Organ Sharing Congress, Washington, USA, July 8-13, 1997.

Cohen B, Wight C, Miranda B, Beasley C. **An international initiative to improve organ donation.** Bootcongres, Texel, The Netherlands, April 23-25, 1997.

De Meester J, Bok A, Van de Velde O, Persijn GG, van Hooff JS. **What is so peculiar on long waiting renal transplant candidates?** 4th International Society for Organ Sharing Congress, Washington, USA, July 8-13, 1997.

De Meester J, Sindram D, Klapwijk M, Persijn GG, Ringe B. **Is intoxication a contra-indication for organ donation and thus transplantation?** 4th International Society for Organ Sharing Congress, Washington, USA, July 8-13, 1997 and 8th Congress of the European Society for Organ Transplantation, Budapest, Hungary, September 2-6, 1997.

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Addenda

Table 1 Number of patients actively on the waiting list on December 31, 1997, stratified by organ, per country and centre

Country	Centre	Kidney	Kidney/ Pancreas*	Pancreas*	Heart	Heart/ Lung	Lung	Liver
Austria	GA	105	–	–	26	1	–	5
	IB	240	18	4	10	–	2	22
	OE	89	–	–	–	–	–	–
	OL	47	–	–	–	–	–	–
	OW	–	–	–	–	–	–	–
	WD	5	–	–	–	–	–	–
	WG	327	3	–	67	–	19	20
	TOTAL	813	21	4	103	1	21	47
Belgium	AN	34	2	–	5	–	–	–
	AS	–	–	–	5	–	–	–
	BJ	15	–	–	–	–	–	–
	BP	–	–	16	–	–	–	–
	BR	330	4	–	6	16	7	3
	GE	67	5	–	1	–	–	8
	LA	189	1	1	9	–	4	29
	LE	4	–	–	–	–	–	–
	LG	53	2	–	7	1	1	2
	LM	220	6	–	6	1	6	2
TOTAL	912	20	17	39	18	18	44	
Germany	AK	87	–	–	9	–	–	–
	AU	31	–	–	–	–	–	–
	BA	–	–	–	171	6	2	–
	BB	231	23	4	–	1	–	–
	BD	1	–	–	90	17	12	–
	BE	354	–	–	–	–	–	–
	BH	–	–	–	3	–	–	–
	BM	187	–	–	–	–	–	–
	BO	88	–	–	–	–	–	4
	BS	137	–	–	–	–	–	–
	BV	124	3	1	–	–	–	37
	DR	44	–	–	12	–	2	–
	DU	352	–	–	8	–	–	–
	EB	372	–	–	–	–	–	–
	ES	316	1	–	4	1	3	7
	FD	–	–	–	16	–	–	–
	FM	277	–	–	11	–	–	8
	FR	248	3	–	7	–	–	–
	GI	170	5	36	4	–	–	–
	GO	130	–	–	5	–	–	13
	HA	120	–	–	6	–	1	–
	HB	268	–	–	37	–	1	4
	HG	210	–	–	1	–	–	31
	HM	250	–	–	–	–	–	–
	HO	802	–	–	33	11	44	75
	HS	106	–	–	7	–	12	–
	JE	113	–	–	–	–	–	3
	KI	96	–	–	24	–	17	6
	KK	2	–	–	–	–	–	–
	KL	120	–	–	6	1	–	–
	KM	243	–	1	–	–	–	4
	KR	–	–	–	18	–	–	–
	KS	120	–	–	3	–	–	–
LP	47	–	–	9	–	–	4	
LU	275	–	–	–	–	–	–	
MA	118	–	–	–	–	–	–	
MB	–	–	–	–	–	–	5	
MD	–	–	–	22	–	–	–	
MH	186	–	–	–	–	–	9	
ML	546	24	1	43	3	14	17	
MN	237	–	1	18	5	4	3	
MR	120	1	–	–	–	–	–	
MZ	100	–	–	2	–	3	9	
NB	267	1	–	–	–	–	4	
RB	99	2	–	1	–	–	1	
RO	114	11	2	–	–	–	1	
ST	196	–	–	–	–	–	–	
TU	137	4	–	4	–	–	10	
UL	243	4	–	–	–	–	–	
WZ	180	–	–	1	–	–	1	
TOTAL	8464	82	46	575	45	115	256	
Luxemburg	LX	11	0	0	0	0	0	0
Netherlands	AW	151	–	–	–	–	–	–
	GR	219	1	–	–	2	62	17
	LB	127	3	–	–	–	–	4
	MS	90	–	–	–	–	–	–
	NY	121	–	–	–	–	–	–
	RD	175	–	–	11	–	–	6
	RS	9	–	–	–	–	–	–
	UT	98	–	–	16	–	–	–
UW	7	–	–	–	–	–	–	
TOTAL	997	4	0	27	2	62	27	
Eurotransplant	TOTAL	11197	127	67	744	66	216	374

11324

*Note: islet/kidney and/or islet-only transplant candidates are listed in IB, Austria (1 islet/kidney), in BP, Belgium (16 islet-only) and in GI, Germany (5 islet/kidney, 36 islet-only).

Table 2a Cadaveric donor activities in 1997, stratified by type of donation, per country and per centre

Donor country	Donor centre	Total number of donors reported						NO-KIDNEY DONOR
		Total	No transplant	Transplant				
					TOTAL	KIDNEY DONOR		
				KI only	MOD	% MOD		
Austria	GA	17	0	17	1	16	94.1	0
	IB	49	2	47	7	38	84.4	2
	OE	2	0	2	0	2	100.0	0
	OL	10	0	10	0	10	100.0	0
	OW	7	0	7	3	4	57.1	0
	WG/WD	78	5	73	23	50	68.5	0
	TOTAL		163	7	156	34	120	77.9
Belgium	AN	24	1	23	9	12	57.1	2
	AS	9	1	8	0	7	100.0	1
	BJ	14	1	13	4	9	69.2	0
	BR	37	1	36	4	29	87.9	3
	GE	41	4	37	3	32	91.4	2
	LA	30	2	28	6	22	78.6	0
	LG	25	0	25	1	24	96.0	0
	LM/LE	60	5	55	5	47	90.4	3
	TOTAL		240	15	225	32	182	85.0
Germany	AK	10	1	9	4	5	55.6	0
	BB	13	3	10	3	7	70.0	0
	BE	14	0	14	3	10	76.9	1
	BM	12	1	11	2	7	77.8	2
	BO	31	0	31	9	21	70.0	1
	BV	17	3	14	2	12	85.7	0
	DR	25	2	23	9	14	60.9	0
	DU	42	0	42	17	25	59.5	0
	EB/BS	41	0	41	8	33	80.5	0
	ES	31	1	30	5	23	82.1	2
	FD	4	0	4	2	2	50.0	0
	FM	31	2	29	10	18	64.3	1
	FR	33	2	31	10	21	67.7	0
	GI	12	0	12	3	9	75.0	0
	GO	22	0	22	4	18	81.8	0
	HA/MB	26	5	21	1	19	95.0	1
	HB	19	1	18	3	15	83.3	0
	HG	35	1	34	12	21	63.6	1
	HO/HM	109	2	107	40	65	61.9	2
	HS	13	1	12	4	8	66.7	0
	JE	29	2	27	6	20	76.9	1
	KI	22	1	21	6	15	71.4	0
	KL	17	1	16	7	9	56.2	0
	KM	15	2	13	9	4	30.8	0
	KS	21	0	21	7	14	66.7	0
	LP	49	3	46	11	32	74.4	3
	LU	36	1	35	18	17	48.6	0
	MA	12	0	12	7	5	41.7	0
	ML/MH/AU	90	5	85	29	54	65.1	2
	MN	48	3	45	18	26	59.1	1
	MR	16	0	16	4	11	73.3	1
	MZ	16	0	16	5	10	66.7	1
	NB	52	6	46	19	26	57.8	1
RB	14	1	13	2	11	84.6	0	
RO	33	4	29	7	22	75.8	0	
ST	10	0	10	4	5	55.6	1	
TU	40	2	38	19	19	50.0	0	
UL	25	0	25	9	15	62.5	1	
WZ	16	0	16	6	9	60.0	1	
TOTAL		1101	56	1045	344	677	66.3	24
Luxemburg	LX	5	0	5	1	4	80.0	0
Netherlands	AW	29	4	25	4	19	82.6	2
	GR	49	1	48	10	37	78.7	1
	LB	23	1	22	9	13	59.1	0
	MS	34	6	28	15	13	46.4	0
	NY	57	1	56	14	42	75.0	0
	RD/RS	27	2	25	7	18	72.0	0
	UT/UW	12	0	12	1	11	91.7	0
TOTAL		231	15	216	60	153	71.8	3
Eurotransplant, Total		1740	93	1647	471	1136	70.7	40
Croatia		3	0	3	0	0		3
Czech Republic#		45	9	36	0	0		36
Denmark		1	0	1	0	0		1
France		22	19	3	1	0		2
Greece		7	4	3	0	0		3
Hungary#		6	3	3	2	0		1
Israel		2	0	2	1	0		1
Italy		18	11	7	1	0		6
Lithuania#		6	1	5	0	0		5
Norway		8	2	6	0	0		6
Poland#		17	4	13	0	0		13
Portugal		3	2	1	1	0		0
Slovak Republic#		14	2	12	0	0		12
Spain		55	40	15	11	0		4
Sweden		16	7	9	0	0		9
Switzerland		38	28	10	2	0		8
United Kingdom/Ireland		1	1	0	0	0		0
From outside Eurotransplant, Total		262	133	129	19	0		110

: organ-specific cooperation with Eurotransplant transplant programs

Table 2b Cadaveric donor activities in 1997, stratified by organ used in a transplant, per country and per centre

Donor Country	Donor Centre	Kidney		Heart	Lung	Liver	Pancreas (including Islet)
		Donor	Kidneys				
Austria	GA	17	33	14	2	13	3
	IB	45	89	26	8	40	17
	OE	2	3	—	—	2	—
	OL	10	20	10	4	10	4
	OW	7	14	3	—	4	2
	WG/WD	73	144	32	15	40	4
	TOTAL	154	303	85	29	109	30
Belgium	AN	21	42	12	1	10	4
	AS	7	13	5	1	7	—
	BJ	13	22	8	2	9	1
	BR	33	64	19	6	31	1
	GE	35	64	18	3	33	10
	LA	28	52	10	3	20	5
	LG	25	49	17	3	22	2
	LM/LE	52	98	37	11	42	8
		TOTAL	214	404	126	30	174
Germany	AK	9	16	4	—	4	1
	BB	10	20	3	1	6	—
	BE	13	26	8	2	8	3
	BM	9	16	8	1	5	1
	BO	30	57	13	3	20	7
	BV	14	27	10	1	9	5
	DR	23	46	10	3	11	3
	DU	42	81	20	3	17	1
	EB/BS	41	77	25	8	23	8
	ES	28	55	14	1	24	6
	FD	4	8	2	—	1	—
	FM	28	54	16	3	15	3
	FR	31	62	11	1	20	2
	GI	12	23	8	—	6	3
	GO	22	43	14	4	15	5
	HA/MB	20	34	15	3	14	2
	HB	18	34	8	1	14	1
	HG	33	65	14	2	17	1
	HO/HM	105	203	49	15	51	—
	HS	12	22	4	1	8	—
	JE	26	51	15	2	18	7
	KI	21	41	11	1	13	1
	KL/KK	16	31	5	—	9	4
	KM	13	26	3	1	4	1
	KS	21	40	11	2	11	2
	LP	43	84	30	1	20	9
	LU	35	68	11	2	12	4
	MA	12	23	4	—	5	—
	ML/MH/AU	83	159	43	8	37	12
	MN	44	77	22	1	21	—
	MR	15	30	9	1	8	1
	MZ	15	30	8	1	8	—
	NB	45	88	17	2	23	6
RB	13	25	10	—	10	5	
RO	29	55	16	4	18	9	
ST	9	18	4	4	6	4	
TU	38	71	13	1	16	3	
UL	24	46	13	3	12	6	
WZ	15	29	7	3	9	—	
	TOTAL	1021	1961	508	90	548	126
Luxemburg	LX	5	10	3	0	3	0
Netherlands	AW	23	44	10	3	18	1
	GR	47	91	20	2	37	12
	LB	22	43	6	3	12	3
	MS	28	54	6	2	12	2
	NY	56	109	26	6	39	12
	RD/RS	25	49	9	3	16	—
UT/UW	12	24	4	1	11	3	
	TOTAL	213	414	81	20	145	33
Eurotransplant, Total		1607	3092	803	169	979	220
Croatia		—	—	2	1	1	—
Czech Republic#		—	—	2	6	32	—
Denmark		—	—	—	1	—	—
France		1	1	2	—	—	—
Greece		—	—	3	—	—	—
Hungary#		2	2	—	—	1	—
Israel		1	1	—	—	1	—
Italy		1	1	4	2	—	—
Lithuania		—	—	—	—	5	—
Norway		—	—	2	—	5	—
Poland#		—	—	1	—	13	1
Portugal		1	1	—	—	—	—
Slovak Republic#		—	—	5	2	11	—
Spain		11	15	2	1	1	—
Sweden		—	—	—	1	8	—
Switzerland		2	2	6	3	2	—
United Kingdom/Ireland		—	—	—	—	—	—
From outside Eurotransplant, Total		19	23	29	17	80	1

: organ-specific cooperation with Eurotransplant transplant programs

Table 3a Transplant activities [cadaveric donor] in 1997, stratified by organ, per country and per centre

Country	Centre	Kidney	Kidney/ Pancreas*	Pancreas*	Heart	Heart/ Lung	Lung	Liver
Austria	GA	32	–	–	17	–	–	2
	IB	82	18	4	22	2	6	59
	OE	27	–	–	–	–	–	–
	OL	10	–	–	–	–	–	–
	WD	7	–	–	–	–	–	–
	WG	131	3	–	53	1	24	70
	TOTAL	289	21	4	92	3	30	131
Belgium	AN	29	2	–	11	–	1	–
	AS	–	–	–	16	–	–	–
	BJ	12	–	–	–	–	–	–
	BP	–	–	5	–	–	–	–
	BR	79	3	–	15	6	7	14
	GE	38	2	–	10	–	–	41
	LA	77	4	–	12	–	8	41
	LE	5	–	–	–	–	–	–
	LG	31	–	–	16	–	–	19
	LM	119	4	–	26	3	10	24
	TOTAL	390	15	5	106	9	26	139
Germany	AK	13	–	–	12	–	–	–
	AU	10	–	–	–	–	–	–
	BA	–	–	–	82	5	–	–
	BB	32	43	1	3	–	1	2
	BD	–	–	–	64	10	15	–
	BE	50	–	–	–	–	–	–
	BH	–	–	–	4	–	–	–
	BK	–	–	–	2	–	–	–
	BM	25	–	–	–	–	–	–
	BO	12	–	–	–	–	–	35
	BS	44	–	–	3	–	–	–
	BV	21	19	–	–	–	–	121
	DR	26	–	–	19	3	3	–
	DU	84	–	–	7	–	–	2
	EB	61	–	–	–	–	–	–
	ES	65	1	–	6	1	1	48
	FD	–	–	–	10	–	2	–
	FM	50	–	–	11	–	2	18
	FR	73	5	–	12	–	–	20
	GI	16	13	4	11	–	–	–
	GO	23	–	–	10	–	–	24
	HA	48	–	–	23	–	–	–
	HB	58	–	–	20	–	1	36
	HG	41	–	–	13	–	–	78
	HM	88	–	–	–	–	–	–
	HO	168	–	–	26	7	31	93
	HS	15	–	–	4	–	6	–
	JE	55	2	1	–	–	–	22
	KI	21	–	–	27	–	7	16
	KK	1	–	–	–	–	–	–
	KL	21	4	–	6	–	–	4
	KM	45	2	–	–	–	–	6
	KR	–	–	–	1	–	–	–
	KS	39	–	–	7	–	–	–
	LP	40	–	–	20	–	–	32
	LU	64	–	–	–	–	–	–
	MA	20	–	–	–	–	–	–
	MB	–	–	–	–	–	–	13
	MD	–	–	–	13	–	–	–
	MH	27	–	–	–	–	–	16
ML	124	19	4	50	5	12	36	
MN	72	1	–	38	–	–	20	
MR	17	2	–	–	–	–	–	
MZ	10	–	–	6	–	8	6	
NB	62	1	–	–	–	–	26	
RB	15	7	1	13	–	–	10	
RO	42	8	3	–	–	–	12	
ST	43	–	–	–	–	–	–	
TU	28	15	1	3	–	–	36	
UL	28	6	–	–	–	–	–	
WZ	25	–	–	5	–	–	6	
	TOTAL	1822	148	15	531	31	89	738
Luxemburg	LX	6	0	0	0	0	0	0
Netherlands	AW	48	–	–	–	–	–	–
	GR	75	3	–	–	–	10	52
	LB	60	11	–	–	–	–	12
	MS	47	4	–	–	–	–	–
	NY	82	–	–	–	–	–	–
	RD	47	–	–	29	–	–	25
	RS	8	–	–	–	–	–	–
	UT	30	–	–	24	–	–	–
UW	4	–	–	–	–	–	–	
	TOTAL	401	18	0	53	0	10	89
Eurotransplant, Total		2908	202	24	782	43	155	1097

3110

Note: islet/kidney and/or islet transplantations were performed in BP, Belgium (5 Islet-only) and in GI, Germany (13 Islet/Kidney, 4 Islet-only).

Table 3b Transplant activities [living donor] in 1997, stratified by organ, per country and per centre

Country	Centre	Kidney			Liver		
		Living Related	Living Unrelated	Total	Living Related	Domino	Total
Austria	GA	1	0	1	–	–	–
	IB	9	1	10	2	–	2
	OL	1	0	1	–	–	–
	WD	1	0	1	–	–	–
	WG	8	3	11	–	–	–
	TOTAL	20	4	24	2	0	2
Belgium	AN	1	0	1	–	–	–
	BR	1	0	1	–	–	–
	GE	1	0	1	1	–	1
	LA	8	1	9	16	–	16
	LE	1	0	1	–	–	–
	LG	2	0	2	–	–	–
	LM	2	0	2	–	–	–
TOTAL	16	1	17	17	0	17	
Germany	AK	3	2	5	–	–	–
	BB	6	2	8	–	–	–
	BE	7	4	11	–	–	–
	BM	5	0	5	–	–	–
	BS	4	3	7	–	–	–
	BV	6	1	7	–	–	–
	DR	0	1	1	–	–	–
	DU	6	2	8	–	–	–
	EB	1	1	2	–	–	–
	FM	10	0	10	–	–	–
	FR	11	12	23	–	–	–
	GI	14	7	21	–	–	–
	GO	7	4	11	–	–	–
	HA	1	0	1	–	–	–
	HB	8	1	9	–	–	–
	HG	4	4	8	19	–	19
	HM	4	1	5	–	–	–
	HO	18	5	23	1	4	5
	HS	1	0	1	–	–	–
	JE	2	1	3	–	–	–
	KL	2	0	2	–	–	–
	KM	2	2	4	–	–	–
	KS	1	2	3	–	–	–
	LU	6	4	10	–	–	–
	MA	1	2	3	–	–	–
	MH	8	5	13	–	–	–
	ML	26	17	43	–	–	–
	MN	4	4	8	–	–	–
MR	3	0	3	–	–	–	
NB	1	0	1	–	–	–	
RB	3	1	4	–	–	–	
ST	7	3	10	–	–	–	
UL	1	0	1	–	–	–	
WZ	4	1	5	–	–	–	
TOTAL	187	92	279	20	4	24	
Luxemburg	LX	0	0	0	0	0	0
Netherlands	AW	6	0	6	–	–	–
	GR	5	1	6	–	–	–
	LB	2	3	5	–	–	–
	MS	6	4	10	–	–	–
	NY	20	3	23	–	–	–
	RD	24	3	27	–	–	–
	RS	1	0	1	–	–	–
	UT	9	3	12	–	–	–
UW	1	0	1	–	–	–	
TOTAL	74	17	91	0	0	0	
Eurotransplant, Total		297	114	411	39	4	43

Table 4 Organ exchange of the Eurotransplant countries, based upon the transplant activities in 1997

Table 4a Survey of donor kidney exchange in 1997

Transplant country Donor country	Austria	Belgium	Germany	Luxemburg	Netherlands	ET	Others ^a	Total available	Difference
Austria	217	2	67	0	19		0	305	+5
Belgium	13	248	101	5	34		3	404	+1
Germany	64	122	1684	0	91		2	1963	+7
Luxemburg	0	9	0	1	0		0	10	-4
Netherlands	14	21	104	0	272		3	414	+5
Total Eurotransplant	308	402	1956	6	416	3088	8	3096	+14
Others ^b	2	3	14	0	3	22	1	23	-14
Total transplanted	310	405	1970	6	419	3110	9	3119	

a. Transplant country: Others: Switzerland (5), Pakistan (3), Turkey (2).

b. Donor country: Others: Spain (15), Hungary (2), Switzerland (2), France (1), Israel (1), Italy (1), Portugal (1).

Table 4b Survey of donor heart exchange in 1997

Transplant country Donor country	Austria	Belgium	Germany	Netherlands	ET	Others ^a	Total available	Difference
Austria	69	0	11	0		0	80	+12
Belgium	2	92	19	0		2	115	-9
Germany	6	8	466	0		5	485	+46
Luxemburg	0	1	2	0		0	3	-3
Netherlands	6	3	16	53		0	78	-25
Total Eurotransplant	83	104	514	53	754	7	761	+21
Others ^b	9	2	17	0	28	0	28	-21
Total transplanted	92	106	531	53	782	7	789	

a. Transplant country: Others: Finland (2), Sweden (2), Denmark (1), Italy (1), United Kingdom (1).

b. Donor country: Others: Switzerland (6), Italy (4), *Slovak Republic* (4), Greece (3), Croatia (2), Czech Republic (2), France (2), Norway (2), Spain (2), Poland (1).

Table 4c Survey of donor heart/lung exchange in 1997

Transplant country Donor country	Austria	Belgium	Germany	Netherlands	ET	Others ^a	Total available	Difference
Austria	1	0	4	0		0	5	-2
Belgium	0	8	3	0		0	11	-2
Germany	1	1	21	0		0	23	+8
Netherlands	0	0	3	0		0	3	-3
Total Eurotransplant	2	9	31	0	42	0	42	+1
Others ^b	1	0	0	0	1	0	1	-1
Total transplanted	3	9	31	0	43	0	43	

b. Donor country: Others: *Slovak Republic* (1).

Table 4d Survey of donor double lungs exchange in 1997

Transplant country Donor country	Austria	Belgium	Germany	Netherlands	ET	Others ^a	Total available	Difference
Austria	9	1	4	0		1	15	+3
Belgium	2	6	4	1		0	13	-
Germany	3	4	40	3		1	51	+10
Luxemburg	0	2	0	0		0	0	-
Netherlands	0	4	7	4		0	13	-4
Total Eurotransplant	14	13	55	8	90	2	92	+9
Others ^b	4	0	6	1	11	0	11	-9
Total transplanted	18	13	61	9	101	2	103	

a. Transplant country: Others: Sweden (1), United Kingdom (1).

b. Donor country: Others: *Czech Republic* (3), Switzerland (3), Denmark (1), Italy (1), *Slovak Republic* (1), Spain (1), Sweden (1).

Table 4e Survey of donor single lung exchange in 1997

Transplant country Donor country	Austria	Belgium	Germany	Netherlands	ET	Others ^a	Total available	Difference
Austria	6	1	6	1		0	14	-2
Belgium	1	6	0	0		1	8	+5
Germany	0	3	17	0		0	20	+8
Netherlands	1	2	2	0		0	5	-4
Total Eurotransplant	8	12	25	1	46	1	47	+7
Others ^b	4	1	3	0	8	0	8	-7
Total transplanted	12	13	28	1	54	1	55	

a. Transplant country: Others: Sweden (1).

b. Donor country: Others: *Czech Republic* (5), Croatia (2), Italy (1).

Table 4f Survey of donor whole liver exchange in 1997

Transplant country Donor country	Austria	Belgium	Germany	Netherlands	ET	Others ^a	Total available	Difference
Austria	71	5	27	3		0	106	+21
Belgium	9	85	68	9		0	171	-40
Germany	34	31	433	22		1	521	+149
Luxemburg	0	0	3	0		0	3	-3
Netherlands	7	9	75	48		0	139	-51
Total Eurotransplant	121	130	606	82	939	1	940	+76
Others ^b	6	1	64	6	77	0	77	-76
Total transplanted	127	131	670	88	1016	1	1017	

a. Transplant country: Others: United Kingdom/Ireland (1)

b. Donor country: Others: *Czech Republic* (32), Poland (13), *Slovak Republic* (11), Sweden (6), Lithuania (5), Norway (4), Switzerland (2), Croatia (1), Hungary (1), Israel (1), Spain (1).

Table 4g Survey of donor split liver exchange in 1997

Transplant country Donor country	Austria	Belgium	Germany	Netherlands	ET	Others ^a	Total available	Difference
Austria	2	1	3	0		0	6	-2
Belgium	0	1	5	0		0	6	+2
Germany	2	2	50	0		0	54	+14
Netherlands	0	3	8	1		0	12	-11
Total Eurotransplant	4	7	66	1	78	0	78	+3
Others ^b	0	1	2	0	3	3	6	-3
Total transplanted	4	8	68	1	81	3	84	

b. Donor country: Others: Sweden (2), Norway (1).

Table 4h Survey of donor pancreas/kidney and islet/kidney exchange in 1997

Transplant country Donor country	Austria	Belgium	Germany	Netherlands			Total available	Difference
Austria	18	1	6	2			27	-6
Belgium	0	10	16	4			30	-15
Germany	3	0	106	3			112	+36
Netherlands	0	4	20	9			33	-15
Total Eurotransplant	21	15	148	18			202	

Table 5 Organ exchange in cadaveric donor transplantation, in 1997, between the Eurotransplant transplant programs

* How to read the Tables 5a-i

1. Country
 - 2a. Transplant region or centre, at which the organ-specific transplants were performed
 - 2b. Donors centres and/or transplant centres within the transplant region (centre codes, see page ... -)
3. Donors
 - 3a. *Reported*, total number of organ-specific donors reported to Eurotransplant, of whom organs were transplanted in 1997
 - 3b. *Not used*, number of organ-specific donors not used
 - 3c. *Single organ*, number of organ-specific donors of whom only one kidney or one lung was used
 - 3d. *Two single organs*, number of donors from whom the 2 lungs have been used in 2 different recipients
4. Organs used Total, total number of organs which have been used in a transplant which took place in 1997
5. Destination of organs
 - 5a. *Outside country*, number of organs shipped outside the donor country
 - 5b. *Same country*, number of organs shipped to another centre outside the region but in the same country
 - 5c. *Same region*, number of organs shipped to another centre in the region
 - 5d. *Local centre*, number of organs used at the local centre
6. Origin of transplanted organs
 - 6a. *Local centre*, number of organs transplanted at the local centre
 - 6b. *Same region*, number of organs, received from another centre from the same region
 - 6c. *Same country*, number of organs, received from another centre outside the region but from the same country
 - 6d. *Outside country*, number of organs, received from outside the donor country
7. Transplants Total, total number of organ transplants performed during 1997
8. Exchange balance, difference between Organs used Total and Transplants Total, i.e. net import:export balance
 - '+' means, more import than export
 - '-' means, more export than import

The *programs in italic* represent the individual donor and/or transplant centres in a transplant region. Transplant regions reflect the status at December 31, 1997.

Table 5c Survey of donor heart/lung exchange in 1997

1	2a	2b	3a	3b	4	5a	5b	5c	5d/6a	6b	6c	6d	7	8		
Country	Region	Centre code	Donors Report Total	Donors Not Used	Heart/Lung Used Total	Destination / Origin						He/Lu transplants Total	National Exchange Balance			
						Outside country	Same country	Same region	Local centre	Same region	Same country	Outside country				
Austria	Graz	GA	1	0	1	1	0		0		0	0	0			
		Innsbruck	IB	3	1	2	1	0		1		0	1	2		
		Wien	WG	10	8	2	2	0	0	0	0	0	1	1		
			OL	1	0	1	1	0	0	0	0	0	0	0	0	
			OW	1	1	0	0	0	0	0	0	0	0	0	0	
			WG	8	7	1	1	0	0	0	0	0	1	1		
	TOTAL		14	9	5	4	0		1		0	2	3	-2		
Belgium	Bel_1	AN	4	1	3	2	1	0	0	0	0	0	0			
			LG	1	0	1	1	0	0	0	0	0	0	0		
			BR	3	1	2	1	1	0	0	0	0	0	0		
		Bruxelles	BR	5	1	4	0	0	0	4		1	1	6		
		Bel_2	AS	9	5	4	1	1	1	1	1	1	0	3		
			GE	1	0	1	1	0	0	0	0	0	0	0	0	
	Leuven	LM	3	1	2	0	1	1	0	0	0	0	0			
	TOTAL		20	9	11	3	2		6		2	1	9	-2		
Germany	UNI-NRW		5	1	4	1	3	0	0	0	0	1	1			
			<i>Bochum</i>	1	0	1	1	0	0	0	0	0	0	0		
			<i>BO</i>	2	0	2	0	2	0	0	0	0	0	0		
			<i>Düsseldorf</i>	DU	1	0	1	0	1	0	0	0	0	0		
			<i>Essen</i>	ES	1	1	0	0	0	0	0	0	1	1		
			Berlin	BD	9	6	3	0	0	3	0	3	4	3	10	
			<i>Berlin DHZ</i>	BD	0	0	0	0	0	0	0	3	4	3	10	
				BE	1	0	1	0	0	1	0	0	0	0	0	
				BV	1	1	0	0	0	0	0	0	0	0	0	
				EB	7	5	2	0	0	2	0	0	0	0	0	
			UNI-TVDM		2	1	1	0	0	0	0	0	0	0	0	
			<i>Göttingen</i>	GO	2	1	1	0	0	0	0	0	0	0	0	
			UNI-TSA		7	6	1	0	0	0	1	0	2	0	3	
			<i>Dresden</i>	DR	3	2	1	0	0	0	1	0	2	0	3	
			<i>Halle</i>	HA	3	3	0	0	0	0	0	0	0	0	0	
				JE	1	1	0	0	0	0	0	0	0	0	0	
			UNI-SW		9	4	5	0	5	0	0	0	0	0	0	
			<i>Freiburg</i>	FR	1	1	0	0	0	0	0	0	0	0	0	
			<i>Heidelberg</i>	HB	1	0	1	0	1	0	0	0	0	0	0	
			<i>Tübingen</i>	TU	2	1	1	0	1	0	0	0	0	0	0	
				UL	5	2	3	0	3	0	0	0	0	0	0	
			UNI-TVN		4	3	1	0	1	0	0	0	0	0	0	
				LU	1	1	0	0	0	0	0	0	0	0	0	
				RO	3	2	1	0	1	0	0	0	0	0	0	
			Hann/B.Oeyn	HO/BA	9	5	4	0	0	1	3	4	4	4	12	
			<i>B.Oeynhaus</i>	BA	0	0	0	0	0	0	0	1	1	3	5	
		BM	1	0	1	0	0	1	0	0	0	0	0			
	<i>Hannover</i>	HO/HM	8	5	3	0	0	0	3	3	3	1	7			
	München GH	ML	4	2	2	0	0	0	2	0	1	2	5			
		MR	1	0	1	1	0	0	0	0	0	0	0			
	UNI-NBav		2	1	1	0	1	0	0	0	0	0	0			
	<i>Würzburg</i>	WZ	2	1	1	0	1	0	0	0	0	0	0			
	TOTAL		52	29	23	2	11		10		11	10	31	+8		
Netherlands	Groningen	GR	19	16	3	3	0	0	0	0	0	0	0			
			AW	6	5	1	1	0	0	0	0	0	0	0		
			GR	2	2	0	0	0	0	0	0	0	0	0		
			MS	4	3	1	1	0	0	0	0	0	0	0		
			NY	4	3	1	1	0	0	0	0	0	0	0		
			RD	1	1	0	0	0	0	0	0	0	0	0		
		UT	2	2	0	0	0	0	0	0	0	0	0			
	TOTAL		19	16	3	3	0		0		0	0	0	-3		
Eurotransplant, Total			105	63	42	12	13		17		13	13	43	+1		
From/ To outside ET	Twinning		1	0	1	0	0	1	0	0	0	0	0			
	No twinning		13	13	0	0	0	0	0	0	0	0	0			
	TOTAL		14	13	1	0	0	1	0	0	0	0	0	-1		
Total			119	76	43	12	13	1	17		13	13	43	0		

Table 5e Survey of donor single lung exchange in 1997

1	2a	2b	3a	3c	3d	4	5a	5b	5c	5d/6a	6b	6c	6d	7	8		
Country	Region	Centre code	Donors	1 Single Lung	2 Single Lung	Lungs Used	Destination / Origin							Lung trans-	National		
			Total	Donor	Donor	Total	Outside country	Same country	Same region	Local centre	Same region	Same country	Outside country	plants Total	Exchange Balance		
Austria	Innsbruck Wien	IB	1	1	0	1	1	0		0		0	1	1			
		WG	8	3	5	13	7	0	0	6	0	0	5	11			
		<i>OL</i>	1	1	0	1	1	0	0	–	–	–	–	–			
		<i>WG</i>	7	2	5	12	6	0	–	6	–	0	5	11			
	TOTAL		9	4	5	14	8	0		6		0	6	12	-2		
Belgium	Bel_1 <i>Antwerpen</i> – Bruxelles Bruxelles Leuven	<i>AN</i>	1	0	1	2	0	1	1	0	1	0	0	1			
		<i>BJ</i>	0	0	0	0	0	0	0	–	1	0	0	1			
		<i>BR</i>	1	0	1	2	0	1	1	–	–	–	–	–			
		BR	0	0	0	0	0	0	0	0	0	1	1	2			
		LA	1	1	0	1	0	0	–	1	–	0	3	4			
	LM	4	3	1	5	2	1	–	2	–	1	3	6				
Belgium	TOTAL		6	4	2	8	2	2		4		2	7	13	+5		
Germany	UNI-NRW <i>Bochum</i> – <i>Essen</i> – UNI-TVDM <i>Frankfurt</i> – UNI-TSA <i>Dresden</i> UNI-SW <i>Heidelberg</i> – UNI-TVN <i>Kiel</i> – Hannover UNI-RLF <i>Homburg/Saar</i> <i>Mainz</i> München UNI-NBav –		3	3	0	3	0	2	1	0	1	0	0	1			
		<i>BO</i>	0	0	0	0	0	0	0	–	1	0	0	1			
		<i>ES</i>	1	1	0	1	0	1	0	0	1	0	0	0	0		
		<i>KM</i>	1	1	0	1	0	1	0	1	0	–	–	–	–		
		<i>FM</i>	1	0	1	2	1	1	0	0	0	0	0	2	2		
		<i>GO</i>	0	0	1	2	1	1	0	–	–	–	–	–	–		
		<i>DR</i>	1	1	0	1	0	0	0	1	0	0	0	2	3		
		<i>HB</i>	2	1	1	3	0	3	0	0	0	0	0	0	0		
		<i>ST</i>	0	0	0	0	0	0	0	0	0	0	0	0	0		
		<i>KI</i>	2	1	1	3	0	3	0	–	–	–	–	–	–		
		<i>LU</i>	2	0	2	4	2	1	1	0	1	0	1	2	2		
		<i>RO</i>	0	0	0	0	0	0	–	0	1	0	1	2	–		
		<i>HO</i>	1	0	1	2	2	0	0	0	–	–	–	–	–		
		<i>HS</i>	0	0	0	0	0	0	0	0	6	0	2	0	8		
		<i>MZ</i>	0	0	0	0	0	0	0	0	0	0	4	2	6		
		<i>ML</i>	0	0	0	0	0	0	0	0	0	0	4	0	4		
		<i>WZ</i>	1	1	0	1	0	1	0	–	–	–	–	–	–		
			TOTAL		16	12	4	20	3	8		9		8	11	28	+8
		Netherlands	Groningen	<i>GR</i>	4	3	1	5	5	0	0	0	0	0	1	1	
				<i>MS</i>	0	0	0	0	0	0	–	0	0	0	1	1	
<i>NY</i>	1			1	0	1	1	0	0	–	–	–	–	–			
<i>RD</i>	2			2	0	2	2	0	0	–	–	–	–	–			
<i>RD</i>	1			0	1	2	2	0	0	–	–	–	–	–			
	TOTAL		4	3	1	5	5	0		0		0	1	1	-4		
Eurotransplant, Total			35	23	12	47	18	10		19		10	25	54	+7		
From/ To outside ET	Twining		3	1	2	5	2	0	3	0	0	0	0	0			
	No twining		2	1	1	3	3	0	0	0	0	0	1	1			
	TOTAL		5	2	3	8	5	0	3	0	0	0	1	1	-7		
Total			40	25	15	55	23	10	3	19		10	26	55	0		

Table 5f Survey of donor whole liver exchange in 1997

1	2a	2b	3a	3b	4	5a	5b	5c	5d/6a	6b	6c	6d	7	8	
Country	Region	Centre code	Donors Report Total	Donors Not Used	Livers Used Total	Destination / Origin							Liver transplants Total	National Exchange Balance	
						Outside country	Same country	Same region	Local centre	Same region	Same country	Outside country			
Austria	Graz	GA	17	4	13	9	2	-	2	-	0	0	2		
		IB	43	6	37	8	0	-	29	5	1	20	55		
	Innsbruck	OE/OL/OW	16	0	16	7	0	9	-	-	-	-	-	-	
		WG	64	24	40	11	0	-	29	4	1	36	70		
	TOTAL		140	34	106	35	2	-	69	-	2	56	127	+21	
Belgium Luxembourg	Liège	LG	51	7	44	28	3	2	11	2	1	5	19		
		AN	15	5	10	7	1	2	-	-	-	-	-		
		BJ	11	2	9	8	1	0	-	-	-	-	-		
		LG	22	0	22	10	1	-	11	2	1	5	19		
	Bruxelles	LX	3	0	3	3	0	0	-	-	-	-	-		
		BR	36	5	31	20	1	-	10	-	0	4	14		
		GE	36	5	31	7	1	-	23	-	3	14	40		
	Gent	LA	29	9	20	5	0	-	15	-	3	16	34		
		LM	63	15	48	29	4	4	11	4	2	15	24		
	Leuven	AS	8	1	7	3	0	4	-	-	-	-	-		
		LM	55	14	41	26	4	-	11	4	2	15	24		
TOTAL		212	41	171	86	9	-	76	-	9	46	131	-40		
TOTAL		3	0	3	3	0	-	0	-	0	0	0	-3		
Germany	Aachen	AK	5	1	4	2	2	-	0	-	1	1	2		
		BO	21	3	30	6	10	4	10	4	5	16	35		
	Bonn	BO	21	2	19	2	7	-	10	4	5	16	35		
		KS	15	4	11	4	3	4	-	-	-	-	-		
		BV	52	13	39	6	10	17	6	17	27	63	113		
	Berlin	BE	12	4	8	2	1	5	-	-	-	-	-		
		BV	17	8	9	0	3	-	6	17	27	63	113		
	Düsseldorf	EB	33	11	22	4	6	12	-	-	-	-	-		
		DU	29	12	17	4	11	-	2	-	0	0	2		
		ES	28	4	24	3	6	3	12	3	15	10	40		
	Essen	BB	8	2	6	0	2	3	-	0	1	0	2		
		ES	20	2	18	3	4	-	11	3	14	10	38		
	Frankfurt	FM	18	3	16	2	8	0	6	0	5	7	18		
		FD	2	1	1	0	1	0	-	-	-	-	-		
	Freiburg	FM	22	7	15	2	7	-	6	0	5	7	18		
		FR	22	2	20	5	10	-	5	-	6	9	20		
	Göttingen	GI	9	3	6	2	4	-	-	-	-	-	-		
		GO	21	6	15	2	8	-	6	-	8	10	24		
	Heidelberg	HB	42	10	18	3	5	2	8	2	14	12	36		
		HB	15	2	13	1	4	-	8	2	14	12	36		
	Hamburg	MA	6	1	5	2	1	2	-	-	-	-	-		
		HG	28	17	23	4	8	4	7	4	20	25	56		
	Hannover	HG	28	15	13	2	4	-	7	4	20	25	56		
		LU	16	6	10	2	4	4	-	-	-	-	-		
		HO	76	27	51	6	13	3	29	3	24	14	70		
	Jena	BM	9	4	5	0	2	3	-	-	-	-	-		
		HO/HM	72	26	46	6	11	-	29	3	24	14	70		
	Kiel	JE	25	7	18	2	8	8	-	9	5	22			
	Köln L	KI	19	6	13	0	4	9	-	3	4	16			
	Köln M	KL	10	2	8	3	5	0	-	4	0	4			
	Leipzig	KM	5	1	4	2	0	2	-	2	2	6			
	Magdeburg	LP	56	26	30	3	17	1	9	1	12	10	32		
		DR	39	20	19	2	8	-	9	1	12	10	32		
	München	MH/HA	22	8	14	4	3	-	7	-	4	2	13		
	München	MH	0	0	0	0	0	-	0	8	3	5	16		
	Münster	ML	58	22	36	3	12	8	13	-	15	5	33		
	Münster	MN	31	10	21	7	9	9	5	-	8	7	20		
	Mainz	MR	10	3	7	0	7	-	-	-	-	-	-		
		MZ	18	2	16	3	12	1	0	1	2	3	6		
	Nürnberg	HS	8	0	8	0	7	1	-	-	-	-	-		
		MZ	10	2	8	3	5	-	0	1	2	3	6		
	Regensburg	NB	29	6	23	4	12	-	7	-	12	7	26		
	Rostock	RB	11	3	8	1	4	3	-	4	2	9			
	Tübingen	RO	22	5	17	4	9	4	-	2	6	12			
	Tübingen	TU	34	12	22	4	3	4	11	4	10	10	35		
		ST	6	0	6	2	0	4	-	-	-	-	-		
	Würzburg	TU	28	12	16	2	3	-	11	4	10	10	35		
		UL	17	5	12	1	11	-	-	-	-	-	-		
	TOTAL		758	237	521	88	216	-	217	-	216	237	670	+149	
	Netherlands	Groningen	GR	113	19	94	63	3	16	12	16	3	20	51	
			GR	40	6	34	21	1	-	12	16	3	20	51	
			MS	18	7	11	8	0	3	-	-	-	-	-	
			NY	45	6	39	30	1	8	-	-	-	-	-	
		Leiden	UT	10	0	10	4	1	5	-	-	-	-	-	
LB			14	2	12	8	0	1	3	1	1	7	12		
Rotterdam		AW	26	9	17	13	1	3	-	-	-	-	-		
	RD	20	4	16	7	2	-	7	3	2	13	25			
TOTAL		163	34	139	91	6	-	42	-	6	40	88	-51		
Eurotransplant, Total			1321	291	940	303	233	38	404	233	379	1016	+76		
From/ To outside ET	Twinning		66	11	55	17	0	38	0	0	0	0	0		
	No twinning		59	37	22	22	0	0	0	0	0	1	1		
TOTAL			125	48	77	39	0	38	0	0	0	1	1	-76	
Total			1446	339	1017	342	233	38	404	233	380	1017	0		

Table 5g Survey of donor split liver exchange in 1997

1	2a	2b	3a	4	5a	5b	5c	5d/6a	6b	6c	6d	7	8
Country	Region	Centre code	Donors	Livers	Destination / Origin						Liver	National	Exchange
			Report	Used	Outside	Same	Same	Local	Same	Same	Outside	trans-	
			Total	Total	country	country	region	centre	region	country	country	Total	plants
													Balance
Austria	Innsbruck	IB	3	6	4	0		2		0	2	4	
	TOTAL		3	6	4	0		2		0	2	4	-2
Belgium	Gent	GE	2	4	3	0		1		0	0	1	
	Bruxelles	LA	0	0	0	0		0		0	7	7	
	Leuven	LM	1	2	2	0		0		0	0	0	
	TOTAL		3	6	5	0		1		0	7	8	+2
Germany	Bonn	BO	1	2	0	2		0		0	0	0	
	Berlin	BV	1	2	0	0	2	0	2	3	3	8	
		BV	0	0	0	0	-	0	2	3	3	8	
		EB	1	2	0	0	2	-	-	-	-	-	
	Essen	ES	6	12	0	5	-	7	-	0	3	10	
	Heidelberg	HB	1	2	2	0		0		0	0	0	
	Hamburg	HG	6	12	1	1	4	6	4	9	3	22	
		HG	4	8	1	1	-	6	4	9	3	22	
		LU	2	4	0	0	4	-	-	-	-	-	
	Hannover	HO	5	10	0	0	-	10	0	4	9	23	
	Köln L	KL	1	2	0	2		0		0	0	0	
	Leipzig	LP	1	2	0	2		0		0	0	0	
	München	ML	2	4	0	4		0		3	0	3	
	Regensburg	RB	2	4	1	2		1		0	0	1	
	Rostock	RO	1	2	0	2		0		0	0	0	
	Tübingen	TU	0	0	0	0		0		1	0	1	
	TOTAL		27	54	4	20		30		20	18	68	+14
Netherlands	Groningen	GR	5	10	6	0	0	1	0	0	0	1	
		GR	3	6	5	0	0	1	0	0	0	0	
		MS	1	2	2	0	0	-	-	-	-	-	
		UT	1	2	2	0	0	-	-	-	-	-	
		AW	1	2	2	0	0	-	-	-	-	-	
	TOTAL		6	12	11	0		1		0	0	1	-11
Eurotransplant, Total			39	78	24	20		34		20	27	81	+3
From/	Twinning		0	0	0	0	0	0	0	0	0	0	
To outside ET	No twinning		3	6	3	0	0	3	0	0	0	3	
	TOTAL		3	6	3	0	0	3	0	0	0	3	-3
Total			42	84	27	20	0	37		20	27	84	0

Table 5h Survey of donor pancreas exchange for pancreas & islet transplantation in 1997

1	2b	3a	3b	4								7					
Country	Centre code	Donor Report Total	Donor Not Used	Pancreas disposition to								Pancreas transplants					
				Research				Pancreas Transplantation				PA	PA/KI	IS/KI	IS-only		
				BP	GI	FR	RO	LB	Others	PA	PA/KI	IS/KI	IS-only	PA	PA/KI	IS/KI	IS-only
Austria	GA	9	4	2	-	-	-	-	-	-	3	-	-	-	-	-	-
	IB	33	16	-	-	-	-	-	-	3	14	-	-	4	18	0	0
	OE	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	OL	10	5	1	-	-	-	-	-	-	4	-	-	-	-	-	-
	OW	4	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-
	WG	8	4	-	-	-	-	-	-	-	4	-	-	0	3	-	-
	TOTAL	65	31	4	0	0	0	0	0	0	3	27	0	0	4	21	0
Belgium	AN	18	2	12	-	-	-	-	-	-	4	-	-	0	2	0	0
	AS	8	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	BJ	12	2	9	-	-	-	-	-	-	1	-	-	-	-	-	-
	BP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	5
	BR	16	12	3	-	-	-	-	-	-	1	-	-	0	3	-	-
	GE	32	5	17	-	-	-	-	-	-	9	1	-	0	2	-	-
	LA	21	2	14	-	-	-	-	-	-	5	-	-	0	4	-	-
	LG	13	7	4	-	-	-	-	-	-	2	-	-	-	-	-	-
	LM	42	10	23	-	-	-	-	-	1	1	7	-	0	4	-	-
	TOTAL	162	44	86	0	0	0	0	1	1	29	1	0	0	15	0	5
Germany	AK	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
	BB	3	3	-	-	-	-	-	-	-	-	-	-	1	43	-	-
	BE	5	2	-	-	-	-	-	-	-	3	-	-	-	-	-	-
	BM	4	1	1	-	-	1	-	-	-	-	-	1	-	-	-	-
	BO	16	5	2	2	-	-	-	-	-	7	-	-	-	-	-	-
	BV	6	1	-	-	-	-	-	-	-	5	-	-	0	19	-	-
	DR	9	3	2	-	-	1	-	-	-	3	-	-	-	-	-	-
	DU	12	8	3	-	-	-	-	-	-	1	-	-	-	-	-	-
	EB	25	15	1	-	-	1	-	-	-	8	-	-	-	-	-	-
	ES	14	4	2	-	1	1	-	-	-	6	-	-	0	1	-	-
	FD	1	0	-	-	1	-	-	-	-	-	-	-	-	-	-	-
	FM	10	6	1	-	-	-	-	-	1	1	1	-	-	-	-	-
	FR	17	3	2	-	10	-	-	-	-	2	-	-	0	5	-	-
	GI	6	3	-	-	-	-	-	-	-	1	2	-	-	-	13	4
	GO	14	8	-	-	-	-	1	-	-	3	2	-	-	-	-	-
	HA	14	9	2	1	-	-	-	-	-	2	-	-	-	-	-	-
	HB	7	4	1	1	-	-	-	-	-	-	1	-	-	-	-	-
	HG	15	9	1	1	-	2	-	-	-	1	-	1	-	-	-	-
	HO/HM	7	4	1	2	-	-	-	-	-	-	-	-	-	-	-	-
	HS	4	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-
	JE	11	3	1	-	-	-	-	-	-	1	6	-	1	2	-	-
	KI	8	3	3	-	-	1	-	-	-	1	-	-	-	-	-	-
	KL	7	3	-	-	-	-	-	-	-	4	-	-	0	4	-	-
	KM	4	3	-	-	-	-	-	-	-	1	-	-	0	2	-	-
	KS	11	6	3	-	-	-	-	-	-	2	-	-	-	-	-	-
	LP	29	16	2	1	-	-	1	-	-	9	-	-	-	-	-	-
	LU	13	5	3	-	-	1	-	-	-	4	-	-	-	-	-	-
	MA	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	ML	28	13	3	-	-	-	-	-	4	8	-	-	4	19	-	-
	MM	17	15	1	1	-	-	-	-	-	-	-	-	0	1	-	-
	MR	7	5	1	-	-	-	-	-	-	1	-	-	0	2	-	-
	MZ	6	3	2	-	1	-	-	-	-	-	-	-	-	-	-	-
NB	13	4	2	1	-	-	-	-	-	5	1	-	0	1	-	-	
RB	8	1	2	-	-	-	-	-	-	3	2	-	1	7	-	-	
RO	17	4	1	-	-	4	-	-	2	5	-	-	3	8	-	-	
ST	5	-	-	-	1	-	-	-	-	3	-	1	-	-	-	-	
TU	19	7	8	-	-	-	1	1	1	1	1	-	1	15	-	-	
UL	12	5	1	-	-	-	-	-	-	5	-	1	0	6	-	-	
WZ	9	-	5	1	2	1	-	-	-	-	-	-	-	-	-	-	
TOTAL	419	190	60	11	16	13	3	0	10	102	10	4	11	135	13	4	
Luxemburg	TOTAL	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	AW	21	12	5	-	-	-	3	-	-	1	-	-	-	-	-	-
	GR	35	8	10	-	-	-	5	-	-	10	2	-	0	3	-	-
	LB	10	4	-	-	-	-	3	-	-	3	-	-	0	11	-	-
	MS	15	4	9	-	-	-	-	-	-	2	-	-	0	4	-	-
	NY	41	3	23	-	-	-	3	-	-	12	-	-	-	-	-	-
	RD	14	6	6	-	-	-	2	-	-	-	-	-	-	-	-	-
	UT	9	3	3	-	-	-	-	-	-	3	-	-	-	-	-	-
TOTAL	145	40	56	0	0	0	16	0	-	31	2	-	0	18	0	0	
Eurotransplant, Total		674	258	208	11	16	13	19	1	14	189	13	4	15	189	13	9
From/ To outside ET	Twinning	1	0	0	0	0	0	0	0	1	0	0	0	-	-	-	-
	No twinning	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-
TOTAL		1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Total		675	258	208	11	16	13	18	1	15	189	13	4	15	189	13	9

Table 5i Survey of donor kidney exchange for pancreas/kidney & islet/kidney transplantation in 1997

1	2a	2b	4	5a	5b	5c	5d/6a	6b	6c	6d	7	8
Country	Region	Centre code	Pancreas Kidneys Used Total	Outside country	Same country	Destination/Origin Same region	Local centre	Same region	Same country	Outside country Total	Pancreas Kidney transplants	National Exchange Balance
Austria	Graz	GA	3	2	1		0		0	0	0	-3
		IB	14	3	0		11		4	3	18	+4
	Upper Austria	OL	6	4	2	0	0	0	0	0	0	-6
		OW	4	3	1	0	-	-	-	-	-	-
	Vienna	WG	2	1	1	0	-	-	-	-	-	-
	Vienna	WG	4	0	1		3		0	0	3	-1
	TOTAL		27	9	4		14		4	3	21	-6
Belgium Luxemburg	Bel_1	AN	7	5	1	0	1	0	0	1	2	-5
		BJ	4	2	1	0	1	0	0	1	2	
		LG	1	1	0	0	0	0	0	0	0	
	Bruxelles	BR	2	2	0	0	0	0	0	0	0	
		LA	1	1	0		0	2		1	1	3
	Bel_2	LA	5	3	0		2		1	1	4	-1
		GE	17	11	3	0	3	0	1	2	6	-11
	LM	10	7	1	0	2	0	0	0	2		
	LM	7	4	2	0	1	0	1	2	4		
	TOTAL		30	20	4		6		4	5	15	-15
Germany	Aachen	AK	1	0	1		0		0	0	0	-1
		BB	0	0	0		0		27	16	43	+43
	Bochum		16	0	8	6	2	6	7	4	19	+3
			3	0	1	2	-	-	-	-	-	-
			5	0	3	-	2	6	7	4	19	
	Berlin	BE	3	0	1	2	-	-	-	-	-	-
		BV	5	0	3	-	2	6	7	4	19	
		EB	8	0	4	4	-	-	-	-	-	-
	Düsseldorf	DU	1	0	1		0		0	0	0	-1
		UNI-TVN	6	0	6	0	0	0	1	0	0	-6
			1	0	1	0	-	-	-	-	-	-
	UNI-RP	HG	1	0	1	0	-	-	-	-	-	-
		KI	1	0	1	0	-	-	-	-	-	-
		LU	4	0	4	0	-	-	-	-	-	-
	Essen	UNI-RP	9	1	8	0	0	0	0	0	0	-9
			7	0	7	0	-	-	-	-	-	-
			2	1	1	0	-	-	-	-	-	-
	Frankfurt/Gießen	ES	6	1	4		1		0	0	1	-5
			5	1	1	1	2	1	7	3	13	+8
			2	0	1	1	0	0	0	0	0	
	Freiburg	FM	3	1	0	0	2	1	7	3	13	
		GI	3	1	0	0	2	1	7	3	13	
		FR	2	0	0		2		2	1	5	+3
	Göttingen	GO	5	0	5		0		0	0	0	-5
		UNI-TSA	25	2	20	0	3	0	5	2	10	-15
			3	0	3	0	-	-	-	-	-	-
	Heidelberg	DR	3	0	3	0	-	-	-	-	-	-
		HA	2	0	2	0	-	-	-	-	-	-
		JE	6	0	4	0	2	0	0	0	2	
	Köln	LP	9	2	7	0	-	-	-	-	-	-
		RO	5	0	4	0	1	0	5	2	8	
		HB	1	0	1		0		0	0	0	-1
	UNI-NBav	Köln	5	1	3	0	1	0	4	1	6	+1
		4	1	2	0	1	0	2	1	4		
		1	0	1	0	0	0	2	0	2		
UNI-SBav	UNI-NBav	11	0	9	0	2	0	5	1	8	-3	
		6	0	6	0	0	0	1	0	1		
		5	0	3	0	2	0	4	1	7		
Münster	UNI-SBav	8	0	1		7		4	8	19	+11	
		0	0	0		0		0	1	1	+1	
		1	0	1		0		2	0	2	+1	
Stuttgart/Tübingen	Marburg	1	0	1		0		2	0	2	+1	
		5	0	2	2	1	2	9	3	15	+10	
		3	0	1	2	-	-	-	-	-	-	
Ulm	TU	2	0	1	0	1	2	9	3	15		
		5	0	4		1		3	2	6	+1	
	UL	5	0	4		1		3	2	6	+1	
	TOTAL		112	6	75		31		75	42	148	+36
Netherlands	Amsterdam	AW	1	0	1		0		0	0	0	-1
		GR	12	9	3		0		2	1	3	-9
	Leiden	LB	3	3	0		0		4	7	11	+8
	Maastricht	MS	2	1	0		1		2	1	4	+2
	Nijmegen	NY	12	8	4		0		0	0	0	-12
Utrecht	UT	3	3	0		0		0	0	0	-3	
	TOTAL		33	24	8		1		8	9	18	-15
Eurotransplant, Total			202	59	91		52		91	59	202	0

*The regional cooperations, existing with regard to kidney transplantation, have been used.

Table 6 Active Waiting List and Transplants [cadaveric donor], by organ, per country**Table 6a Kidney: Active waiting list and Transplants [cadaveric donor]**

	Austria		Belgium		Germany		Luxemburg		Netherlands		Eurotransplant	
	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants
1981	237	114	260	154	1342	677	0	2	296	316	2135	1263
1982	272	141	300	139	1554	812	10	2	193	383	2519	1407
1983	337	108	354	194	1844	996	8	5	385	342	2928	1645
1984	486	224	446	206	2475	1232	18	3	459	370	3879	2042
1985	701	229	527	220	3261	1220	19	7	642	289	5150	1965
1986	779	263	616	241	3720	1584	13	2	723	378	5851	2468
1987	862	316	595	344	4488	1585	16	3	779	417	6740	2738
1988	1010	272	663	342	4826	1736	17	5	917	371	7433	2736
1989	992	384	703	380	5100	1917	21	1	949	366	7765	3048
1990	985	409	710	372	5091	1979	16	10	879	401	7681	3171
1991	927	389	714	378	5836	2195	17	7	882	426	8376	3395
1992	868	306	814	330	6437	2034	21	3	883	428	9023	3101
1993	817	380	923	362	6735	2107	13	8	931	436	9419	3294
1994	794	338	952	374	7446	1894	17	4	948	387	10157	2997
1995	819	293	1008	322	7673	2045	17	9	993	395	10510	3064
1996	839	347	1016	410	8112	1887	16	14	1005	425	10988	3083
1997	834	310	932	405	8546	1970	11	6	1001	419	11324	3110

Table 6b Heart: Active waiting list and Transplants

	Austria		Belgium		Germany		Netherlands		Eurotransplant	
	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants
1991	70	64	44	154	367	545	18	43	499	806
1992	79	84	66	124	383	501	24	44	552	753
1993	129	105	57	130	456	493	29	45	672	773
1994	111	91	61	115	520	443	31	47	723	696
1995	121	108	50	101	501	475	37	48	709	732
1996	145	104	37	107	536	488	26	60	744	759
1997	103	92	39	106	575	531	27	53	744	782

Table 6c Heart/lung: Active waiting list and Transplants

	Austria		Belgium		Germany		Netherlands		Eurotransplant	
	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants
1991	5	4	13	10	30	10	0	0	48	24
1992	5	6	8	9	35	17	0	0	48	32
1993	7	5	8	10	34	13	0	0	49	28
1994	5	4	2	7	44	32	0	0	71	43
1995	3	0	20	19	55	23	1	0	79	42
1996	1	2	10	11	22	57	1	1	71	34
1997	1	3	18	9	45	31	2	0	66	43

Table 6d Lung: Active waiting list and Transplants

	Austria		Belgium		Germany		Netherlands		Eurotransplant	
	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants	Waiting List	Trans-plants
1991	7	18	5	9	61	35	17	9	90	71
1992	8	26	8	20	106	45	19	18	141	109
1993	24	33	14	14	135	58	30	14	203	119
1994	18	33	17	19	152	66	40	20	227	138
1995	17	29	12	16	148	60	47	20	224	125
1996	15	29	21	19	119	86	49	20	204	154
1997	21	30	18	26	115	89	62	10	216	155

Table 6e Liver: Active waiting list and Transplants [cadaveric donor]

	Austria		Belgium		Germany		Netherlands		Eurotransplant	
	Waiting List	Transplants	Waiting List	Transplants	Waiting List	Transplants	Waiting List	Transplants	Waiting List	Transplants
1991	28	59	39	164	141	411	21	42	229	710
1992	35	66	39	144	161	490	18	65	253	765
1993	26	91	48	143	113	578	16	66	203	878
1994	29	96	46	146	121	575	16	75	212	892
1995	30	110	35	142	175	594	23	98	263	944
1996	33	132	55	135	209	689	30	76	327	1032
1997	47	131	44	139	256	738	27	89	374	1097

Table 6f Pancreas/Kidney and Islet/Kidney: Active waiting list and Transplants

	Austria		Belgium		Germany		Netherlands		Eurotransplant	
	Waiting List	Transplants	Waiting List	Transplants	Waiting List	Transplants	Waiting List	Transplants	Waiting List	Transplants
1991	12	8	9	8	94	43	5	11	120	70
1992	12	13	20	8	100	30	9	11	141	62
1993	10	14	19	15	77	44	6	19	112	92
1994	5	12	21	12	66	47	6	17	98	88
1995	5	6	12	19	62	67	6	11	85	103
1996	17	7	20	13	61	103	12	17	110	140
1997	21	21	20	15	82	148	4	18	127	202

Table 7 Registrations on the waiting list, by organ, per country**Table 7a Kidney: registrations on the waiting list**

	Austria	Belgium	Germany	Luxemburg	Netherlands	Eurotransplant
1993	509	630	3303	7	715	5164
1994	405	506	3392	7	749	5059
1995	422	543	3210	15	696	4886
1996	458	486	3170	12	700	4826
1997	427	440	3385	1	792	5045

Table 7b Heart: registrations on the waiting list

	Austria	Belgium	Germany	Netherlands	Eurotransplant
1993	181	157	966	64	1368
1994	154	156	843	65	1218
1995	181	137	823	67	1208
1996	178	130	941	70	1319
1997	154	132	950	74	1310

Table 7c Heart/lung: registrations on the waiting list

	Austria	Belgium	Germany	Netherlands	Eurotransplant
1993	8	14	56	0	78
1994	6	27	60	0	93
1995	1	22	57	1	81
1996	1	12	57	1	71
1997	3	21	51	1	76

Table 7d Lung: registrations on the waiting list

	Austria	Belgium	Germany	Netherlands	Eurotransplant
1993	43	23	128	29	223
1994	27	24	139	33	223
1995	38	17	127	44	226
1996	27	36	118	38	219
1997	51	27	175	39	292

Table 7e Liver: registrations on the waiting list

	Austria	Belgium	Germany	Netherlands	Eurotransplant
1993	107	200	688	72	1067
1994	122	202	706	84	1114
1995	157	175	797	111	1240
1996	174	193	921	105	1393
1997	186	167	1011	104	1468

Balance sheet and exploitation result of Stichting Eurotransplant International Foundation

Balance sheet	31.12.1997	31.12.1996
Assets	x Dfl. 1000	x Dfl. 1000
Short term receivables	5532	4461
Liquid assets	5561	5248
	<u>11093</u>	<u>9709</u>
Liabilities		
Equity	519	519
Reserve funds	3722	3920
Short term liabilities	6852	5270
	<u>11093</u>	<u>9709</u>
Statement of income and charges		
Income		
Registration fees	6441	5700
Miscellaneous	199	197
	<u>6640</u>	<u>5897</u>
Charges		
Salaries	3647	2894
General expenses	1432	1306
Medical expenses	434	459
Transport	139	320
Housing	292	287
Depreciation	452	441
Miscellaneous	165	128
	<u>6561</u>	<u>5835</u>
Exploitation balance	79	62
	<u>6640</u>	<u>5897</u>

Accounting policies

Current assets and liabilities

These are stated at nominal value. For doubtful accounts a provision has been made.

Exploitation balance

The exploitation balance is defined as the difference between income and charges based on the above mentioned policies.

Report of the auditor

We have audited the financial statements of Stichting Eurotransplant International Foundation for the year ended on December 31, 1997 from which the summarized financial statements were derived, in accordance with relevant auditing standards. In our report dated April 1, 1998 we expressed an unqualified opinion on the financial statements from which the summarized financial statements were derived. These financial statements are the responsibility of the Foundation's management.

In our opinion, the accompanying summarized financial statements are consistent, in all material respects, with the financial statements from which they were derived.

For a better understanding of the Foundation's financial position and the results of its operations for the period and the scope of our audit, the summarized financial statements should be read in conjunction with the financial statements from which the summarized financial statements were derived and our audit report thereon.

Leiden, April 1, 1998

Deloitte & Touche