Sunday, 30 September 2007

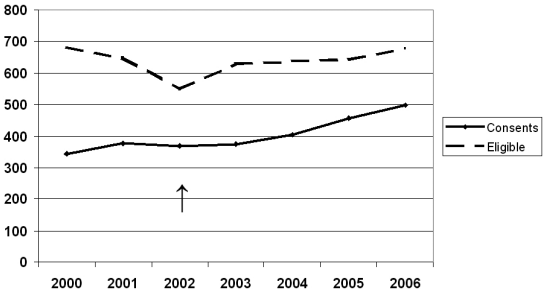
Oral Presentations

Donor relatives

EO21 **COMPANIONING THE BEREAVED: UTILIZATION OF WOLFELT'S MODEL TO BRIDGE RELATIONSHIPS BETWEEN DONOR FAMILIES AND TRANSPLANT RECIPIENTS IN SOUTHERN CALIFORNIA**

Wanda H. Jones, Luz Diaz, Jeff Fleming, Stephnie E. Collazo, Marek J. Nowicki, Maria Stadtler. *Clinical Department, OneLegacy, Long Beach, CA, USA; Family Services Department, OneLegacy, Los Angeles, CA, USA; Clinical Department, Scientific Consulting, San Pedro, CA, USA*

Background: In the past, Procurement Coordinators cared for the families during and after organ donation. However, OneLegacy did not feel that an optimum family-oriented bereavement service was achieved. In 2002 a newly created Family Service Department and Aftercare Program integrating the Wolfelt's model "Caring for the bereaved" was implemented. This model explains the bereavement levels, empowers the right to mourn and encourages coordinators to be a companion throughout the entire bereavement process.
Aim: To evaluate if the integration of the Wolfelt Model into OneLegacy Bereavement program influences OneLegacy's donation rate.
Methods: OneLegacy's Family Service Program utilizes Wolfelt's model (ISBN-10: 1879651408, Companion Press, 2004) in two stages: 1. *During hospitalization* where the Family Care Coordinator's (FCC) role includes; supporting the family through the brain death process, collaborating with hospital staff to obtain consent and companioning the family during the donation process. 2. *After donation* already occurred, the Aftercare Specialist (FACS) continues companioning the family through letters regarding outcome of donation and transplantation. After careful assessment and agreement of both parties, the FACS is instrumental in facilitating donor families and transplant recipients meeting.
Results: Since the inception of the Family Services program in 2002 (fig.) over 100 donor families and transplant recipients have met successfully. With the creation of the FCC role in 2002 consent for organ donation has increased significantly (Chi-square <0.0001) even if the number of eligible donors unchanged since year 2000. Over 5000 families have participated in our Aftercare Program.



Conclusions: An OPO can be a companion to donor families supporting them throughout their grieving process through a well defined Family Service Program during and after donation. Collaboration between the OPO and the family resulted in higher donation rates.

EO22 **THE POINT OF THE RELATIVES OF DEAD DONORS IN ORGAN RETRIEVAL**

Aniko Smudla, Katalin Hegedus. *Semmelweis University, Institute of Behavioural Sciences, Budapest, Hungary; Semmelweis University, Institute of Behavioural Sciences, Budapest, Hungary*

Purpose: The rate of organ donation in Spain is the highest in the world, it is 36 per million population. This rate is 18 per million population in Hungary. We studied the opinion of the relatives of Hungarian dead donors and the psychological effect of the communication about organ-retrieval.
Method: The target group of this study was the relatives who agreed to organ-retrieval. The family members completed a questionnaire 3-5 months post donation. We studied the knowledge and opinions regarding donation and the communication in intensiv care unit. We measured the depressiv symptoms with the shortened version of the Beck Depression Inventory (BDI) and the bereavement with Revised Grief Experience Inventory (RGEI). Data was analyzed with SPSS.
Results: 20 relatives (5 men/15 women) filled out our questionnaire. The average age of respondents is 41,7 years. 50% of respondent knew the legal regulations of organ-retrieval before the donation. 75% were in agreement with the Hungarian legal regulation. 75% would agree with the donation of own organ. 70% would like to get some information on recipients who get their family member's organs. 57,9% of respondents had mild, moderately severe or severe depressive symptoms. Family members who thought that the diagnosis of brain-death is reliable had less depression ($p < 0,01$) and lower scores on the RGEI ($p < 0,01$) than the others. Higher RGEI scores represented a higher level of grief.
Conclusion: Although the permission of relatives need not be asked for donation, the communication in intensive care units is important. Adequate information needs to decrease the depressive symptoms and grief reaction. The society needs more information in order that transplantation becomes more accepted and supporteds more extensively.

EO23 **HOW DO BEREAVED FAMILIES CONCEPTUALIZE THE POST MORTEM ORGAN DONOR BODY AND ORGAN TRANSFER TO RECIPIENTS?**

Magi Sque[1], Tracy Long[2], Sheila Payne[3]. *[1]School of Nursing and Midwifery, University of Southampton, Southampton, Hampshire, United Kingdom; [2]School of Nursing and Midwifery, University of Southampton, Southampton, Hampshire, United Kingdom; [3]Institute of Health Research, Lancaster University, Lancaster, Lancastershire, United Kingdom*

Purpose: Families of potential organ donors are critical links in maintaining organ availability as they are asked to facilitate, or make a decision about donation, on behalf of their deceased relative. The usually sudden and unexpected nature of a potential organ donor's death could be expected to create certain challenges for the bereaved family. The decision, therefore, to facilitate or consent to the removal of organs from the deceased through the post mortem surgical intervention upon the body cannot be underestimated. So how do families conceptualize organ retrieval, the post mortem body devoid of vital organs and tissues, and organ transfer to recipients?
Methods: To answer the question posed above and to gain the relevant insights data from three qualitative interview studies, carried out with families approached about organ donation, and an exploration of correspondence exchanged between organ donor families and recipients were interrogated, using a thematic approach, for evidence of families' literal, symbolic or metaphorical representations of these experiences.
Conclusion: Families were concerned about the vulnerability of the deceased at organ retrieval and their perceived prolonged suffering. Families used graphic imagery to describe; the donation operation and what might be done to their relative; their beliefs, fantasies and feelings when viewing the body after the organs were removed; the importance they placed on restructuring the donor's life in the post death relationship with recipients; and their distress if they were denied the knowledge that the organ had achieved a human wholeness and purpose in another body.

EO24 **HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND HEPATITIS B DIAGNOSED IN A POTENTIAL ORGAN DONOR: CONFIDENTIALITY VERSUS DISCLOSURE AND DONOR FAMILY CARE**

Dominique H. Cook[1], Sabine M. Eggert[2]. *[1]Nephrology and Transplant Directorate, University Hospital of Wales, Cardiff, Wales, United Kingdom; [2]Intensive Care, Morriston Hospital, Swansea, Wales, United Kingdom*

A 58 year old male was referred as a potential organ donor to a transplant coordinator. Following consent and assessment, organ donation was planned. Routine laboratory analysis unexpectedly reported reactive HIV and positive Hepatitis B results. In this abstract we will discuss the conflicting interests of keeping the result confidential versus breaching it in the best interests of the family.
The donation process was halted and virology testing repeated. The donor family were informed that the need for confirmatory blood tests meant organ donation could not proceed, no details were disclosed. A positive HIV result was later confirmed. The diagnosis posed potential health risks to immediate family members and public health. A dilemma existed; should we breach patient confidentiality and disclose results to protect the family? The UK Policy for Management of Potential Organ/Tissue Donors with Confirmed Positive Virology (UK Transplant, 2004) advised informing all relevant parties whilst maintaining confidentiality. Further advice was sought from the General Medical

Council who stated that a duty of care to protect the public interest overrides the right to confidentiality.
The genitourinary medicine (GUM) clinic was approached to provide advice, counselling and care to relevant family members. We arranged a meeting with the transplant co-ordinator, the ICU consultant, a specialist nurse and the donor family, where the diagnosis was disclosed. Follow-up from GUM services and the transplant co-ordinator was arranged.
Virology testing in support of organ donation identified HIV and Hepatitis B in a potential donor. A duty of care to the patient and donor family meant a dilemma emerged between confidentiality and disclosure. Communication and collaboration between transplant co-ordinator, ICU consultant, and support services was essential to ensure safety and care of the donor family.

Quality assurance

EO25 QUALITY CONTROL PROGRAMME: PROVIDING GOLD STANDARDS IN ORGAN DONATION PROCESS

Elisabeth Coll, Beatriz Domínguez-Gil, Gloria De la Rosa, Gregorio Garrido, Eduardo Martín, Beatriz Mahíllo, Blanca Miranda, Rafael Matesanz. *Medical Department, Organización Nacional de Trasplantes, Madrid, Spain*

In order to identify the potential of donation and areas of improvement in the organ donation process, the Spanish National Transplant Organization started a Quality Control Programme in 1998. It includes an internal and an external evaluation (EE) of the process of donation. The present study shows the results of the EE. These data would provide the theoretical capability (Gold Standard) and gaps of organ donation process.
Methodology: Cross sectional study on EE carried out in the period 2001-2005. Discharge reports of deceased persons in the Critical Units(CU) were reviewed, and those with brain death (BD) diagnosis deeply analyzed by two hospital coordinators (at least one specialized in intensive care). Descriptive analysis is performed and results are provided according to Neurosurgery availability.
Results: *Hospitals with Neurosurgery (N=32).* Out of 8,086 deaths in CU, 1,196 were BD (14.8%), 604 of them became a donor and 592 did not (causes shown in figure 1).[figure1]Audit results: 10% of the medical contraindications were inadequate; 50% of maintenance problems, 1.8% of refusals to donation and 25% of logistic problems were correctible. Therefore, the number of potential donors would have been 713, 59.6% (IQ 54.4-67.9) of the BD.

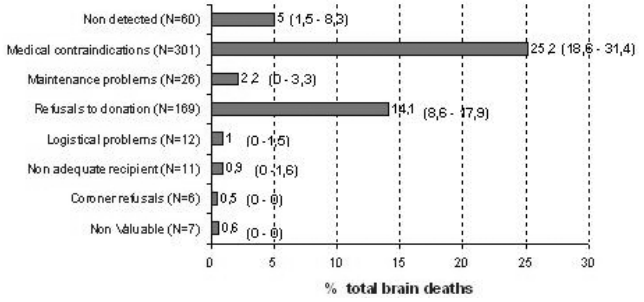


Fig. 1. Causes of donor loss in donation process (percentage and 25–75 percentiles). Hospitals with Neurosurgery (n=32). External evaluations 2001–2005.

Hospitals without Neurosurgery (N=27). There were 2,947 exitus in CU, 272 (9.2%) being BD. 138 of them became a donor and 134 did not (causes shown in figure 2). Audit results: 7.8% of medical contraindications were incorrect and 33.3% of the maintenance problems were avoidable. The number of potential donors would have been 170, representing the 62.5%(45.5-71.4%) of BD in CU.

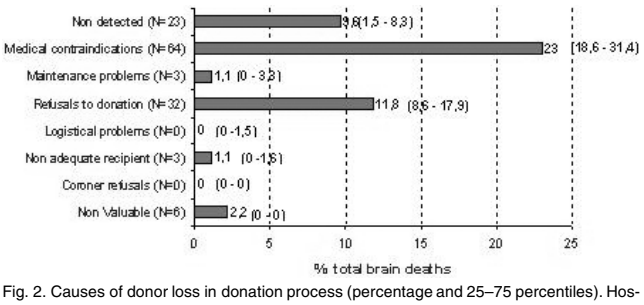


Fig. 2. Causes of donor loss in donation process (percentage and 25–75 percentiles). Hospitals without Neurosurgery (n=27). External evaluations 2001–2005.

Conclusions: Brain deaths represent 14.8% of exitus in CU in hospitals with Neurosurgery and 9.2% in those without it. The Gold Standard of potential donors would be 59.6% and 62.5% of brain deaths, respectively.

EO26 QUALITY CONTROL AND QUALITY INDICATORS OF ENCEPHALIC DEATHS IN TUSCANY

Giuseppe Bozzi[1,2], Annarosa Saviozzi[1,2], Paolo de Simone[2], Franco Filipponi[2]. *[1]Coordinamento Locale alla Donazione, Azienda Ospedaliero-Universitaria Pisana, Pisa, Italy; [2]Organizzazione Toscana Trapianti, Regione Toscana, Florence, Italy*

Aim: Monitoring of encephalic deaths (ED) in Intensive Care Units (ICU) is mandatory to increase deceased donor (DD) retrieval rates. We present here the indicators adopted in Tuscany for quality control of ED and DD rates.
Materials and methods: Prospective collection of case records on deceased donors in all regional ICUs from 2003 to 2006. The quality indicators adopted were: total number of deaths in ICUs per year; total number of EDs in ICUs per year; total number of patients with encephalic lesions (EL) in ICUs per year; contraindications to donation; donor maintenance failures; family opposition to donation; and total number of actual deceased donors (ADD) per year.
Results: Despite annual deaths in ICUs were stable over the observation period (from 1899 in 2003 to 1968 in 2006; Δ=+3.6%) ADDs rose from 106 to 148 (Δ=+36.9%). Namely, the quality indicators showed that the increase in mean ADD age (from 60 years in 2004 to 60.7 in 2006) was dependent upon a consistent increase in mean age of patients with ED (from 59 years in 2003 to 60.1 in 2006). Identification of EDs among patients with ELs was stable over the observation period (from 48% in 2003 to 49.3%; Δ=+2.7%) while donor maintenance failures dropped from 9% in 2003 to 2% (Δ=-77.7%) in 2006.
Conclusions: Our data show that nearly half of patients with ELs are reported as EDs to the regional transplant service authority every year. Despite increase in mean age of patients with ELs, the ADD rate rose thanks to improved identification of ED among ELs and better donor maintenance procedures. Adoption of quality indicators allows for efficient control of deceased donation and identification of process criticalities.

EO27 IMPACT OF IMPROVEMENT MEASURES TO INCREASE TISSUE DONATION – LESSONS FROM 2 UNIVERSITY HOSPITALS

Beatrice Pelleriaux, Vincent Lambert, Annelies Degrauwe, Wivine Andre, Olivier Cornu, Christian Delloye. *University Tissuebank, UCL St LUc, Brussels, Belgium*

Aim: To optimize tissue donation rates in our hospital (UCL), we implemented the Donor Action program (www.donoraction.org) in Dec.2005. By introducing relatively simple process improvements, tissue donation rates significantly increased in 2006. This study aimed at identifying further areas of improvement and comparing the UCL 2006 tissue donor conversion rates with those of the reference center Vall d'Hebron Hosp. in Barcelona, Spain (UAB)*.
Methodology: We retrospectively reviewed all 847 UCL death records from Jan. until Dec. 2006 and compared them with 1,960 UAB deaths between May 2001 and May 2002. We calculated the theoretical and remaining potential for donation.
Results: Overall, 682 (80.5%) of all UCL deaths were excluded for tissue donation because of medical contra-indications, compared to only 73.6% in the UAB (P=.0001). Of the 165 (19.5%) theoretically potential UCL donors, 65 (7.7%) were excluded due the lack of blood samples for serology or a delayed referral (222 in UAB, or 11.3%, P=.0034), which left us with 100 potential UCL cases (11.8% of total deaths) compared to 294 UAB cases (15%, P=.0254). Despite lower total consent rates (UCL: 47.8% vs. UAB: 59.2% (NS)), bones were harvested in 22 UCL cases (2.6% of all deaths, 22% of potential) vs. only 30 in (1.5% of all deaths, 10.2% of potential, P=.0026).
Conclusions: UCL bone donation rates were significantly better than those at the UAB. Additional corrective measures to limit the number of delayed referrals and non-identification by promoting tissue donation amongst our medical and nursing staff and offering them tailor-made education may be the best tool to further increase tissue donation rates.
Reference: Pont T, Gracia RM, Valdes C et al., Theoretical Rates of Potential Tissue Donation in a University Hospital. Transplant Proc 2003, 35:1640-1641.

EO28 WHAT IS THE BEST METHOD TO COMPARE THE INTERNATIONAL ORGAN DONATION RATES?

Natividad Cuende, Jesus Huet, Manuel Alonso, Pablo Castro, Jose M. Muñoz-Terol. *Andalusian Transplant Coordination Office, Andalusian Health Service, Seville, Spain*

Background: The organ donation rates are strongly associated with population aging. Recently, it has been demonstrated that one third of the differences in donation rates between countries can be explained by the different percent-

age of population aged 65 years or over. In consequence, comparisons of the donation rates must be performed using age adjusted donation rates.
Purpose: Identify the best method to adjust for age the international organ donation rates.
Methods/Materials: The deceased organ donation rates of 45 countries have been age-adjusted using the indirect method. We selected the Spanish and US age specific donation rates as the standards. We also adjusted for age the Spanish and US donation rates using the direct method and selecting six different standard populations: Spanish, US, European and World populations from the United Nations Population Division and Old Standard World and European Populations used by WHO. Finally, we calculated the Comparative Donation Ratios (and their 95% CI) obtained from the six standard populations.
Results: The standardized rates by the indirect method using the Spanish age specific donation rates showed marked changes related to the crude donation rates in few countries, either increasing or reducing them. The largest changes were observed in the countries with the lowest and highest old-age index of the population. Using the US age specific donation rates, the standardized rates suffered a mean change of –0.36 point p.m.p. as compared with that obtained using Spanish rates. The Comparative Donation Ratios obtained with the direct method showed values from 124% to 144% according to the standard population selected.
Conclusion: To compare international donation rates, we consider that the ideal method of standardization is the direct method using the real world population, as estimated by the United Nations, as the standard.

Donor detection

EO29 IDENTIFICATION AND ASSESSMENT OF HOSPITALIZED SEVERE BRAIN DAMAGE PATIENTS IN DEPARTMENTS OTHER THAN ICUs IN THE EMILIA-ROMAGNA (ER) REGION: A WAY TO INCREASE ORGAN PROCUREMENT

Maria Celeste Bonanno, Carlo De Cillia, Alessandra Falaschini, Angelo Ghirardini, Alessandra Tassoni, Lorenza Ridolfi. *Emilia-Romagna Transplant Reference Centre, Policlinico S. Orsola-Malpighi, Bologna, Italy*

The main discharge diagnoses leading to brain death assessment are represented by cerebral contusion, brain haemorrhage, ischaemic stroke. A decrease in organ donation from brain damage deaths due to a reduction in their number was seen last year in ER. Therefore the hospitalized severe brain damage patients in departments other than ER ICUs have been evaluated in order to increase organ procurement.
Methods: All in-hospital deaths due to three main discharge diagnoses in any department other than ER ICUs (59 hospitals in all) throughout 2005 have been reviewed. Afterwards the review has been circumscribed to those hospitals where the "Donor Action program" was in force in 2005 (25 hospitals in all), focussing on in-hospital deaths within 3 hospitalization days in the $<$ 85 age range.
Results: There were 351 in-hospital deaths within 3 hospitalization days in the $<$85 age range.
18 departments were involved in patients' hospitalization and assessment.

	Hospit. days			
Age range	Day 1 Deaths No.	Day 2 Deaths No.	Day 3 Deaths No.	Total
15-44	2	0	0	2
45-64	17	2	6	25
65-74	36	16	15	67
74-84	158	53	46	257
Total	213	71	67	351

	Hospit. days			
Departments	Day 1 Deaths No.	Day 2 Deaths No.	Day 3 Deaths No.	Total
Internal Medicine	100	30	37	167
Neurology	34	19	15	68
Emergency ward	36	4	2	42
Geriatrics	20	11	7	38
Neurosurgery	16	4	4	24
Nephrology	2	0	1	3
Others	5	3	1	9
Total	213	71	67	351

Conclusions: These data show that departments other than ICUs may contribute to enlarge potential donor source; extending control to these departments should improve and increase organ procurement effectively.

EO30 CHANGE OF FOCUS: FROM INTENSIVE CARE TOWARDS DONOR PROCUREMENT

Käthe Meyer[1], Ida Torunn Björk[2]. [1]*Surgical Department, Rikshospitalet-Radiumhsopitalet, Oslo, Norway;* [2]*Institute of Nursing and Health Sciences, Faculty of Medicine, University of Oslo, Oslo, Norway*

Objectives: Intensive care staff plays a central role in organ donation by identifying a potential donor, taking care of relatives needs and by introducing the possibility for organ donation. Hospital staff can experience psychosocial, organisational and professional barriers to organ donation.
The purpose of the study was twofold: (i) investigate hospital based education in organ donation at the 28 Norwegian donor hospitals, (ii) elicit intensive care nurses needs for knowledge and support in changing focus from intensive care towards organ donation.
Material and methods: Analysis of hospital based education and guidelines in organ donation by comparing documents available.
Nurses at three hospitals were invited to participate in focus groups. The method was chosen to use group dynamics to acquire qualitatively good data about the participants' experience and opinions in organ donation. Transcripts were analysed according to Kvale's (1997) three level analyses of qualitative data.
Results: Eleven units had their own guidelines and procedures. Only three hospitals had organ donation in their internal education program.
Intensive care nurses expressed responsibility both for the potential organ donor, his relatives and patients on waiting list by arranging processes that lead to organ donation. Nurses' knowledge, level of experience and attitudes were seen as central for change of focus.
Collaboration and mutual understanding among the staff was pointed out as important. Time of death was explained as a turning point.
Debriefing of the entire staff was described as a method for cognitive and practical training by sharing knowledge and experience.
Conclusions: Guidelines for hospital based education in organ donation covering legislation, procurement and communication processes must be worked out. Hospitals should implement debriefing for intensive care staff following an organ donation process to strengthen teamwork and mutual understanding of the donation process.

EO31 THE ROLE OF ULTRASONOGRAPHY TRANSCRANIAL DOPPLER IN THE CNT ITALIAN GUIDELINES DIAGNOSIS OF BRAIN DEATH

Antonella Spada, Alfredo Conti, Olivia Penna, Puliatti Francesco, Roberto Messina. *Neuroscienze, Scienze Psichiatriche ed Anestesiologiche, Università degli Studi, Messina, Italy*

Objective: Although clinical examination and documentation of clinical signs of brain death are very uniform, there are significant differences in the guidelines for using confirmatory tests to corroborate the clinical signs. The use of ultrasonography transcranial doppler (TCD) for assessing of critical neurological patients and brain death is universally accepted. In this study we describe clinical effectiveness of TCD signs in total cerebral circulatory arrest (CCA), according to NTC Italian guidelines. The characteristic doppler signs demonstrating the cerebral blood flow arrest: oscillating flow, systolic spikes and zero-flow.
Methods: Ninety patients admitted to Intensive Care Unit of University Hospital of Messina, treated by TCD, with a clinical diagnosis of brain death, observed since January 2001 to December 2006. The most frequent aetiology of coma was head injury followed by spontaneous cerebral haemorrhage.
Results: In 90.4% of patients a clear flow signal was detected through the temporal window at the time of the first examination. In the remaining 9.6% patients no signal was detected. In 63% of patients a typical oscillating flow pattern was detected bilaterally. In 5.7% patients ultrasound measurements showed a pattern characterized by systolic spikes recorded bilaterally on the MCAs and ICAs. In 19.1% of patients systolic spikes were recorded on one side and oscillating flow in the contralateral side.
In 1.6% of cases a persistent diastolic flow was recorded on intracranial vessels despite clinical evidence of brain death.
Conclusions: In agreement with previously published data, we concluded that TCD ultrasonography, performed according to the NTC guidelines, is an highly specific and sensitive confirmatory test and should be included as additional test in the protocol for the assessment of brain death in European Community.

EO32 RETROSPECTIVE ANALYSIS OF DEATHS IN A GERMAN UNIVERSITY HOSPITAL

Peter Petersen[1], Carl-Ludwig Fischer-Froehlich[2], Alfred Koenigsrainer[1]. [1]*Klinik f. Allg., Viszeral- und Transplantationschirurgie, Universitaetsklinikum Tuebingen, Tuebingen, Germany;* [2]*Region Baden-Wuerttemberg, Deutsche Stiftung Organtransplantation, Stuttgart, Germany*

Aim: In order to improve organ donations in a hospital with neurosurgery and

transplantation unit the question was analyzed wether brain death certification (BD) and donation request were initiated always if possible.
Methods: All 648 hospital deaths during the year 2006 were reviewed retrospectively by studying medical records and consultation of the physicians. The possibility of organ donation was questioned according to the algorithm presented in the table.

	YES	NO	Remark if NO
Death due to cerebral complications	310	338	
Hemodynamically stable	188	122	
Brain death confirmed or expected	148	40	
No medical contraindication	53	95	
Organ donation considered	37	16	hemodynamic stabilisation was omitted
Request started (cases without completed BD)	10	7	BD impossible to confirm
Request started (cases with completed BD)	19	1	no relatives
Consent given (cases without completed BD)	2	8	
Consent given (cases with completed BD)	12	7	
Organ donation realized	12	2	1 BD not confirmed, 1 late contraindication

Results: In 29 of 310 deaths due to cerebral complications donation was requested. A request was impossible in 8 cases.
In 6 cases resuscitation from shock or cardiac failure was aborted in case of questionable haemodynamic stability (16-77 years); in 7 cases with (77-86 years) and 9 without artificial ventilacion (60-96 years) death due to cerebral complications occurred within 48 hours, but medical records were not conclusive in terms of exclusion criteria for organ donation.
Conclusion: The detection of donors in patients below 77 years ventilated on ICU was acceptable. In patients above this age or without artificial ventilation, as well as after resuscitation from cardiac failure or shock, further hemodynamic stabilisation in order to enable an organ donation was omitted frequently.

Link donor recipient

EO33 KIDNEY EXCHANGE PROGRAMS: VARIOUS MODELS AND EXPECTED EFFICIENCY

Katarina Cechlarova[1], Vladimir Lacko[2], Ivan Zezula[1], Luboslav Bena[3]. *[1]Institute of Mathematics, P.J. Safarik University, Kosice, Slovakia; [2]Institute of Computer Science, P.J. Safarik University, Kosice, Slovakia; [3]Transplant Centre, Teaching Hospital of L. Pasteur, Kosice, Slovakia*

Objective: To overcome the shortage of cadaveric kidneys for transplantation and not to lose willing living donors, who are incompatible with their intended recipients, several countries, transplantcenters and transplant organizations started various programs for kidney exchanges. Such programs require cooperation among several entities, which all have partially different objectives.
Moreover, as many algorithms could be used, a careful evaluation of their efficiency is necessary.
Aim: To present several approaches that incorporate individual as well as overall optimality criteria and to compare their strengths and weaknesses. To simulate kidney exchanges between randomly generated donor-recipient pairs in attempt to find dual, triple and longer cycles of exchanges.
Methods: We used methods of game theory to define and compare several optimality criteria, leading to different choices of algorithms. Three different algorithms (Edmonds', Irving's and TTC algorithm) were used for simulations with 1000 random samples of 10, 40, 100 and 200 donor-recipient pairs. The results obtained from all algorithms were evaluated and compared using standard statistical methods. Special attention was given to sensitivity analysis for small samples.
Results: The success rate of each algorithm rises with the sample size. However, also in the case of the least sample size (10 pairs), the algorithms were able to find at least one exchange in two-thirds of the samples.
Conclusions: Kidney exchange programs could present a suitable complement to existing cadaveric and living related transplantations even for small transplantation centres, moreover, after solving the existing legal and ethical questions, cooperation of more centres or even countries could substantially increase the number of realized kidney transplantations.

EO34 CHANGEMENT FROM A CENTER ORIENTED TO A PATIENT ORIENTED ALLOCATION SYSTEM IN SWITZERLAND

Dagmar Vernet, Marc Marthaler, Claudia Luescher, Franziska Beyeler, Barbara Christen, Christine Zimmermann, Hans-Peter Marti, Conrad E. Mueller. *National Coordination Center, Swisstransplant, Berne, Switzerland*

Background: Switzerland is currently in a transition period before the introduction of the first Swiss federal transplant law, it states that the organ allocation system has to be changed from a centre oriented in a patient oriented organ allocation system. Currently only Kidneys for patients on renal waiting list with a high antibody rate are allocated directly. An informatics organ allocation system must be created.
Methods: The definitions, dispositions and descriptions of the national allocation rules and priorities were defined from the public health care ministry in collaboration with the Swisstransplant working groups and have to be included in the development of the informatics organ allocation system
Results: The tasks of organising, development and introducing of an informatics organ allocation system are multiple; medical, legal, technical and financial aspects have been considered. Organ viability, extraction, preservation, allocation and transport, the medical status of the organ recipient are all additional parameters, which determine the quality of the transplant outcome.
Conclusions: The best organ for the most compatible recipient have to be allocated, the medical and legal aspects have to be respected. The system has to be introduced in all transplant centres and donor hospitals.

EO35 AGE MATTERS: DO WE HAVE TO CONSIDER THE AGE DIFFERENCES BETWEEN DECEASED DONOR AND RECIPIENT IN KIDNEY TRANSPLANTATION?

Carl-Ludwig Fischer-Froehlich[1], Jens M. Mayer[2]. *[1]Region Baden-Wuerttemberg, Deutsche Stiftung Organtransplantation, Stuttgart, Germany; [2]Transplantation Surgery, Unitversitaets Klinikum, Ulm, Germany*

In kidney transplantation (KTX) the relation between deceased donor age and recipient age is not well considered with the exception of donors older than 65 years. In the lack of conclusive data, we postulate that grafts from older donors in younger recipients have an inferior long term function rate. This results into an unnecessarily earlier return to dialysis.
Methods: (1) Review of published ET and CTS data with regard to graft function rates and donor/recipient age. (2) Assessment of five year graft function rates with respect to the combination of donor and recipient age of 978 kidneys retrieved from deceased donors in the eastern region of Baden-Wuerttemberg from 1992 to 2004 and transplanted at multiple centres. Donor and recipient ages were categorized as shown in the table. Graft failure was defined as return to dialysis or death of the recipient with functioning graft.
Results: (1) In summary the ET and CTS data show a decrease in five year function rates separately for increasing donor and recipient age. (2) In the population investigated the combined effect of increasing donor and recipient age showed a stepwise decrease in five years graft function rates (table).

Five year kidney graft function rate (Kaplan-Maier), $p<0{,}0001$ log rank Test

Donor age (years)	Recipient age (years)		
	0-50	50-65	above 65
0-50	78% ± 3% (n=331)	76% ± 4% (n=196)	78% ± 10% (n=19)
50-65	71% ± 5% (n=158)	71% ± 5% (n=115)	60% ± 20% (n=10)
Above 65	61% ± 11% (n=21)	44% ± 16% (n=11)	51% ± 7% (n=77)

Conclusion: For the individual recipient, a kidney from a young deceased donor is desirable. However KTX of grafts from old deceased donors in young recipients results in a higher risk for inferior long term outcome. Taking into account an earlier return to dialysis, an increased morbidity and time off work for the individual patient, KTX with grossly age mismatched grafts is at a disadvantage for the society as a whole. The relation between donor and recipient age should be considered and further evaluated.

EO36 WHERE, IN SWITZERLAND, ARE THE ORGANS OF OUR CHILDREN DONORS GOING?

Barbara Christen, Franziska Beyeler, Claudia Luescher, Dagmar Vernet, Christine Zimmermann, Hans-Peter Marti, Conrad E. Mueller. *National Coordination Center, Swisstransplant, Berne, Switzerland*

Introduction: Switzerland has a population of 7.5 mio inhabitants, with a donor rate of 11.8 pmp over the last five years. In the average 31 children were on the waiting list. So, with a short list of recipients and a small donor pool, it is important to analyse the contribution of child donors.
Method: A descriptive retrospective study over the last five years (2002-2006) was performed. Child Donor (CD) means all donors under the age of 16 years on the day of donation. Child Recipient (CR) means all receivers' under the age of 16 years on transplantation.
Results: 19 CD occurred in this timeframe. They procured a total of 69 organs, which equals 3.6 organs per donor. 25 of these organs (36.2%) went to CR (4 hearts, 2 lungs, 8 kidneys, 11 livers and no small Bowels. The other 44 organs (63.8%) were allocated to adult patients or offered to foreign NTOs. The reason for non-allocation of a CD organ to a CR was the lack of a compatible CR on the waiting list.
Discussion: The problem of a small donor pool in combination with a short list of recipients is, that a good organ arrives often on the wrong time. For the small group of CD and CR, it is therefore important to collaborate across the national boarders to improve the situation for child recipients.