# Annual Report 2017

## Transplantation Center

UniversityHospital
Zurich

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# Contents

# 1. The Transplantation Center in its 11th year of operation

## 1.1 Summary

*Prof. Nicolas Müller, Head of the Transplantation Center*

**Liver and kidney transplants had a record-breaking 2017, with 104 kidney and 64 liver transplants.**

### Transplantation Center

Immunology and Intensive Care are also now represented on the Board of Trustees.

### Boards and authorities

The HSM (highly specialized medicine in Switzerland) recommended an unchanged allocation of transplantations. The benchmarking report on lung transplantations was finalized and presented to unimedsuisse.

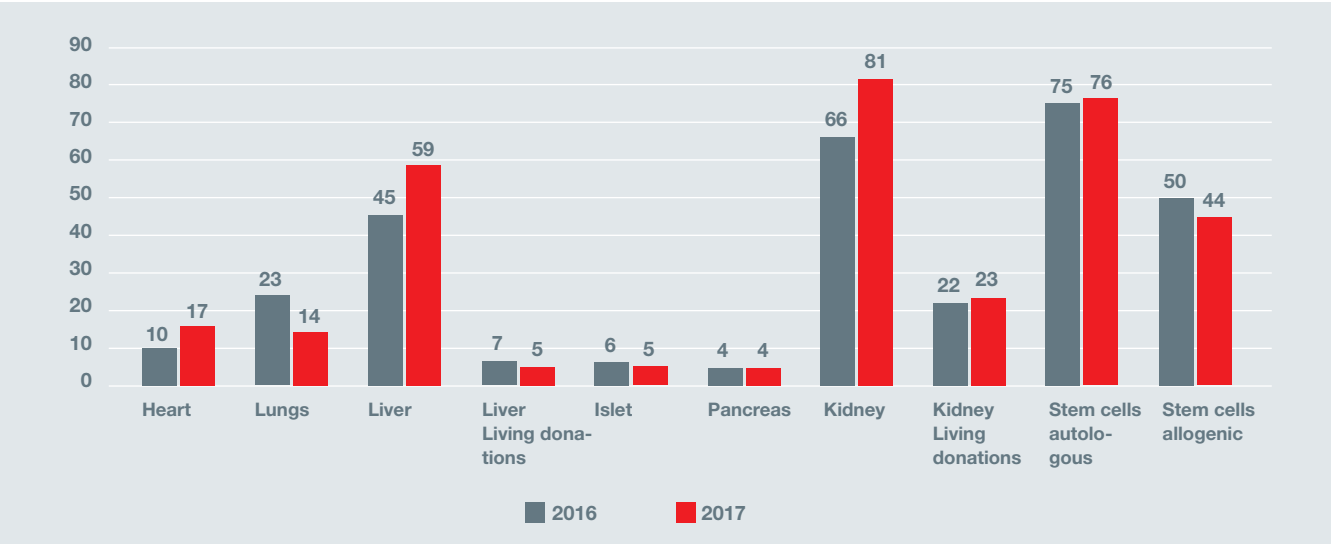
### Research and training

The center was highly successful once again this year with 62 publications. It is particularly worth mentioning the renewed commitment of the Swiss National Fund for the Swiss Transplant Cohort Study of CHF 3 million.

### Objectives for 2018

- Extending benchmarking to heart and kidney, consolidation for lung and liver: the financing is currently pending; this decision needs to be made at a national level
- Approval for hand and face transplants by the Federal Office of Public Health (FOPH)
- FOPH approval for uterus transplants
- Participation in various personalized medicine initiatives Another revised submission of an STCS-based project to the Swiss Personalized Health Network (2017–2020); project coordinator: the Personalized Health and Interoperability Platform project of the Swiss Transplant Cohort Study (STCS-PHIP)
- Promotion of randomized studies
- Establishment of new collaborations: intercohort collaboration with PERSIMUNE (www.persimune.dk), Prof. Jens Lundgren, together with STCS: development of a shared platform

**Number of organ and stem cell transplantations 2016 and 2017**




In 2017, 31 patients on the organ transplantation waiting list died (2016: 26 patients).

# 2. Center-specific and integrative functions

## 2.1 Transplantation coordination

*Werner Naumer, Transplantation Coordination Director, and Martin Wendt, Assistant Director*

2017 was marked by an increase in evaluations by the transplantation coordination team in the liver program. To ease the burden on the resident physicians on the ward, the AST management arranged for the transplantation coordination team to organize the tests on in-patients in addition to scheduling tests on elective admissions. The number of evaluations in the living donor liver and living donor kidney programs were the same as last year.

There were staffing changes in the team over the year. Two employees left us in April and September for personal reasons. Two new employees were quickly recruited and they took up their roles in October and November. This change resulted in extra pressure on the other team members. All organ programs and organ coordination continued smoothly thanks to team members' willingness to do on-call shifts and support each other. The new team members also integrated quickly and professionally into their areas. Specific measures taken over the last few years resulted in overtime being kept within reasonable limits, even during this period.

In addition to their roles, one employee also successfully completed a CAS in "Advanced Leadership" at the Kaleidos University of Applied Sciences. Another employee also successfully completed the SAQ QUALICON diploma in "Advanced Methods for Process and Performance Improvement", the "Swiss Organ Donation Process Expert" certificate and the UEMS exam in "General Transplant Coordination" in Barcelona.

A project that aims to close the Organ Access database and integrate all the data into the UHZ's clinical information system (KISIM) started this year. A Medical Informatics student has been found who will carry out the process description as part of their Bachelor's thesis. This partnership was successfully concluded thanks to close cooperation with the individual TPL coordination team members.

**Personnel as at December 2017**

Six people are employed in transplant coordination.

The FTE for each staff member is as follows:

| | | |
|---|---|---|
| Werner Naumer | 100% | |
| Martin Wendt | 100% | |
| Mia Eugster | 80% | |
| Martina Neff | 50% | |
| Susanne Anklin | 100% | *from Oct 2017, until fully integrated, then 80%* |
| Petra Sonderegger | 100% | *from middle of Nov 2017, until fully integrated, then 80%* |
| Therese Reh | 50% | *(no on-call shifts)* |

At the end of 2017, this meant coverage of 490% in terms of posts available for the on-call service. This on-call service extends over 24 hours / 365 days per year.

In total, around 1,130 hours were coordinated in 2017.

Most of these were nights during the week or at weekends.

**Patient care**
The following figures were recorded for patient care:

| **Living donor kidney donations** | |
|---|---|
| Evaluations | Stage I: 53, Stage II: 43 |
| Transplants | 23 |

| **Living donor liver donations** | |
|---|---|
| Evaluations | Stage I: 17, Stage II: 7 |
| Transplants | 5 |

*Patients accepted onto the waiting list*
- Coordination use: 160
- Foreign offers: 430

*Events*
- Information evening for kidney patients (four times per year)
- Liver information afternoon (June 2017)

*Project work*
- UHZ SOAS data transfer
- Database Access into KISIM
- STATKO
- SDTA
- STALOS
- Quality management (audit of heart and lung program)

*Presentations*
- Classes in Careum
- Medilab Bern
- ZINA, Waid City Hospital Nephrology
- Various training sessions on UHZ wards

*Learner support*
- Interview for care work
- Written collaboration

*Ongoing professional development*
- Thun STS
- EDTCO Barcelona
- UHZ Transplantation Center fall symposium
- Various grand rounds

## 2.2 Interdisciplinary HLA Typing Laboratory

*Jakob Nilsson, Attending Physician, Transplantation Immunology, and Barbara Rüsi-Elsener, Head BMA, HLA Typing Laboratory*

**Completed analyses**
In 2017, the HLA Typing Laboratory continued to provide the UHZ Transplantation Center with the highest international standard of transplantation and immunological lab analyses.

A total of 5,751 clinical samples came into the laboratory, on which 1,616 transplant-related HLA typings and 5,664 bead-based analyses of anti-HLA antibodies were carried out. The laboratory is available around the clock, ensuring the rapid HLA typing of organ donors and enabling the allocation of donated organs within the Swiss Organ Allocation System (SOAS). In 2017, we carried out HLA typing on 48 deceased organ donors. We also assisted with cross-matching a further 78 deceased organ donors. We supported the stem cell transplantation program by carrying out immunological transplant tests on 137 potential stem cell recipients and performed HLA typing on 203 potential donors.

**Waiting list for organ transplantation**
The HLA Typing Laboratory carries out immunological transplantation tests around the clock, ensuring that the waiting lists for an organ transplant remain up to date. On January 1, 2018, 318 patients were on the waiting list for a donor kidney, of which 125 were newly registered in 2017. In the same period, a record number of 104 patients received a new kidney at UHZ (of which 23 were from living donors). With regard to lung transplants, we carried out 25 immunological transplant evaluations of potential donors. On January 1, 2018, 11 patients were on the waiting list for a lung transplant. We also carried out the immunological characterization of 38 potential candidates for a heart transplant, 17 of which were transplanted at UHZ in 2017. As at January 1, 2018, 12 patients were on the waiting list.

**Key changes in laboratory tests**
Over the course of 2017, several changes were made to laboratory routines. When evaluating organ transplantations and assessing panel-reactive antibodies (PRA), we used cell-based assays as well as Luminex-based cross-matchings. We also developed a method for a vir-

tual cross-matching (VxM), which we have been using in clinical practice since the beginning of 2018. In addition, we changed our process when adding EDTA to detect the prozone effect in bead-based analyses of HLA antibodies. When carrying out HLA typing of potentially related stem cell donors when a blood sample is difficult to obtain, we now isolate DNA from saliva instead of using oral smears; this results in significantly higher quantities of DNA.

**Additional information**

Dr. Jakob Nilsson (MD, PhD) joined the laboratory as its new Co-Director. Annina Reiser also joined the laboratory team as another BMA. Within the UHZ's organizational structure, the interdisciplinary HLA Typing Laboratory moved from the Department of Visceral Surgery to the Department of Immunology. Our accreditation by the European Federation of Immunogenetics (EFI) was successfully renewed in 2017. The laboratory also supported the Swiss Transplant Cohort Study (STCS) in 2017 by processing 542 clinical samples of transplanted patients as well as receiving and dispatching stored samples for other studies analyzed by STCS.

## 2.3 Awards

**Awards to Transplantation Center employees**

*Swiss Transplantation Society Award 2017*

Dr. Rodriguez from the Department of Cardiovascular Surgery received the Swiss Transplantation Society prize for his experimental work on the immunoregulatory mechanisms of NAD+.

*Best Paper Award*

Riccardo Schweizer, 15th Annual Meeting International Federation for Adipose Therapeutics and Science, Donor-specific Adipose-derived Stromal Cells attenuate Graft Vasculopathy and Rejection in Rodent Vascularized Composite Allotransplantation

*Grants (Brocher Foundation)*

Jan Plock, Tanja Krones, 1st International Workshop on Bioethical Dilemmas and Challenges in Vascularized Composite Allotransplantation

*German Society for Hematology and Oncology (Best Abstract)*

Wong, H.-C.A., Isringhausen, S., Manz, M.G., Nombela Arrieta C., Müller A.M.S. University Hospital Zurich, Hematology Zurich, Switzerland Alloreactivity targets the bone marrow microenvironment following allogeneic hematopoietic cell transplantation Oncol Res Treat 2017;40(suppl 3):1-308

*Best Abstract Award, Annual Convention of DGHO/OeGHO/SGMO and SGH*

Hui-Chyn Wong/Antonia Müller, Alloreactivity targets the bone marrow microenvironment following allogenic hematopoietic cell transplantation

## 2.4 Collaboration in national and international committees

**Nicolas Müller**
- President, Swiss Society of Infectious Diseases
- Member, IVHSM Specialist Body
- Chairman of the Scientific Committee of the Swiss Transplant Cohort Study
- Member of the Scientific Committee of the Swiss Society of Transplantation Editorial Board Xenotransplantation; Transplant Infectious Diseases

**Roger Lehmann**
- President of the Central European Diabetes Association (FID) 2013–2017
- Board Member of the European Pancreas and Islet Transplant Association 2013–2017

**Christian Benden**
- STALU, President
- ISHLT, Governance Committee Member
- ISHLT, Scientific Program Committee Past Chair
- ISHLT, 2019 Scientific Program Committee Member
- ISHLT, Governance Committee Member
- IPTA, Education Committee Past Chair
- ERS, Transplantation Group Chair
- TTS, Heart and Lung Committee Member

*Journals:*
Journal of Heart and Lung Transplantation,
Editorial Board Consultant Clinical Transplantation,
Associate Editor

**Olivier de Rougemont**
- Member of the Board: STAN, STALOS, STAP (President)
- Scientific Committee: Swiss Transplant Cohort Study

**Philipp Dutkowski**
- President STAL President STAPT
- Member of Comité Médical
- Member DCD Working Group Swiss Transplant

**Andreas Flammer**
- Heart Failure Association of the European Society of Cardiology Working Group for Imaging

**Günther Hofbauer**
- President of SCOPE (Skin Care in Organ Transplant Patients Europe)

**Ilhan Inci**
- STALU

**Josef Jenewein**
- President of the Swiss Society of Consultation-Liaison Psychiatry (SSCLP)
- Board Member of the European Association of Psychosomatic Medicine (EAPM)

**Thomas Müller**
- Member of the Boards / Scientific Committees (STAN, STALOS)
- President STAN 2017
- Scientific Committee (Swiss Transplant Cohort Study, Swiss National Science Foundation member evaluation body)
- Member of Ethics-Committee of the Canton of Zurich

**Mjriam Nägeli**
- Academic secretary SCOPE (Skin Care in Organ Transplant Patients Europe)
- Scientific Committee Swiss Transplant Cohort Study

**Jan Plock**
- Member of Basic Science Committee ESOT, since 2015

**Frank Ruschitzka**
- President of the Heart Failure Association of the European Society of Cardiology
- 2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS
- 2016 ESC Guidelines on acute and chronic heart failure

**Urs Schanz**
- President of Swiss Blood Cell Transplantation (SBST)
- Member of the Committee on Allogenic Stem Cell Transplantation (KAT)
- Board of Directors, Blood Donation, Swiss Red Cross
- Member of NAC (Nuclear Accident Committee) of EBMT

– Working Group Hepatitis C in Transplantation in Swiss Transfusion SRC
– Senior editor: Transfusion and Apheresis Science (2013–2015)
– Editorial board member Transfusion and Apheresis Science since 2016

**Peter Steiger**
– Steering Group Peer Review of IQM (Initiative Qualitätsmedizin)

**Markus Wilhelm**
– President of the Working Group Heart of Swisstransplant (STAH)
– President of the Comité Médical of Swisstransplant
– Member of the Working Group for Procurement and Transportation (STAPT)
– Member of the Board of Representatives of the Swiss Transplant Cohort Study (STCS)
– Member of the Working Group Heart Failure of the Swiss Society for Cardiology
– Member of the Mechanical Circulatory Support Council of the International Society for Heart and Lung Transplantation

## 2.5 Professional development

*Prof. Nicolas Müller, member of the TNT organization committee*

Our seminar: "Hot topics in transplantation" (TNT) (TNT Annual program 2017) once again showed the range of scientific activities underway at local and international level, as reflected in the list of internationally renowned speakers.

This was only possible with generous sponsorship (Astellas Pharma AG, MSD AG, Novartis Pharma Schweiz AG, Pfizer AG, Sanofi, and Roche Pharma (Schweiz) AG), and we would like to take this opportunity to express our sincere gratitude to them.

## 2.6 Swiss Transplant Cohort Study (STCS)

*Prof. Nicolas Müller, Chairman of the STCS Scientific Committee*

In 2017, the Swiss Transplantation Cohort Study (www.stcs.ch) received another CHF 3 million of funding from the Swiss National Science Foundation. Their assessment acknowledged both the STCS' global structure and its professional collaborations. So far, 118 *nested projects* have been evaluated, resulting in 44 publications, all with the involvement of UHZ.

Zurich treated most of the patients involved: out of 6,300 patients, 2,189, or one-third, were transplanted in UHZ. Ensuring that sample and data collection is performed as effectively as possible represents a major logistical challenge. Sincere thanks are due to all those involved.

# 3. Organ donation network

### 3.1 Organ donation campaigns 2017

Since separating the organ donation side from the recipient side, the activities of the Donor Care Association have been covered in a separate report.

# 4. General care of transplant recipients at the Transplantation Center

### 4.1 Anesthesiological aspects of transplantation

*Prof. Marco P. Zalunardo and Dr. Rolf Schüpbach*

#### 4.1.1 Organization

Working with the Clinic for Nephrology under their leadership, an algorithm was developed for pre-operative cardiac risk stratification for patients due to undergo a kidney transplant. All listed patients will be, and have been, reassessed and the process explained to them at their regular examinations. To mitigate the stress of multiple consultations at the UHZ for patients from Ticino, a partnership has been agreed with Dr. John Bonvini, Head of Anesthesiology at the regional hospital in Lugano. Dr. Bonvini assesses all patients regarding undergoing general anesthetic for a kidney transplant.

#### 4.1.2 Departments

Following the joint consultations, 18 patients were accepted onto the waiting list for lung transplants, 86 patients for liver transplants and 118 patients for kidney transplants.

There was a significant drop in the number of lung transplants / recipients in 2017 (14 vs. 23 in 2016). At times, only 6 patients were on the waiting list. By contrast, the number of liver transplants rose significantly, from 52 in 2016 to 64 in 2017, a record!

These numbers were only exceeded by kidney transplants, which increased by 18% – from 88 to 104 – the highest number UHZ has ever treated.

### 4.2 Nursing care at the Transplantation Center

*Beatrice Biotti, Head of Nursing, and Ramona Odermatt, Specialist Nurse MB AST*

#### 4.2.1 Transplantation nursing care

The nursing team in Department East E III, managed by Barbara Wyss, looks after patients before and after a lung, liver, kidney, pancreas or islet cell transplant. Patients who have been called up for a transplant are prepared for the operation by the department. After the transplant, the department's

focus is on educating the patient. Patients and/or their relatives are taught how to look after themselves after the transplant, including taking immunosuppressants.

### 4.2.2 Swiss Transplant Care Network

Members of the Swiss Transplant Care Network met up twice in 2017. Two network meetings were held in Bern in May and October. Specialist nursing staff from all Swiss transplantation centers took part, discussing the current issues in transplant care.

On September 6, 2017, the Swiss Transplant Care Association (STAPF), working with the Transplant Care Network, organized two pre-congress workshops at the 14th Congress of the International Society for Organ Donation & Procurement in Geneva, Switzerland. The workshop's topics included "Training and Core Competencies in Transplant Care" and "Different Roles of Specialist Nursing Staff in the Transplant Process and Inter-professional Collaboration". National and international speakers took part in both workshops.

### 4.2.3 "Kidney transplantation" APN

*APN care consultations*

One-off training and advice for all new transplant recipients: as part of the advanced practice nurse (APN) care consultations, a total of 392 training, information and advice sessions were provided by the APN to post-kidney transplant patients. Relatives attended a few of these sessions. Some of the sessions that took place as part of the study were conducted by telephone.

The information brochures for those involved before and after a kidney transplant were revised. Brochure 1 has been redesigned and is currently being checked by reviewers.

*"Transplant patients support transplant patients" program*

Two patients on the waiting list for a kidney transplant were each put in contact with an experienced transplant recipient to share their experiences.

*Transition program*

As part of a transition afternoon organized jointly with University Children's Hospital Zurich, six young transplant recipients moved into adult medical services in September. In addition, a young adult with Stage 4 chronic kidney disease also moved into adult medical services. All received a status review and took part in an advice session (with a parent if they wished). Depending on their needs, they will continue to be supported by the Advanced Practice Nurse.

*"ANP health behavior education program" study*

The intervention section and study-specific data collection for the study on "Impact of an advanced nursing practice education program for patients in the first year after a kidney transplant on weight gain, physical activity and intake of medication" was completed. This quantitative study was also expanded by a qualitative evaluation of interventions from the patients' perspective. In 2017, a total of 8 participants joined the study. The intention is to recruit a total of 10-15 people for this sub-study.

*Presentation in the hospital*

Zala, P. (April 5, 2017): Handling chronic kidney disease: experiences of those affected with consultations with an APN – a qualitative research project as part of a Master's thesis at the Institute for Nursing Science at the University of Basel. Oral presentation at the EBP Forum, Insel Gruppe, Bern.

*Patient information event*

Beckmann, S., and Zala, P. (2017, March 9): Transplant nursing consultation hours at the University Hospital Zurich Oral presentation as part of the symposium for patients before and after a transplant at the Transplantation Center at the University Hospital Zurich.

*Conference presentations*

Zala, P. (June 9, 2017). Handling chronic kidney disease: experiences of those affected with a new type of consultation with an APN – a qualitative research project as part of a Master's thesis at the Institute for Nursing Science at the University of Basel. Oral presentation at careArt Basel 2017, Basel. First place won the B. Braun Prize.

Rissi, O., and Zala, P. (September 6, 2017): Because we care – information and support along the kidney transplant process. Oral presentation at the 14th Congress of the International Society of Organ Donation and Procurement (ISODP) in Geneva.

Zala, P. (September 7, 2017): Handling chronic kidney disease: experiences of those affected with a new type of consultation with an APN – a qualitative research project as part of a Master's thesis at the Institute for Nursing Science at the University of Basel. Oral presentation at the 4th International APN & ANP Congress of the (DNAPN) in Freiburg i.B., Germany. Winner of the "Phenomenon" Innovation Award.

*Publication*

Zala, P., Rütti, G., Arampatzis, S., and Spichiger, E. (2017). Experiences of patients with chronic kidney disease and their family members in an advanced practice nurse-led counseling service. Nephrology Nursing Journal, 44(6), 521–530.

**4.2.4 Liver transplantation nursing consultations**

The liver transplant nursing consultations offer patients and family members advisory services before and after transplantation. The consultations are delivered by a specialist APN in inpatient and outpatient settings. The objective is to offer the best possible support for patients and family members in preparing for life with a new organ and to strengthen self-reliance in relation to the disease. The content and approach of the consultations are adapted to the individual requirements of those affected. Prior to the transplant, the main topics are: symptom management, waiting list procedure, health (e.g. quitting smoking, maintaining nutrition levels and getting exercise), emotional handling of the situation. After the transplant: drug intake, prevention of infection, self-monitoring, rejection reactions, sun protection, health.

*Information brochures*

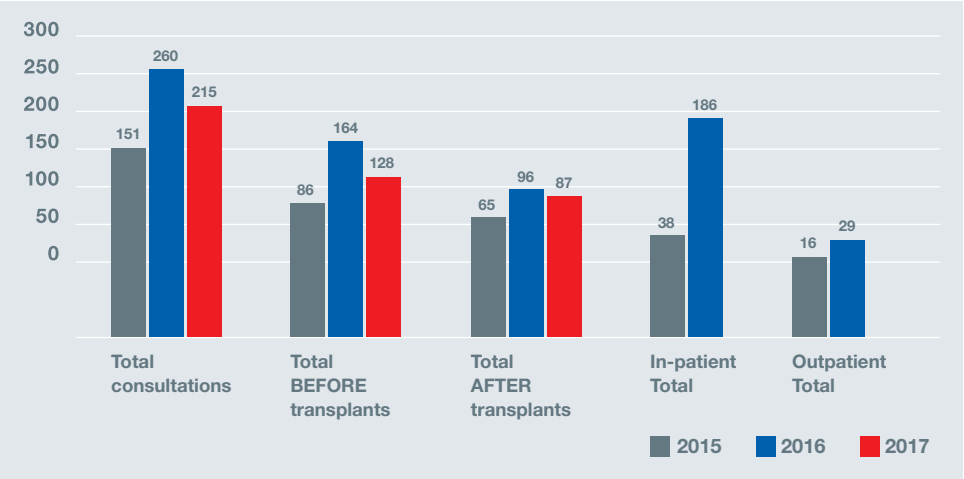
In addition to the consultations, patients and family members receive the following brochures: "Preparing for a liver transplant" and "Life after a liver transplant". The brochures also form the basis for the structured inpatient training. Since 2017, the new brochure, "Living liver donors – what donors and recipients need to know" has also been handed out.

*Cooperation*

Friendly, inter-professional cooperation within the UHZ and beyond was further expanded in 2017.

- In the UHZ: consultations and structured inpatient education during hospital stays after transplantation are planned and delivered in conjunction with the ward nursing teams.
  An accompanying event on liver transplant and education provided further training for the nursing team. The cycle of the inter-professional case conference was increased in May 2017 from biweekly to weekly. The team, comprising the nursing team, APN, medical staff, psychiatrists, nutritional advice team, physiotherapy and social services, can therefore react quicker to the needs of the patient and the treatment team.
- Children's Hospital Zurich: 2017 saw the first collaborations between UHZ and the nursing and clinical staff at the Children's Hospital. The objective was to plan the transition for and contact with a young woman who received a combined kidney and liver transplant as a small child.
- Davos-Clavadel Zurich rehabilitation clinic: collaboration with the nursing and medical team relating to structured education following a transplant was established. There is regular communication about patients being treated by both clinics. To refresh the content and introduce new staff members, another training day is planned for colleagues at the Davos-Clavadel rehabilitation clinic in 2018.

**Liver transplant nursing consultations**




– St. Gallen Cantonal Hospital (KSSG): patients who primarily receive pre- and post-transplant medical care at St. Gallen Cantonal Hospital also attend consultations with specialist APN hepatology nurses. Close collaboration enables a seamless transition between the institutions. Open questions from previous consultations can be handed over to the expert APN of the hospital in question. The evaluation of the inter-hospital APN project was presented at national and international congresses.

*Accompanying research on liver transplant nursing consultations*

Between August 2014 and May 2017, a total of 40 patients were looked after across the hospitals. A descriptive analysis of the 167 consultations (KSSG n=115, UHZ n=52) showed that the content and structure of the consultations varied mainly because of the current medical situation. These results highlight the need for inter-hospital cooperation to ensure a timely consultation on the issues relevant to the patients.

*Presentations in 2017*

Künzler-Heule, P., Semela, D., Müllhaupt, B., and Beckmann, S. Nurse-led self-management support across two hospitals in liver transplantation: a win-win situation for patients and health care professionals. Poster presentation, International Liver Congress (ILC-EASL), Amsterdam, Netherlands, April 12-23, 2017.

Künzler, P., Semela, D., Müllhaupt, B., and Beckmann, S. Nurse-led self-management support in liver transplantation across two hospitals. Oral presentation, Annual Meeting of the Swiss Society of Gastroenterology, Swiss Society of Visceral Surgery and Swiss Association of the Study of the Liver. Lausanne, September 14/15, 2017.

Beckmann, S., and Zala, P. Transplant nursing consultation hours at the University Hospital Zurich. Oral presentation, Transplantation Center Symposium, Zurich, Switzerland, March 9, 2017.

*Peer-reviewed publication*

Beckmann, S., Künzler-Heule, P., Odermatt, R., Biotti, B., and Staudacher, D. I live from day to day. Clinical Update, SBK.

**Consultation topics BEFORE liver transplants**
(n=357, multiple responses possible)

| | UHZ | KSSG |
|---|---|---|
| Understands illness and symptoms | 15 | 60 |
| Symptom management | 25 | 22 |
| Medication | 18 | 14 |
| Health-related behavior | 10 | 33 |
| Organization | 18 | 18 |
| Emotional Topics | 21 | 105 |

**Consultation topics AFTER liver transplants**
(n=279, multiple responses possible)

| | UHZ | KSSG |
|---|---|---|
| Understands illness and symptoms | 1 | 34 |
| Symptom management | 58 | 21 |
| Medication | 36 | 22 |
| Health-related behavior | 65 | 14 |
| Organization | 11 | 2 |
| Emotional Topics | 6 | 9 |

### 4.3 Infectious disease control for transplant patients

*Prof. Nicolas Müller, Infectious disease*

Our service recorded 1,356 infectious disease consultations including follow-up consultations for patients in connection with transplants in 2017. This corresponds to approximately one-fifth of all infectious disease consultations held at UHZ. It underlines the importance of infectious disease treatment and prevention in recipients of new organs or stem/islet cells. In addition to this on-demand service, all new patients on the waiting list for kidney, pancreas or islet cells were routinely checked for serology and history of infections. Regular participation in weekly visits to stem cell recipients and patients who recently received a new kidney or pancreas ensures continuous care and close cooperation. The visits for liver transplant patients implemented since 2013 have become an important part of post-operative care. Optimal infectious disease management is also achieved through the regular revision of various guidelines.

### 4.4 Follow-up care among transplant patients in the Department of Dermatology

*Dr. Mirjam Nägeli*

Recipients of solid organs and bone marrow/stem cells are seen as part of specialized consultations for immunosuppressed patients at the Department of Dermatology. Led by Dr. Mirjam Nägeli, there were more than 2,922 specialized consultations in 2017, of a total of 1,812 patients. The main focus is on prophylaxis, early detection, and treatment of white skin carcinoma (spinocellular skin carcinoma), which is the most common malignant tumor resulting from long-term immunosuppression. Existing tumors are detected and removed as part of the pre-transplant assessment. At the same time, transplant patients are advised on the risk of white skin cancer and are taught prevention through appropriate behavior, clothing, application of sunscreen and early detection.

*Information brochures*

In addition to advice, new patients received the brochure titled “Suppressed immune defenses in the skin”.

*Studies*

As part of a multi-center European study, we are monitoring how many of our patients are affected by skin cancer metastases and which factors present a greater risk. We thereby hope to identify patients with the greatest need at an early stage and tackle this in a targeted manner.

*Collaboration in international committees*

In addition, we are working closely with transplant dermatologists through Skin Care in Organ Transplant Patients Europe (SCOPE) and the International Transplant Skin Cancer Collaborative (ITSCC) in the USA.

### 4.5 Psychosocial care for transplant patients

*Prof. Josef Jenewein, Psychiatry*

#### 4.5.1 General review

Psychiatric and psychological care of transplant patients, donors, and family members at UHZ is carried out by the advisory and liaison psychiatric services of the Department of Psychiatry and Psychotherapy (headed by Prof. Josef Jenewein).

The number of psychiatric/psychological evaluations and treatments of patients and donors was similar to the previous year, with more than 1,600 consultations. A clear increase in evaluations and treatments was again recorded in conjunction with liver transplantation.

#### 4.5.2 Team organization

The team continues to comprise three senior physicians with a specialist degree in psychiatry and psychotherapy (total FTE 1.8) and one specialist psychologist for psychotherapy (FTE 0.6).

#### 4.5.3 Research

The project submitted to and approved by the Swiss Transplant Cohort Study (STCS) in 2016, aiming to study the quality of life (QOL), mental stress and potential predictors for QOL in patients three years after a lung transplant, was successfully completed and the data is scheduled to be published by the end of June 2018.

# 5. Individual transplant programs

### 5.1 Allogenic stem cell transplantation

*Dr. Urs Schanz, Department of Hematology*

There were 55 allogenic transplants, maintaining the levels of previous years (2016 n=56, 2015 n=58). The main indication for allogenic stem cell transplantation was myeloid neoplasms at 64% (acute myeloid leukemia n=25, myelodysplastic syndrome and myeloproliferative neoplasms n=10). The cumulate transplant-related one-year mortality rate remained gratifyingly low at 5.5%.

Compared to the previous year, the number of transplants with unrelated (n=28, 2016 n=26) and related (n=27, 2016 n=30) donors remained almost unchanged, with the latter group of donors including 21 HLA-identical siblings and 6 donors who were haploidentical children, parents or siblings. In this context, haploidentical means that there is only a 50% haplotype match with the HLA type instead of the usual 100% match of both haplotypes. In the last few years, a new transplant procedure with post-transplant chemotherapy has resulted in this alternative source of donors becoming increasingly common. This new transplant method is now fully established in our hospital and is used routinely. The proportion of reduced intensity conditioning has remained stable compared to the previous year (2017: 73%, 2016: 70%).

There was a significant increase in evaluations and supplying transplants from healthy, voluntary donors for other centers in Switzerland and around the world. In 2017, we supplied 36 of these unrelated donor transplants. By comparison, in 2012 we performed 10 apheresis processes in this context and 24 in 2015. This increase reflects the increasing size of the Swiss register for voluntary blood and bone marrow donors.

### 5.2 Autologous stem cell transplantation

*Dr. Antonia Müller, Department of Hematology*

The well-established and successful collaboration with Triemli Hospital in the field of autologous stem cell transplantation continued in 2017. Here, too, figures (n=93) remained stable in relation to 2016 (n=94).
The main indication continues to be plasma cell myeloma (n=62), followed by malignant lymphoma (n=18). In addition, patients with acute myeloid leukemia and germ cell tumors underwent normal transplants.

As in the previous year, in collaboration with Professor Roland Martin (Department of Neurology) and his group, another patient with multiple sclerosis successfully underwent a high-dose course of chemotherapy with autologous stem cell re-transfusion to re-set the damaged immune system. Currently, this promising treatment can only be offered outside of prospective studies (of which there are none open at the moment) to self-funded patients. Together with our colleagues from Neurology, however, we continue to work intensively on setting up a structured, systematic treatment protocol and a registry study and hope that this will satisfy the requirements of the ELGK (Federal Commission for Medical Benefits and Principles) so that this therapy can become a standard treatment in the near future in Switzerland. As part of these efforts, we have also established a Neuroimmunology and Hematology Committee that meets on a monthly basis to discuss joint patients and details of the scheduled protocol.

In 2017, there were also substantial changes in the management of the autologous program and the clinical stem cell laboratory, which have been assigned to the Department of Hematology since 2017 (previously assigned to the Department of Oncology). From March 2017, the clinical management was taken over by Dr. A. Müller. In addition, the stem cell laboratory has now been fully integrated into the Immunohematology section in the Department of Hematology, which has significantly increased the number of trained biomedical assistants and thus much greater flexibility for the cryo-preservation and re-transfusion of cell products.

### 5.3 Heart transplantation

*Prof. Markus Wilhelm, Heart Surgery and*
*Prof. Frank Ruschitzka, Cardiology*

2017 was a record year, with 17 heart transplants. This is the highest number since 1994, when 31 heart transplants were performed. Compared internationally, the post-surgery heart transplant survival rate is above average. More than half (9 patients, 53%) of the 17 patients who received a heart transplant in 2017 had previously had a heart support system until their heart transplant, five of whom had a left ventricular assist device (LVAD), three had a bi-ventricular assist device (BVAD) and one patient had extra-corporeal circulatory support (ECLS). One of the 17 heart transplants was performed on a 14-month-old child, who had an LVAD prior to the heart transplant.

The number of heart support systems implanted in 2017 fell compared to previous years, potentially due to the high number of heart transplants (Fig. 6). Six patients received a left-ventricular support system (Fig. 2) and three patients were given a bi-ventricular heart support system (Fig. 3). Four of these patients, or almost half (44%), were changed from extracorporeal life support (ECLS) to a heart support system due to being high-risk cases.

The number of implantations from ECMO and ECLS, which is used for refractory acute respiratory or cardiac failure, once again narrowly exceeded the record level of 119 implantations in 2016 with 122 in 2017 (Fig. 4). A total of 75% of the implantations were carried out as ECLS in cardiogenic shock, 25% in lung failure. The use of ECMO/ECLS transport in 2017 did not reach the record level of the previous year. A total of 19 patients were given ECMO/ECLS in external hospitals and subsequently transferred to ECMO/ECLS at UHZ.

Dr. Rodriguez from the Department of Cardiovascular Surgery received the Swiss Transplantation Society prize for his experimental work on the immunoregulatory mechanisms of NAD+.

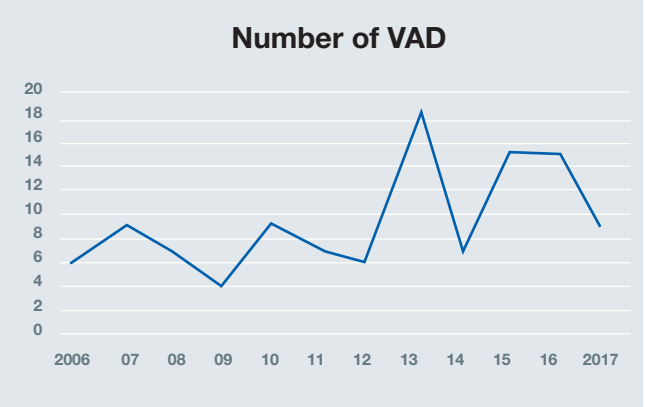



Fig. 1: Implantations of heart support systems (VAD) since 2005

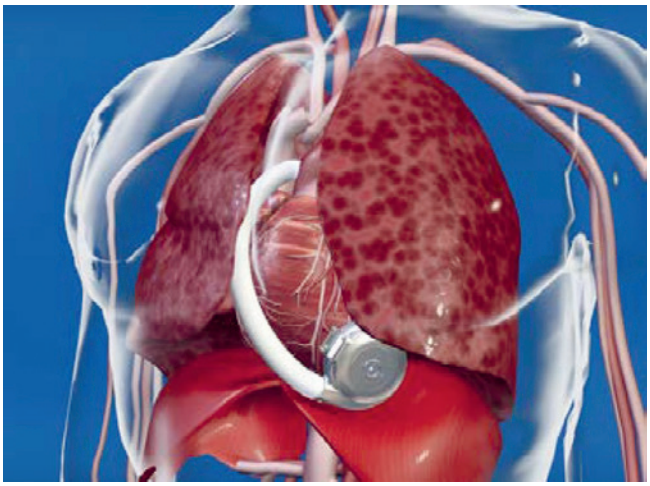


Fig. 2: Left-ventricular support system (HeartWare®)

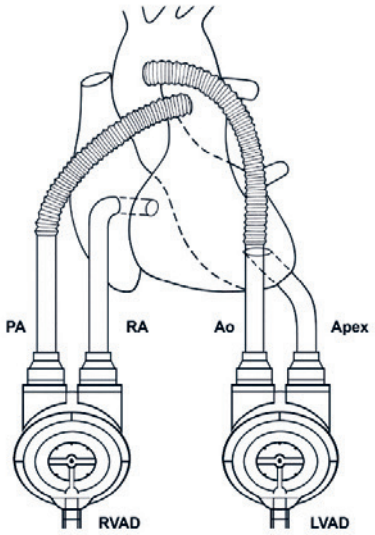



Fig. 3: Bi-ventricular heart support system (Berlin Heart EXCOR®)

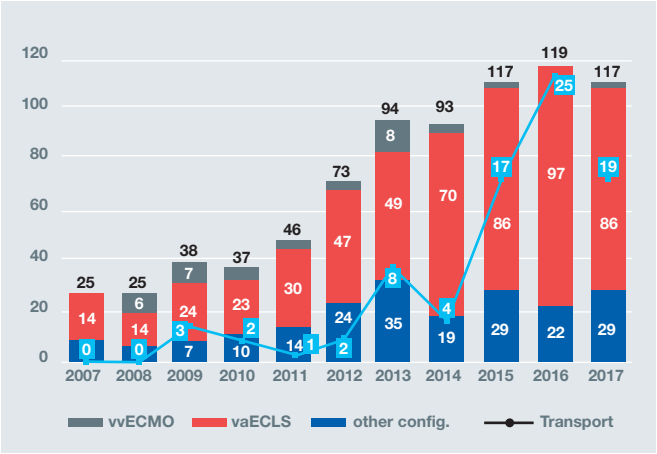



Fig. 4: Implantations of heart support systems (VAD) since 2005

## 5.4 Lung transplantation

*Dr. Sven Hillinger, Thoracic Surgery and*
*Dr. Macé Schuurmans, Pneumology*

In 2017, we performed 14 lung transplants, the majority of which under difficult conditions: firstly, the lack of donor organs is more noticeable than in previous years; secondly, the waiting list for lung transplants is much shorter than it used to be as increasingly effective medicinal treatments are available for cystic fibrosis and lung fibrosis. A total of 25 patients were evaluated, of whom 18 were accepted onto the lung transplant waiting list. Extracorporeal photophoresis has been successfully used as a treatment for allograft dysfunction in lung transplant patients for 20 years. The UHZ is a “Center of Excellence” for this treatment: visiting treatment teams who want to establish these methods have come to Zurich to find out more. The 25th anniversary of the first lung transplant in Zurich was celebrated as part of a 2017 symposium. At the fall symposium on November 17, 2017, Prof. Walter Weder gave a presentation looking back at the development of lung transplants since 1992.

Dr. Christian Murer has left the team and moved to Lucerne Cantonal Hospital; Dr. Daniele Marino has moved from there to us at UHZ. We would like to thank Dr. Murer for his dedication to lung transplant patients and also for his research work in the field of extracorporeal photophoresis. The team gave presentations at several international congresses. Team members are still actively involved in international committees and on lung transport editorial boards, including pediatric lung transplant.

As part of the TMT Seminar on May 8, 2017, we welcomed Prof. Annette Boehler, coordinator of the STCS benchmarking project at the University Hospital Basel, who gave us fascinating insights into the topic of “Benchmarking Lung Transplants”. Prof. Ilhan Inci has obtained a three-year SNF grant titled “Reconditioning of marginal donor lung in ex vivo lung perfusion system using perfluocarbon-based oxygen carrier”, which will investigate a new method of improving the function of donor lungs.

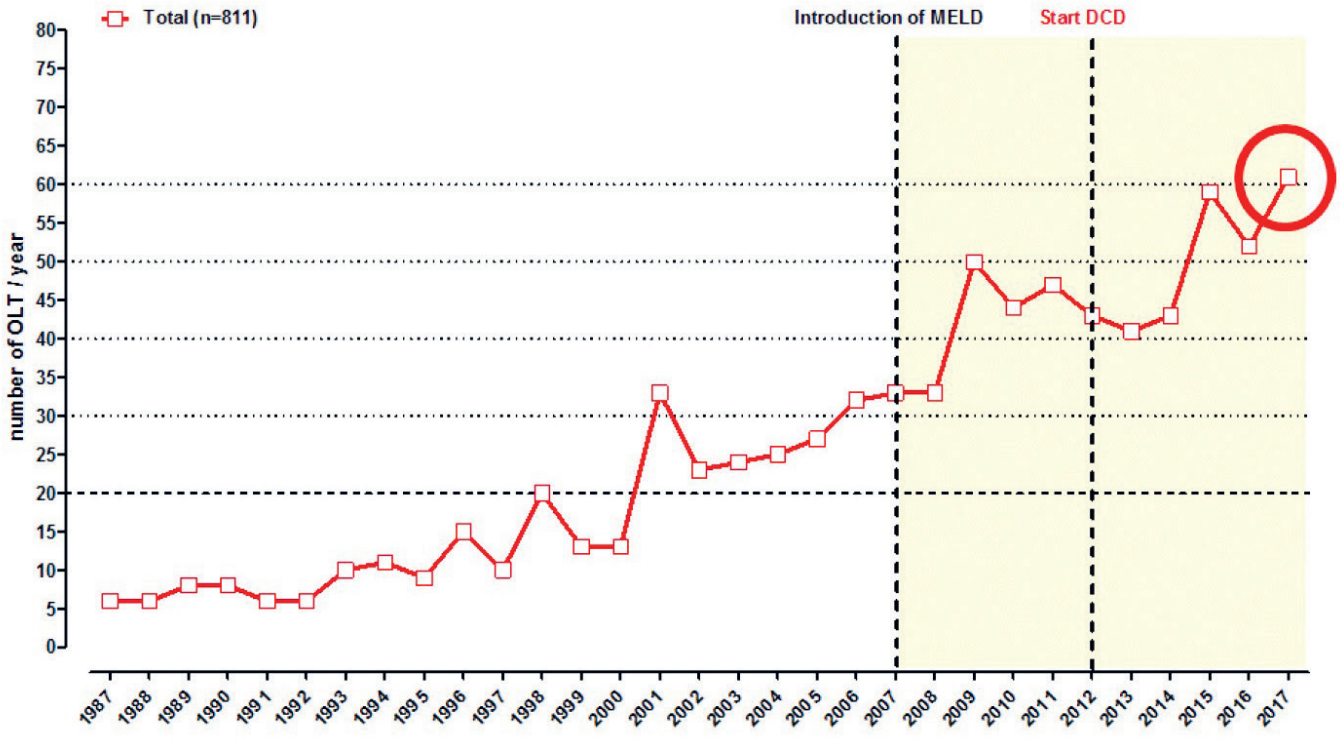



Fig. 5: UHZ liver transplants 1987–2017

Prof. Ilhan Inci also received the TPLZ's experimental scientific award with his project: Iskender, I., et al. Cytokine filtration modulates pulmonary metabolism and edema formation during ex vivo lung perfusion, which was published in May in J Heart Lung Transplant.

In June 2017, Prof. Wolfgang Jungraithmayr accepted an invitation to be Professorial Chair for Thoracic Surgery at the Brandenburg Medical School Theodor Fontane (MHB), linked with managing the Department of Thoracic Surgery.

Over the last few years at the Department of Thoracic Surgery, Prof. Jungraithmayr has established a strong experimental and translational research focus in transplantation and tumor immunology with an international reputation. He will introduce and expand this focus at MHB while maintaining a research interest at UHZ.

Lung transplants remain one of our key priorities, both in clinical and experimental research, as reflected by 14 predominantly international publications and numerous scientific lectures in 2017.

### 5.5 Liver transplantation

*Prof. Philipp Dutkowski, Visceral Surgery and Prof. Beat Müllhaupt, Gastroenterology*

In 2017, 64 liver transplants were performed in Zurich, with 143 liver transplants in Switzerland as a whole (45%). The number of liver transplants in Zurich has been steadily increasing for more than 20 years (Fig. 5).

The new record number can mainly be attributed to a huge increase in the DCD program, with 21 (33%) DCD liver transplants in Zurich in 2017. All DCD livers are routinely optimized in Zurich using an ex-vivo liver perfusion (Hypothermic Oxygenated Perfusion, HOPE).

Following the excellent results over the last six years in Zurich (70 DCD liver transplants), DCD liver transplant programs are now planned for 2018 in Bern and Geneva.

### 5.6 Kidney transplantation

*Prof. Thomas Müller, Nephrology, Dr. Olivier de Rougemont, Visceral Surgery and Transplant Surgery*

A total of 104 kidneys were transplanted at University Hospital Zurich in 2017, more than ever before. The number of donors was slightly higher compared to last year, and with considerable effort and fantastic cooperation with the assigning nephrologists, we have almost doubled the kidney waiting list over the last three years, from just under 200 patients to almost 400. This results in lots more kidneys being allocated to our patients.

In total, 23 living kidney transplants were performed. This number has remained stable over the last few years.

For patients on the waiting list, we held two information evenings at UHZ and one in Ticino last year. The events were each attended by around 100 participants and proved to be an effective platform for sharing experiences. Information evenings for patients are also organized for 2018.

The results of the transplant program were presented both nationally (SGN, STS) and internationally (ESOT, ISODP).

## 5.7 Pancreas transplantation

*Dr. Olivier de Rougemont, Department of Visceral Surgery and Transplant Surgery*

Similar to last year, a total of four combined pancreas/kidney transplantations were performed in 2017. These figures also reflect the general international trend.

With aging donors showing signs of co-morbidity, increasingly fewer pancreases are allocated. We have also noticed that potential recipients – patients with chronic kidney disease and insulin-dependent Type I diabetes – are older when they join the waiting list and would often no longer benefit from a combined organ transplant, so we recommend a combined kidney and islet cell transplant or a living kidney donation.

Despite all of this, surgical standards have remained high.

## 5.8 Islet cell transplantation

*Prof. Roger Lehmann, Endocrinology and Diabetology*

### 5.8.1 Islet cell transplantation 2017

Five islet cell transplants were performed in 2017. For the first time, UHZ carried out an islet cell transplant from a donor with chronic active hepatitis B (for a recipient who also has chronic active hepatitis B).

Of the 5 transplants performed, 3 were combined kidney and islet cell transplants (one of which for a patient who had undergone a combined kidney and pancreas transplant 20 years ago with subsequent loss of function). Two transplants were for a patient who had previously undergone a kidney transplant (islet after kidney).

### 5.8.2 New regulations about pancreas allocation

The allocation rules for pancreas and islet cell transplants have been revised by the Swiss Federal Office of Public Health and came into effect in November 2017. The new regulations have standardized the organ allocation for patients on the waiting list for a beta cell replacement and are a significant improvement on the previous situation.

### 5.8.3 Diabetes care

Interdisciplinary collaboration between the three departments of Visceral Surgery and Transplant Surgery, Nephrology and Endocrinology at the Transplantation Center focusing on care of islet or pancreas and kidney transplants works extremely well. Patients are discussed and evaluated jointly before being listed for transplantation. In 2016, St. Gallen Cantonal Hospital was also integrated into the treatment concept, and follow-up examinations were carried out jointly. The latest technology is also used in the treatment, with continuous blood sugar measurements and a sensor-equipped pump that enables the hypoglycemia rate to be further reduced due to the insulin pump's predictive hypo-stoppage coupled with a glucose sensor (Minimed 640G).

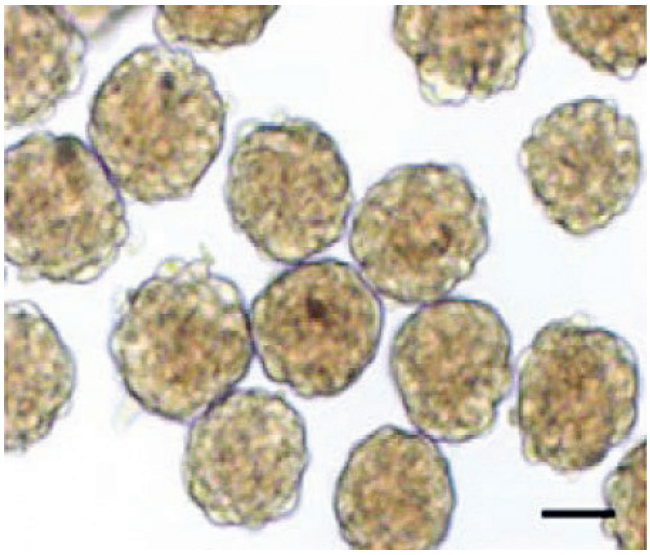
### 5.8.4 Priorities of the islet cell transplant program over the next few years

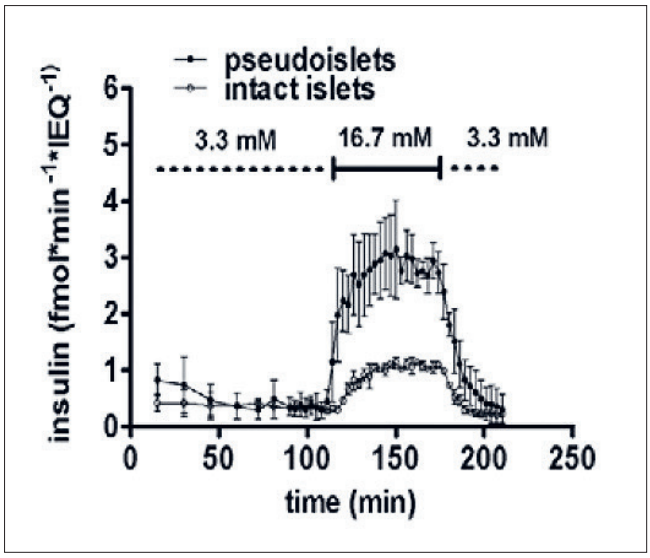
*a) Autotransplantation of islets*

Information events about how to maintain the body's own insulin production after a pancreatectomy by auto-transplanting islets (e.g. in cases of chronic pancreatitis) will take place at various hospitals, so that we can expect to see this type of transplant more often in the future.

*B) Pseudo-islets*

The project to optimize the production of pseudoislets has had a successful start. In collaboration with Kugelmeiers (manufacturers of the "Spherical plate 5D" patented by us), the function of pseudoislets (artificially separated and re-combined islets) will be investigated (i.e. their oxygen consumption and mitochondrial function). In addition, a clinical study is planned that seeks to improve transplant results by using pseudo-islets.






List of Figures: Dissociating and re-aggregating manufactured pseudoislets (left) results in better insulin secretion than with intact islets.

## 5.9 Reconstructive transplantation

*Prof. Jan Plock*

Based on international outcome data with a long-term course of more than 18 years after the first successful hand transplant and 10 years after the first face transplant, there is sufficient evidence to justify bilateral hand/arm transplantation and face transplantation from an ethical and medical point of view. However, these are reconstructive transplants where there is a long-term risk of chronic rejection with loss of the graft. All the more reason to pursue greater stability with minimal immune suppression.

Internationally collaborative experimental studies were continued that particularly focused on cell-based immune modulation. We were the first group in the world to demonstrate an effect of mesenchymal stromal cells on the development of chronic rejection in allograft tissues.

In collaboration with Prof. Tanja Krones (Clinical ethics UHZ), Prof. Vijay Gorantla (Wake Forrest University) and Prof. Gerard Magill (University of Pittsburgh), we organized the “1st International Workshop on Bioethical Challenges in Reconstructive Transplantation” in the Brocher Foundation at Lake Geneva between May 9–12, with participants from America and Europe.

# 6. Appendix

## 6.1 Staffing structure of the Transplantation Center 2017

| Area | Directorate | Board of Trustees |
|---|---|---|
| **Management** | **Head**<br>Prof. Nicolas Müller | **Chairman**<br>Prof. Pierre-Alain Clavien |
| **Heart** | Prof. Frank Ruschitzka<br>Dr. Andreas Flammer | Dr. Christian Benden<br>Prof. Walter Weder |
| **Lungs** | Dr. Macé Schuurmans<br>Dr. Sven Hillinger | Dr. Christian Benden<br>Prof. Walter Weder |
| **Liver** | Prof. Philipp Dutkowski<br>vacant | Prof. Beat Müllhaupt<br>Prof. Pierre-Alain Clavien |
| **Kidney** | Prof. Thomas Müller<br>Dr. Olivier de Rougemont | Prof. Rudolf Wüthrich<br>Prof. Pierre-Alain Clavien |
| **Pancreas and islet cells** | Prof. Roger Lehmann<br>Dr. Olivier de Rougemont | Prof. Felix Beuschlein<br>Prof. Pierre-Alain Clavien |
| **Small bowel and multi-visceral transplantation** | vacant | Prof. Pierre-Alain Clavien |
| **Stem cells** | Dr. Urs Schanz<br>Dr. Antonia Müller | Prof. Markus Manz |
| **Reconstructive transplants** | Prof. Jan Plock | |
| **Palliative care** | Prof. Nicolas Müller, Infectiology<br>Dr. Mirjam Nägeli, Dermatology<br>Prof. Josef Jenewein, Psychiatry | Dr. Urs Schwarz |
| **Anesthesiology** | Prof. Marco Zalunardo | Prof. Donat Spahn |
| **Immunology / HLA Typing Laboratory** | Dr. Jakob Nilsson | Prof. Onur Boyman |
| **Care** | Béatrice Biotti | Prof. Rebecca Spirig |
| **Intensive care** | Dr. Peter Steiger | Prof. Reto Schüpbach |
| **Transplant coordination** | Werner Naumer | |
| **Research** | Prof. Rolf Graf | |
| **Data and quality management** | Uschi Schäfer | |
| **Clinic manager** | Marion Derhaschnig<br>Karl-Heinz Heidenreich | |
| **Dean** | | Prof. Rainer Weber |

## International Advisory Board

| | |
|---|---|
| **Heart** | Prof. Mandeep R. Mehra, USA |
| **Lungs** | Prof. John Dark, UK |
| **Liver** | Prof. Xavier Rogiers, Belgium |
| **Kidney** | Prof. Christophe Legendre, France |
| **Pancreas and islet cells** | Prof. Eeelco de Koning, Netherlands |
| **Stem cells** | Prof. Ernst Holler, Germany |
| **Anesthesiology and intensive care** | Prof. Michael Hiesmayr, Austria |

## Local Advisory Board of the Transplantation Center

| | | |
|---|---|---|
| **Bellinzona** | Ospedale San Giovanni | Prof. Claudio Marone |
| **Chur** | Cantonal /Regional Hospital | Dr. Reto Venzin |
| **Faltigberg-Wald** | Züricher Höhenklinik Wald | Dr. Matthias Hermann |
| **Frauenfeld** | Cantonal Hospital | Dr. Markus Hugentobler |
| **Gais** | Klinik Gais AG | Dr. Angelika Bernardo |
| **Lucerne** | Cantonal Hospital | Dr. Dominique Criblez |
| **Seewis** | Rehabilitation Center | Dr. Willhard Kottmann |
| **St. Gallen** | Cantonal Hospital | Dr. David Semela |
| **Winterthur** | Cantonal Hospital | Dr. Thomas Kistler |
| **Zollikerberg** | Zollikerberg Hospital | Dr. Jörg Bleisch |
| **Zurich** | Waid City Hospital | Prof. Patrice Ambühl |

## 6.2 Transplant activities 2009–2017

| Organ | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|
| **Heart total** | 9 | 14 | 11 | 11 | 10 | 16 | 14 | 10 | 17 |
| Heart and kidney | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| **Lung total** | 26 | 26 | 30 | 33 | 28 | 32 | 31 | 23 | 14 |
| of which DCD | 0 | 0 | 0 | 2 | 5 | 5 | 5 | 3 | 2 |
| **Liver total** | 50 | 45 | 47 | 43 | 41 | 43 | 59 | 52 | 64 |
| NBHD single liver | 44 | 41 | 39 | 39 | 27 | 28 | 44 | 34 | 37 |
| of which DCD | 0 | 0 | 1 | 3 | 9 | 12 | 12 | 6 | 21 |
| Living donor liver | 4 | 2 | 7 | 4 | 2 | 2 | 2 | 7 | 5 |
| Liver and kidney | 2 | 2 | 1 | 0 | 2 | 1 | 1 | 4 | 1 |
| Liver and small intestine | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| **Kidney total** | 85 | 88 | 100 | 84 | 87 | 84 | 96 | 88 | 104 |
| NBHD single kidney | 47 | 44 | 57 | 47 | 47 | 44 | 62 | 48 | 54 |
| of which DCD | 0 | 0 | 6 | 9 | 6 | 11 | 6 | 9 | 18 |
| Living donor kidney | 29 | 30 | 32 | 22 | 22 | 22 | 23 | 22 | 23 |
| Kidney and pancreas | 7 | 9 | 9 | 10 | 11 | 5 | 3 | 4 | 4 |
| Kidney and islet cells | 0 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| Kidney and heart | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Kidney and liver | 2 | 2 | 1 | 0 | 2 | 1 | 1 | 4 | 1 |
| **Pancreas total** | 7 | 9 | 11 | 12 | 15 | 7 | 3 | 4 | 4 |
| Pancreas only | 0 | 0 | 1 | 2 | 3 | 2 | 0 | 0 | 0 |
| Pancreas and kidney | 7 | 9 | 9 | 10 | 1 | 5 | 3 | 4 | 4 |
| Pancreas/small intestine | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 |
| **Islets total** | 5 | 9 | 6 | 5 | 5 | 6 | 3 | 6 | 5 |
| Islet cells only | 5 | 6 | 5 | 4 | 4 | 5 | 2 | 4 | 2 |
| Islet cells and kidney | 0 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| **Small intestine/multi-visceral** | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| **Stem cells total** | – | 119 | 147 | 128 | 139 | 151 | 150 | 150 | 148 |
| - autologous | not in TPLZ | 65 | 95 | 77 | 92 | 98 | 92 | 94 | 93 |
| - allogenic | 34 | 54 | 52 | 51 | 47 | 53 | 58 | 56 | 55 |

| Multiple organ donations to UHZ | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|
| **Donors from UHZ** | 2 | 7 | 5 | 12 | 18 | 17 | 24 | 14 | 23 |
| - of which DCD | 0 | 0 | 3 | 6 | 9 | 12 | 12 | 4 | 17 |
| **Donors from ZH network** | 10 | 3 | 7 | 7 | 6 | 9 | 10 | 13 | 8 |
| **Total donors UHZ plus network** | 12 | 10 | 12 | 19 | 24 | 26 | 34 | 27 | 31 |

### 6.3 Outcome of organ transplantations

The results have been published nationwide for all centers since 2013. This is in accordance with the Transplantation Act and legal regulations. The report is publicly available at www.stcs.ch. The benchmarking project is an important upcoming task; the absolute figures can only be compared relatively.

### 6.4 International Advisory Board (IAB) meeting 2017

*Nicolas Müller, Director of TPLZ*

**Minutes of the International Advisory Board meeting 2017**
Friday, November 17, 2017
10:00 am – 12:00 pm
Im Turm (restaurant), Zurich

Present:
*On behalf of IAB:* Prof. J. Dark, Prof. E. de Koning, Prof. M. Hiesmayr, Prof. M.R. Mehra, Prof. Xavier Rogiers
*Excused:* Prof. E. Holler, Prof. Ch. Legendre
*On behalf of the Board of Trustees:* Dr. C. Benden, Prof. P.A. Clavien, Prof. M. Wilhelm (for Prof. F. Maisano), Prof. B. Müllhaupt, Prof. R. Wüthrich, Prof. R. Schüpbach, Prof. W. Weder
*Excused:* M. Derhaschnig, Prof. F. Maisano, Dr. U. Schwarz, Prof. R. Stupp, Prof. R. Weber

On behalf of the Board of Trustees, N. Müller welcomes the new members of the International Advisory Board.

The focus is the Liver Benchmarking Report, presented by Prof. Clavien.

The various programs are then briefly presented by the respective representatives, with comments from IAB members.

Lunch is served after the meeting.

Minutes
N. Müller

## 6.5 Scientific publications 2017

Potentially Inappropriate Liver Transplantation in the Era of the "Sickest-first" Policy – A Search for the Upper Limits.
Linecker M, Krones T, Berg T, Niemann CU, Steadman RH, Dutkowski P, Clavien PA, Busuttil RW, Truog RD, Petrowsky H. J Hepatol. 2017 Nov 10. pii: S0168-8278(17)32430-3. doi: 10.1016/j.jhep.2017.11.008. [Epub ahead of print] Review.

Hypothermic liver perfusion.
Schlegel A, Muller X, Dutkowski P. Curr Opin Organ Transplant. 2017 Dec;22(6):563-570. doi: 10.1097/MOT.0000000000000472.

Defining Benchmarks in Liver Transplantation: A Multicenter Outcome Analysis Determining Best Achievable Results. Muller X, Marcon F, Sapisochin G, Marquez M, Dondero F, Rayar M, Doyle MMB, Callans L, Li J, Nowak G, Allard MA, Jochmans I, Jacskon K, Beltrame MC, van Reeven M, Iesari S, Cucchetti A, Sharma H, Staiger RD, Raptis DA, Petrowsky H, de Oliveira M, Hernandez-Alejandro R, Pinna AD, Lerut J, Polak WG, de Santibañes E, de Santibañes M, Cameron AM, Pirenne J, Cherqui D, Adam RA, Ericzon BG, Nashan B, Olthoff K, Shaked A, Chapman WC, Boudjema K, Soubrane O, Paugam-Burtz C, Greig PD, Grant DR, Carvalheiro A, Muiesan P, Dutkowski P, Puhan M, Clavien PA. Ann Surg. 2017 Sep 6. doi: 10.1097/SLA.0000000000002477. [Epub ahead of print]

Hypothermic oxygenated perfusion (HOPE) for fatty liver grafts in rats and humans.
Kron P, Schlegel A, Mancina L, Clavien PA, Dutkowski P. J Hepatol. 2017 Sep 21. pii: S0168-8278(17)32268-7. doi: 10.1016/j.jhep.2017.08.028. [Epub ahead of print]

Advances in hypothermic perfusion.
Clavien PA, Dutkowski P. Liver Transpl. 2017 Oct;23(S1):S52-S55. doi: 10.1002/lt.24844. No abstract available.

Hypo- and normothermic perfusion of the liver: Which way to go?
Selten J, Schlegel A, de Jonge J, Dutkowski P. Best Pract Res Clin Gastroenterol. 2017 Apr;31(2):171-179. doi: 10.1016/j.bpg.2017.04.001. Epub 2017 Apr 12. Review.

Can immunosuppression be stopped after liver transplantation?
Clavien PA, Muller X, de Oliveira ML, Dutkowski P, Sanchez-Fueyo A. Lancet Gastroenterol Hepatol. 2017 Jul;2(7):531-537. doi: 10.1016/S2468-1253(16)30208-4. Epub 2017 Mar 28. Review.

Notice of concern regarding: Hypoxia of the growing liver accelerates regeneration.
Graf R, Petrowsky H, Dutkowski P, Clavien PA. Surgery. 2017 Mar;161(3):679. doi: 10.1016/j.surg.2016.12.024. No abstract available.

Defining MoRAL After Liver Transplantation.
Clavien PA, Dutkowski P, Lillemoe KD. Ann Surg. 2017 Mar;265(3):555-556. doi: 10.1097/SLA.0000000000002008. No abstract available.

Risk Assessment in High- and Low-MELD Liver Transplantation.
Schlegel A, Linecker M, Kron P, Györi G, De Oliveira ML, Müllhaupt B, Clavien PA, Dutkowski P. Am J Transplant. 2017 Apr;17(4):1050-1063. doi: 10.1111/ajt.14065. Epub 2016 Nov 14.

Reply to "Reducing Nonanastomotic Biliary Strictures in Donation After Circulatory Death Liver Transplantation: Cold Ischemia Matters".
Dutkowski P, Schlegel A, Kron P, de Oliveira ML, Clavien PA. Ann Surg. 2017 Dec;266(6):e119-e120. doi: 10.1097/SLA.0000000000001950. No abstract available.

Abela IA, Murer C, Schuurmans MM, Schmitt JW, Muller F, Imkamp F, Mueller NJ, Benden C. A cluster of scedosporiosis in lung transplant candidates and recipients: The Zurich experience and review of the literature. Transpl Infect Dis. 2017 Oct 17. doi: 10.1111/tid.12792. [Epub ahead of print] PubMed PMID: 29044831.

Saigi-Morgui N, Quteineh L, Bochud P-Y, Crettol S, Kutalik Z, Mueller NJ, Binet I, Van Delden C, Steiger J, Mohacsi P, Dufour J-F, Soccal PM, Pascual M, Eap CB, Swiss Transplant Cohort Study. Genetic and clinic predictors of New Onset Diabetes Mellitus after Transplantation. 2017 Pharmacogenom in press

Lewandowska D, Schreiber PW, Schuurmans M, Ruehe B, Zagordi O, Bayard C, Greiner M, Geissberger F, Capaul R, Zbinden A, Böni J, Benden C, Mueller NJ, Trkola A, Huber M. Metagenomic sequencing complements routine diagnostics in identifying viral pathogens in lung transplant recipients with unknown etiology of respiratory infection. PLoS One. 2017 May 23;12(5):e0177340. doi: 10.1371/journal.pone.0177340. eCollection 2017. PubMed PMID: 28542207; PubMed Central PMCID: PMC5441588.

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## 6.6 Transplantation awards 2017

In November 2017, the Zurich Transplantation Center awards were held for the seventh time during the fall symposium. The awards were once again generously sponsored by Astellas Pharma and were presented by Prof. Markus Wilhelm, member of the Board of Directors' Awards Committee.

**Experimental scientific award:**
**Dr. Ilker Iskender**
**Cytokine filtration modulates pulmonary metabolism and edema formation during ex vivo lung perfusion**

**Clinical scientific award:**
**Dr. Marco Bonani**
**Infections in De Novo Kidney Transplant Recipients**

**Merit award:**
**Transplant Medicine Team, Consultation-Liaison Psychiatry, Department of Psychiatry and Psychotherapy**

## 6.7 Professional development program 2017

### 6.7.1 Spring Symposium “Transplant challenges – a symposium for patients before and after a transplant”


Transplantationszentrum

**Herausforderung Transplantation**

**Ein Symposium für Patienten vor und nach einer Transplantation**

Donnerstag, 9. März 2017
13.30 – 17.15 Uhr
Grosser Hörsaal Nord
UniversitätsSpital Zürich

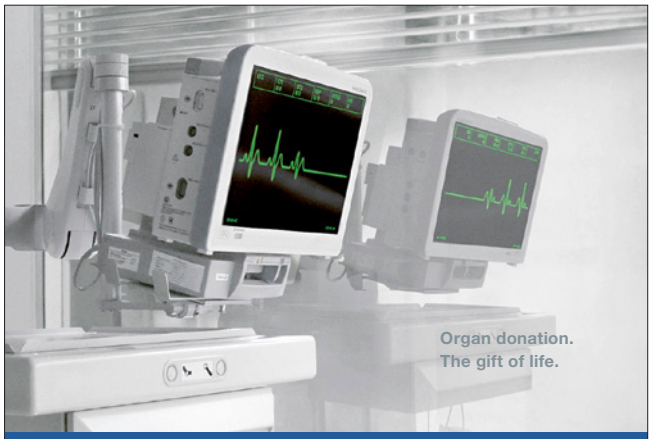
UniversitätsSpital Zürich

Wir wissen weiter.

Programm

| | |
|---|---|
| **13.30 Uhr** | **Begrüssung und Vorstellung des Transplantationszentrums**<br>Nicolas Müller |
| | **Teil I: Ich bin auf der Warteliste: Was erwartet mich?**<br>Leitung: Kerstin Hübel |
| **14.00 Uhr** | **Hilfe zur Selbsthilfe**<br>Bericht eines Organempfängers |
| **14.20 Uhr** | **Die «Pflegesprechstunden Transplantation» am USZ**<br>Sonja Beckmann und Patrizia Zala |
| **14.40 Uhr** | **Kaffee** |
| | **Teil II: Leben nach einer Transplantation**<br>Leitung: Mirjam Nägeli |
| **15.20 Uhr** | **Haut und Sonnenschutz**<br>Mirjam Nägeli |
| **15.35 Uhr** | **Infektionen vorbeugen/Reisen**<br>Nicolas Müller |
| **15.50 Uhr** | **Schwangerschaft**<br>Thomas Müller |
| **16.05 Uhr** | **Organtransplantation – Chancen und Risiken aus psychiatrisch-psychologischer Sicht**<br>Katja-Daniela Jordan |
| **16.20 Uhr** | **Diabetes**<br>Roger Lehmann |
| | **Teil III: Sie fragen, wir antworten**<br>Leitung: Nicolas Müller |
| **16.35 Uhr** | **Ein Roundtable mit allen Beteiligten** |
| **17.15 Uhr** | **Apéro** |

## 6.7.2 Fall Symposium 2017 “The current challenges of transplantation – in Zurich and abroad”




11. Jährliches Symposium des Transplantationszentrums

**«50 Jahre Herztransplantation – ein Blick in die Zukunft»**

Freitag, 17. November 2017
12.15 – 17.00 Uhr
Grosser Hörsaal Ost
UniversitätsSpital Zürich

UniversitätsSpital Zürich

Wir wissen weiter.

### Programm

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|---|---|
| **12.15 Uhr** | **Stehlunch (Dick & Davy)** |
| **13.15 Uhr** | **Grussworte** |
| | Rainer Weber |
| **13.20 Uhr** | **Jahresbericht** |
| | Nicolas Müller |
| | **Teil 1: Herztransplantation: Eine faszinierende Geschichte** |
| | Vorsitz: Francesco Maisano |
| **13.40 Uhr** | **Die Pionierzeit** |
| | Marko Turina, Einführung durch Francesco Maisano |
| **14.00 Uhr** | **Heute** |
| | Markus Wilhelm, Frank Ruschitzka |
| **14.20 Uhr** | **«I did it my way»** |
| | Ein Patientenbericht |
| **14.30 Uhr** | **The future** |
| | Mandeep R. Mehra |
| **15.00 Uhr** | **Coffee Break (Dick & Davy)** |
| **15.30 Uhr** | **Preise Transplantationszentrum Zürich** |
| | **Teil 2: Was bringt die Zukunft?** |
| | Vorsitz: Thomas Müller |
| **15.40 Uhr** | **Abdominale Transplantation: Wo liegen die Grenzen?** |
| | Pierre-Alain Clavien |
| **16.00 Uhr** | **Hand- und Gesichtstransplantation** |
| | Jan Plock |
| **16.20 Uhr** | **25 Jahre Lungentransplantation** |
| | Walter Weder |
| **16.40 Uhr** | **Stammzellen und das Versprechen von Toleranz** |
| | Urs Schanz |
| **17.00 Uhr** | **Schlusswort** |
| | Nicolas Müller |
| **17.05 Uhr** | **Apéro (Dick & Davy)** |

### 6.7.3 Monthly seminar: “Hot topics in transplantation” (TNT) 2017

Annual Program

# TNT – Hot Topics in Transplantation

5.15 – 6.00 pm, kleiner Hörsaal OST, HOER B5

| | |
|---|---|
| **27.02.2017** | **Antimetabolite: MMF & Pregnancy Risk: an Update**<br>Giuseppe Alvaro, MD, Safety Science Leader Global Safety, Science Established Products, F. Hoffmann-La Roche Ltd.<br>Corinne Wenger, MPHarm, Safety Science Leader Global Safety, Science Established Products, F. Hoffmann-La Roche Ltd.<br>Host: Prof. Dr. N. Müller |
| **27.03.2017** | **Betacells: Betacell replacement**<br>Prof. Dr. Roger Lehmann, Senior Attending Physician, Department of Endocrinology, Diabetology and Clinical Nutrition, UniversityHospital Zurich<br>Host: Prof. Dr. N. Müller |
| **08.05.2017** | **Benchmarking Lunge: Lungentransplantation** *(findet im grossen Hörsaal OST statt)*<br>Prof. Dr. Annette Böhler, Coordinator, STCS Benchmarking project, Universitätsspital Basel<br>Host: Prof. Dr. N. Müller |
| **29.05.2017** | **Pharmacology: Interaction challenges**<br>PD Dr. med. univ. Stefan Weiler Ph.D., Senior Physician, Clinic of Pharmacology and Toxicology, UniversityHospital Zurich<br>Host: Prof. Dr. R. Lehmann |
| **26.06.2017** | **Stammzellen: Friend or foe – effects of alloreactive T cells on blood formation and immune function**<br>Dr. med. Antonia Müller, Senior Physician, Clinic for Haematology<br>Host: PD Dr. med. U. Schanz |
| **30.10.2017** | **Immunologisches Monitoring bei Organtransplantation**<br>Dr. med. Daniel Sidler, Stv. Oberarzt/wiss. Mitarbeiter, Klinik für Nephrologie und Hypertonie, Universitätssptial Bern<br>Host: Prof. Dr. T. Müller |
| **27.11.2017** | **Hautinfektionen bei Immunsupprimierten**<br>Dr. med. Mirjam Nägeli, Dermatololgische Klinik, UniversitätsSpital Zürich<br>Host: Prof. Dr. N. Müller |

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