5. EOC Multisite Departments and Services

The multisite Departments and Services are structures that are transversal to all the EOC institutes and are an organisational model of clinical management.

The Departments are, as a rule, the functional and organisational integration of operational units that are homogeneous, similar, or complementary to and mutually dependent on one another, sharing the same goals – which could not be achieved otherwise. They are, however, clinically independent, with their separate professional responsibility.

The Departments are made up of the relevant services, divisions and units, grouped according to nosology, function and size. The organisation of the Departments also takes into account the needs for clinical governance.
5.1. EOC Department of Surgery

**Prof. Raffaele Rosso MD, FACS, FRCS**
Head of Department of Surgery

**Prof. Pietro Majno-Hurst MD**
Head of Department of Surgery (from 17th July 2017)

The EOC Department of Surgery guarantees high-quality localised surgical assistance, either planned or in emergency situations, making use of the specific specialised skills of the Department and is intended to be the best solution to harmonise and rationalise the facilities for surgery in the Canton.

Visceral and Vascular Surgery Services
Regional Hospital of Lugano

**Prof. Raffaele Rosso MD, FACS, FRCS**
Head Surgeon

**Prof. Pietro Majno-Hurst MD**
Head Surgeon (from 17th July 2017)

In 2017 the Visceral Surgery Service was active in clinical research with numerous projects. Rectal cancer and recovery after colorectal surgery are two main areas of research. The randomised double-blind trial HODOLAR that compares the efficacy of Ondansetron versus placebo for the treatment of Low Anterior Resection Syndrome (LARS) after rectal cancer surgery continued patient enrolment. A Medical Biology student from the University of Lausanne completed his Master thesis within this project, analysing the evolution of biomarkers during the two study periods. We also introduced for our patients the novel technique for transanal total mesorectal excision (TaTME) and participated in the TaTME international registry. We continued patient recruitment in the SAKK multicenter randomised study PROSPECT, that compares conventional neoadjuvant therapy with chemoradiation versus chemotherapy and selective chemoradiation before rectal cancer surgery. A retrospective study on specific peristomal morbidity was also concluded this year, and a paper is under revision.

In the field of recovery after colorectal surgery, we conducted a study on causes of delayed hospital discharge after surgery within the Enhanced Recovery After Surgery (ERAS) project, which is currently under review for publication. We are still recruiting patients in the OP-LA study, a multicentric prospective trial on functional recovery of elderly patients after resection of colorectal tumours. This year, we closed patient enrolment for our randomised trial on two surgical techniques to treat pilonidal disease, the first results were presented at the annual meeting of the European Society of Coloproctology, and a paper is under revision.

In vascular surgery, clinical research is diversified in vascular access, aortic surgery, peripheral arterial disease and carotid pathologies.

In vascular access, we still include patients in our study of computational analysis of haemodynamics in arterio-venous radio-cephalic fistulas for haemodialysis.

In aortic surgery, we initialised a retrospective analysis of our population of patients treated with straight endovascular aortic endografts for aneurysmal disease or penetrating aortic ulcers. The primary objective is to analyse the need for aortic reintervention in this population. The Vascular Center Ticino is part of the EMINENT trial, a randomised trial comparing the ELUVIA™ drug-eluting stent versus bare-metal self-expanding nitinol stents in the treatment of superficial femoral and/or proximal popliteal arteries. We are part of the European Carotid Surgery trial (ECST-2) that is an international randomised controlled trial. ECST-2 is a trial investigating the optimal treatment of patients with symptomatic or asymptomatic moderate or severe carotid stenosis at low or intermediate risk of future stroke.
Peer reviewed publications in 2017

**Ultrasound screening for abdominal aortic aneurysms.**

Rondelli F, Bugiantella W, Vedovati MC, Mariani E, Balzarotti Canger RC, Federici S, Guerra A, Boni M.
**Laparoscopic gastric bypass versus laparoscopic sleeve gastrectomy: A retrospective multicenter comparison between early and long-term post-operative outcomes.**


van den Berg JC.
**Evidence overview: anatomical criteria determining patients at high risk for carotid stenting.**

Main funding

Efficacy of ondansetron in the treatment of low anterior resection syndrome (LARS): a single-centre, randomised, double-blind, placebo-controlled crossover study**: ABREOC grant (internal competitive grant).

Two surgical techniques for the treatment of pilonidal sinus: a randomised controlled study: ABREOC grant and the Research Fund of the Department of Surgery (internal, non-competitive fund).

Computational analysis of arterio-venous fistulas for haemodialysis: ABREOC grant.

The “OP-LA” study: Functional recovery of elderly patients undergoing surgery for colorectal neoplasia: ABREOC grant.

Awards 2017

104th SGC Congress Award.
A prize of the Swiss society for vascular surgery for the best scientific communication to:
In-stent restenosis of the superficial femoral artery and popliteal artery segment: Long-term results after combined treatment with excimer laser debulking and drug-coated balloon angioplasty.
The research that is currently performed at the Service of Plastic, Reconstructive and Aesthetic Surgery EOC is two-fold, both clinical and experimental.

Firstly, we aim at evaluating the outcome of new surgical techniques such as ergonomic implants in breast reconstruction or sensitivity and specificity of non-invasive imaging tools to visualise the course and the calibre of perforating vessels within flaps to be used for breast reconstruction. The ultimate goal is to increase patient safety through decreased surgical morbidity.

Secondly, in collaborative work with the Cardiocentro Ticino, we aim at developing ideal “bioreactors” to grow stem cells in the long run originating from adipose tissue. Human adipose tissue-derived stem cells (hASCs) are very promising candidates for cell-based therapies. Efficient expansion of clinical grade hASCs can be achieved in a microcarrier-based cultivation system in the single-use stirred-tank bioreactor. The specific goal of the project is to obtain technical proof of concept for the manufacturing of the first biodegradable/implantable microcarriers for the therapeutic use of hASCs.

Peer reviewed publications in 2017


Main funding

Bilateral implant-based breast reconstruction: Form-stability or ergonomy?: no funding.

Hand-held thermography device to map perforating vessels in abdominal-flap based breast reconstruction: no funding.

Innovative GMP-grade biodegradable microcarriers to grow human adipocyte-derived stem cells (hASCs) under serum-free conditions: CTI grant no. 25275.2 PFLS-LS, Cardiocentro Ticino Foundation; Micro-Sphere SA.
The clinical research team of the Orthopaedic and Traumatology Unit focuses both on the development and evaluation of new orthopaedic technologies, as well as on the analysis of more established treatments.

The research activity ranges from the literature analysis, to understand strengths and limitations of the current treatments, to the design of new studies. Clinical trials are performed to document results of traditional procedures of all the anatomical districts and understand their potential, by identifying characteristics for better profiling of responsive patients.

Moreover, further advances in the field are developed through the application and study of innovative techniques, to improve the management of patients affected by diseases of muscle-skeletal tissues.

Peer reviewed publications in 2017


Main funding

Different scientific projects: grant by Medacta International SA (Str. Regina, 6874 Castel S. Pietro, Switzerland; non-competitive external fund, CHF 50,000; it started on 1st January 2017).

“Pilot study of a new prosthesis for transfemoral amputated patients. Clinical study protocol”: ABREOC grant (internal competitive grant; it started on 1st September 2016).

“Fracture Database”: DePuy Synthes grant (non-competitive external fund, CHF 50,000; it started on 1st January 2016).

Tutore vs mitella nella terapia riabilitativa dopo sutura in artrosopia della cuffia dei rotatori: studio monocentrico randomizzato (Brace vs. mitella in rehabilitative therapy after arthroscopic suturing of rotator cuff: randomised monocentric study). Clinical study protocol: ABREOC.

Fellowship program agreement: Johnson & Johnson AG Swiss (4528 Zuchwil), (CHF 100,000; it started on 1st January 2017).

Traumatology and Orthopaedic Surgery Unit
Regenerative Medicine Technologies Laboratory

Christian Candrian MD, PD
Chief of Laboratory

B. Eng. Matteo Moretti MSc, PhD
Chief of Laboratory

The Regenerative Medicine Technologies Lab focuses its research on the development of musculoskeletal tissue replicates, to be used as clinical grafts or as in vitro models to study physiopathological mechanisms of diseases. In particular, our tissue replicates are based on human cells, specific for the tissue to be generated and eventually co-cultured with vascular cells, embedded in three-dimensional hydrogels, allowing to mimic more closely the architecture of native tissues.

Among the different projects carried out in the Lab, some are financed by competitive grants (e.g. from ABREOC or SNF/KTI). In one of these projects, we are studying the role of mesenchymal cells as a possible therapy for osteoarthritis (OA), exploiting an in vitro microfluidic model of OA joint.

In a different project, financed by BRIDGE proof of concept grant, we are partners of AO Foundation, Davos, for the validation of a new 3D bioprinting technology aimed at the generation of in vitro models with a higher control on tissue microarchitecture.

Other projects aim at the development of larger scale (order of mm) constructs with perfusable vascularisation, based on support structures that are specially designed and built with 3D printing technologies, which can be exploited as drug screening platforms, allowing for more reliable identification and screening of potential therapeutics.
Peer reviewed publications in 2017

Arrigoni C, Gilardi M, Bersini S, Candrian C, Moretti M.
**Bioprinting and Organ-on-Chip Applications Towards Personalized Medicine for Bone Diseases.**

**Catch-and-Release of Target Cells Using Aptamer-Conjugated Electroactive Zwitterionic Oligopeptide SAM.**

**Advanced glycation end-products: Mechanics of aged collagen from molecule to tissue.**

Ugolini GS, Visone R, Redaelli A, Moretti M, Rasponi M.
**Generating Multicompartmental 3D Biological Constructs Interfaced through Sequential Injections in Microfluidic Devices.**

Main funding

Regenerative Medicine Technologies Laboratory: EOC grant (non-competitive internal fund, CHF 680,000; it started on 1st March 2016);
Cardiocentro Ticino grant (non-competitive internal fund, CHF 320,000; it started on 1st March 2016).

Studio dell’effetto immunomodulatorio e condroprotettivo di cellule staminali mesenchimali mediante un modello microfluidico di articolazione artrosica (Study of the immunomodulatory and chondroprotective effect of mesenchymal stem cells using a microfluidic model of arthrosic joint): ABREOC grant (internal competitive grant; it started on 1st September 2016).

Fellowship for Regenerative Medicine: Fondazione Fidinam, Lugano (CHF 450,000; it started on 1st January 2017).
In 2017, the EOC Thoracic Surgery Service focused on advances in surgical treatment of lung cancer and physiology and disease of pleural space. As a result of several collaborations and thanks to the efforts implemented within the respective competences, we made important progress in these areas. Moreover, many scientific projects are still ongoing including studies on the use of lung ultrasound in thoracic surgery and a prospective, randomised trial on malignant pleural effusion treatment.

Peer reviewed publications in 2017


With the demographic changes in Western society towards a higher percentage of elderly people, the need for interdisciplinary approach in Trauma Surgery to treat more efficiently this group of the population became an urgent issue.

In collaboration with Universitätsspital Zürich, University of Applied Sciences and Arts of Southern Switzerland (SUPSI) Lugano, RWTH Aachen University and the Fachhochschule for Biomechanics Jülich in Germany, as well as the Internal Medicine Department of the Regional Hospital of Bellinzona and Valli and geriatric specialists, our focus of research includes biomechanical studies as well as Finite Element Method for new approaches of fracture prevention of osteoporotic bones, especially proximal femur and vertebrae. A second focus is interdisciplinary clinical research to perform better pathways and algorithms of pre- and post-operative treatment for octogenarians and to analyse the economic impact in healthcare.
The Hand Trauma Commission of FESSH HTC intends to set up a database containing all major Trauma Centres in Europe. Based on the data submitted by the centres, the Hand Trauma Commission proposes centres to the national representatives for accreditation. After validating the data by the national representatives, accredited centres can receive a Diploma of Accreditation.

The EOC Hand Surgery Unit was accredited for the years 2014-2017 (contact person: C. Fusetti MD, Regional Hospital of Bellinzona and Valli).

The EOC Hand Surgery Unit, together with the hospital and health service partners, provides diagnosis, treatment and rehabilitation services for upper limb diseases and injuries.

In collaboration with RWTH Aachen University, in 2017 we started anatomical research of the upper extremity. Several cadaveric studies are in progress.

**Peer reviewed publications in 2017**


General Surgery Service
Regional Hospital of Mendrisio

Fasolini Fabrizio MD
Head Surgeon

The Surgery Service of the Regional Hospital of Mendrisio is primarily concerned with ensuring localised surgical assistance either planned or in emergency situations, covering 90% of regional needs. While some pathologies in the field of highly specialised medicine are referred to other centres, in recent years Mendrisio Surgery has fostered, with particular interest, some specialised topics such as endocrine neck surgery and interdisciplinary treatment of pelvic floor pathologies. Incontinence, evacuatory dysfunctions, prophylaxis, specialised proctology, mini-invasive therapy of anal fistulae and sacrococcygeal pilonidal diseases were the areas of the utmost interest and research. In this context, collaborations grew at a national level (Prof. Triponez and PD Dr Roche, University of Geneva) and at an international level (Dr Meinero, Rome, Milan and Genoa).

In the field of complex wound care and for the use of the latest generations of negative pressure devices, a close collaboration was established with the Italian Academy for Wound Care (IAWC) headed by Prof. Ligresti of the University of Asti.

In 2017, an International Pelvic Floor Disease Conference (Dr Regusci and Dr Braga) and an International Conference on Mini-Invasive Treatment of Complex Anal Fistula and Pylon Diseases were held at the Regional Hospital of Mendrisio. The Surgery Service produced various scientific communications and presented posters at national and international conferences (Bern, Nantes, Paris, Berlin, Frankfurt and Milan).

The Surgery Service continues to pursue scientific interest by participating in the international Eurocrine Registry, the international study on recurrent nerve anatomy and regional and international studies on the treatment of anal fistulae and complex wounds. In addition, it will develop in-depth knowledge in the study of the pathology of the abdominal wall and scheduled regional trainings with international Master-classes on the topic of herniae and wound healing.

Peer reviewed publications in 2017

Cestaro G, De Monti M, Alkayyali S, Fasolini F, Salmoiraghi F.
Umbilical metastasis mimicking symptomatic hernia: Report of a case of Sister Mary Joseph Syndrome.
5.2. EOC Department of Internal Medicine

Prof. Luca Gabutti MD
Head of the Department of Internal Medicine

The EOC Department of Internal Medicine is a functional type of organisational structure, and is managed and coordinated by the Department Board. The rules adopted for its operation are based on the fundamental principles of shared clinical governance (accountability, participation, transparency and management), and is organised using a multisite approach, offering a gateway to general Internal Medicine Services. Moreover, it can advise and direct patients to the appropriate reference centres.

The EOC Department of Internal Medicine was set up to ensure high-quality localised internal medicine assistance, either planned or in emergency situations, making full use of its specific specialised skills, as the best way to harmonise and rationalise the facilities for this sector in the Canton.

Cardiology Service
Regional Hospital of Lugano

Giorgio Moschovitis MD
Head Service

In collaboration with the Cardiology Department of the University Hospital of Basel and with the Cardiovascular Research Institute of Basel (CRIB), and with the support of the Clinical Trial Unit EOC: Swiss Cohort Atrial Fibrillation study “Swiss AF” (Lead investigator: D. Conen of the University Hospital of Basel. Main Coordinator and responsible for Southern Switzerland: A. Gallino).

In collaboration with the Cardiology Department of the University Hospital of Basel: Evidence-Based Treatment in Heart Failure (EVITA-HF), Analysis of Iron Deficiency in Heart Failure (RAID-HF) (Lead investigator in Switzerland: O. Pfister of the University Hospital of Basel).

In collaboration with the Cardiovascular Research Center of Cardiocentro Ticino: Clinical Trial Protocol CRLX030A3301: a multicenter, prospective, randomised, open-label study to assess the effect of serelaxin versus standard of care in acute heart failure (AHF) patients (RELAX-AHF-EU) (Lead investigator in Switzerland: Ph. Meyer of the University Hospital of Geneva. Local principal investigator: T. Moccetti of the Cardiocentro Ticino of Lugano. Local primary co-investigator: G. Moschovitis of the Regional Hospital of Lugano). Sponsor and Clinical Phase: Novartis Switzerland, Phase IIIb.


Design of the Swiss Atrial Fibrillation Cohort Study (Swiss-AF): structural brain damage and cognitive decline among patients with atrial fibrillation.


Uptake of non-vitamin K antagonist oral anticoagulants in patients with atrial fibrillation - a prospective cohort study.

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Swiss National Science Foundation (SNSF);
Novartis Switzerland.
The Infectious Diseases Service of Lugano is part of the coordinated network of Infectious Diseases Services at the EOC Regional Hospitals. It provides medical consulting activities to hospitalised patients and specialised care in the outpatient clinic (www.eoc.ch). The SMI works in close collaboration with all the Hospital Services and with local GPs.

The Infectious Diseases Service of Lugano is one of the seven reference centres for the Swiss HIV Cohort Study (SHCS), one of the world’s most extensive epidemiological and clinical studies in the HIV field with over 20,000 participants. The intense scientific activity is reflected in the large number of publications available on the website www.shcs.ch.

The Infectious Diseases Service is currently involved in 3 major studies:

- COMPterized Antibiotic Stewardship Study (COMPASS): this multicenter, cluster-randomised trial aims at improving the antibiotic use in hospitals by means of a pragmatic, multifaceted, computerised intervention. The participating centres are the University Hospital of Geneva, the Regional Hospital of Lugano, and the Regional Hospital of Bellinzona. The study is supported by a grant from the Swiss National Science Foundation (SNSF) in the framework of the National Research Programme (NRP) 72

- BEIJERINCK: this large double-blind, randomised, placebo-controlled, multicenter study aims at evaluating the safety, tolerability, and efficacy on LDL-C of evolocumab in subjects with HIV and with hyperlipidemia and/or mixed dyslipidemia. The study, sponsored by Amgen, is enrolling worldwide and Lugano is one of the top recruiting centres in Europe

- SIMPL’HIV: this is a pragmatic multicenter study in the framework of the SHCS evaluating a simplification strategy for the treatment of HIV infection. The patients are randomised to switch to dolutegravir (DTG) plus emtricitabine (FTC) bitherapy or continuation of the conventional antiretroviral therapy and to patient-centred monitoring or continuation of standard monitoring. The randomised comparisons will examine whether DTG/FTC maintenance is non-inferior in terms of viral suppression compared to standard therapy and whether patient-centred monitoring is cost-saving and acceptable compared to standard monitoring.

Peer reviewed publications in 2017


**Assessing the danger of self-sustained HIV epidemics in heterosexuals by population based phylogenetic cluster analysis.**


**Adverse events of raltegravir and dolutegravir.**


**Safety, immunogenicity, and preliminary clinical efficacy of a vaccine against extraintestinal pathogenic Escherichia coli in women with a history of recurrent urinary tract infection: a randomised, single-blind, placebo-controlled phase 1b trial.**


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**Main funding**

SHCS (through Swiss National Science Foundation, SNSF); Infectious Diseases Research Fund, pharmaceutical industry.
Research at the Service mainly focuses on:

The respiratory disorders during sleep (SDB) are a frequent problem among patients with a first ischemic cerebrovascular event. 40% of patients with SDB, that occurred during the acute phase of a stroke, have a breathing pattern characterised by central apnea and/or periodic breathing, isolated or associated with obstructive apneas, whose pathogenesis and clinical relevance in terms of impact on morbidity and mortality in the long term, are still largely unknown.

The assumption which underlies the present study is that an alteration in the autonomic system is the cause for central apneas that are frequently observed in the acute phase of a cerebral ischaemic event. In particular, an alteration in the baroreflex and chemoreflex, expression of a state of activation of the sympathetic nervous system, could be a causal factor in the genesis of SDB, as well as an independent risk factor for cerebral ischaemic events.

Their joint study will provide useful elements of pathophysiological clarification. After three years data collection is now finished, and data analysis is still ongoing.

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Peer reviewed publications in 2017


Walther D, Curjuric I, Dratva J, Schaffner E,

Main funding

ABREOC grant (internal competitive grant).
We continue to include patients in the ongoing NOSTONE TRIAL (Randomised double-blind placebo-controlled trial assessing the efficacy of standard and low dose hydrochlorothiazide treatment in the prevention of recurrent nephrolithiasis).

InterACTIVE-HD: Interregional Automatically Controlled Therapy to Improve HaemoDialysis (Sponsor-Investigator: ML. Costantino, Politecnico of Milan): not submitted to INTERREG due to problems at the Politecnico of Milan.

Studies started in 2017:
Post-authorisation safety study (PASS): the primary focus is to characterise and quantify the risk of idiosyncratic liver injury in JINARC (Tolvaptan) treated patients with autosomal dominant polycystic kidney disease (ADPKD) in routine clinical practice.
A 6-year, multicenter, non-interventional, post-authorisation safety study for patients prescribed JINARC for ADPKD.

Main funding

“NOSTONE TRIAL - Randomised double-blind placebo-controlled trial assessing the efficacy of standard and low dose hydrochlorothiazide treatment in the prevention of recurrent nephrolithiasis”: SNSF (#33IC30_166785/1, external competitive grant, budget: CHF 2,500,000).

Post-authorisation safety study (PASS): risk of idiosyncratic liver injury in JINARC (Tolvaptan) treated patients with ADPKD in routine clinical practice: Otsuka.
Prof. Luca Gabutti is also the Coordinator of the networks joining the Internal Medicine and the Nephrology Services of the EOC Regional Hospitals. The organisation aims at ensuring top quality medical and nursing care and also the widespread presence of available skilled specialists.

Peer reviewed publications in 2017


Main funding

All research projects of the Service were funded by Balli and Gianella foundations.
In 2017 the activity of the Cardiovascular Research Center of San Giovanni Hospital in Bellinzona was characterised by clinical research in several cardiovascular areas:

- Atherosclerosis at the level of the extracerebral arteries (a project sponsored by a competitive grant by the Swiss Heart Foundation/SHF)
- Atrial fibrillation (SWISS-AF, SNF-Project: PI: Prof David Conen, initial SNF Co-PI-applicant for Southern Switzerland: Prof. Augusto Gallino/Dr Marcello Di Valentino)
- Brain-Heart Study (a project supported by the SHF: joint project between the Cardiovascular Center and the NeuroCenter in Lugano on orphan cardiac diseases)
- Cardiovascular and geriatric epidemiology (SWICOS supported by the Foundation of the Swiss Society on Hypertension, SHS/ SNFApplication pending; design of the SWICOS published in open BMJ). Completion and publication in JEVT in 2017 of the clinical study on Telementoring in EVAR were also significant achievements.


Main funding

“In vivo” comparison in human carotid atherosclerosis: Plaque Neovascularization (PLAVASC) NCT02321410”: Swiss Heart Foundation (external competitive grant).

“Tako-Tsubo Cardiomyopathy and Cardiac Syndrome X: new insights into the pathophysiology (ENDAUT) NCT02307214” or “Tako-Tsubo Cardiomyopathy and Cardiac Syndrome X: new insights into the pathophysiology of two orphan cardiac Disease” respectively: Swiss Heart Foundation (external competitive grant) and ABREOC grant (internal competitive grant).

“Brain-heart interactions in Tako-Tsubo Cardiomyopathy and Cardiac Syndrome X (BRAINHEART) NCT02759341”: Swiss Heart Foundation (external competitive grant; CHF 7,000 obtained in 2015).

“Swiss Cohort Atrial Fibrillation study, Swiss-AF”: SNSF, Swiss Heart Foundation (Grant Number: 33CS30_148474/1).
Internal Medicine Service  
Regional Hospital of Mendrisio

Brenno Balestra MD  
Head Doctor

The Internal Medicine Service at the Regional Hospital of Mendrisio is one of the many Services that are part of the EOC multisite Department of Internal Medicine.

As done for the clinical activity aimed at undertaking care for patients with general internal medicine pathologies, our internal medicine unit deals with basic clinical research, by developing, in particular, the following projects:

- Errors in medication history: effects of the medication reconciliation process in patients admitted to an Internal Medicine Unit (article under review). This research study originated in the participation in the National Project ‘Progress! Safe medication therapy at transition points’, promoted by the Patient Safety Switzerland Foundation; the Regional Hospital of Mendrisio took part in this project as one of the eight Swiss pilot hospitals
- Gait characteristics in patients with chronic kidney disease (CKD). This survey was made possible thanks to the ABREOC 2012 grant and was developed in collaboration with the Nephrology and Geriatric Services in the OBV, the Institute of Human Movement Sciences and Sport, Department of Health Sciences and Technology, ETH Zurich Switzerland
- Study of the impact of sensitisation to organ donation (“to decide by decision”) using an ad hoc training course for high school students
- Publications of clinical case reports.

Peer reviewed publications in 2017

Del Giorno R, Berwert L, Pianca S, Bianchi G, Giannini O, Gabutti L.  
Comparative analysis of the long-term effect of two families of high-flux polysulfone dialysers on platelet count: a retrospective cross-sectional study.  

Giannini O, De Bruin ED, Quadri PL, Tettamanti M, Zemp DD.  
Influence of hemodialysis on the physical activity and motor capacity of patients with chronic renal disease, stage 4-5 (K/DOQI): study synopsis.  
Nephrol @ point care 2017;3(1):e33-e35.  

Marone C, Stanga Z.  
Vitamin-D-Mangel in der Schweizer Sonnenstube?  

Riva H, Balestra B, Giannini O, Bonforte G.  

Main funding

ABREOC grant (internal competitive grant).
5.3. EOC Department of Intensive Care Medicine

Prof. Paolo Merlani MD
Head of the Department of Intensive Care Medicine

The EOC Department of Intensive Care Medicine includes the relevant Services in the Hospitals of Bellinzona, Lugano, Mendrisio and Locarno. The Department has a functional type of organisational structure and is managed and coordinated by the Department Board. The rules adopted for its functioning are based on the fundamental principles of shared clinical governance (accountability, participation, transparency and management), and is organised using a multisite approach. Here, too, the creation of the EOC Department of Intensive Care Medicine was aimed at providing the most suitable response to the need to harmonise and rationalise the services provided in this sector in our Canton.

Intensive Care Medicine Service
Regional Hospital of Lugano

Prof. Paolo Merlani MD
Head Doctor

The Intensive Care Service deals mainly with clinical research projects. Research on the outcome (elderly patients, prediction models), haemodynamics with particular attention to pulmonary hypertension and monitoring as well as research on neuroreanimation represent our main research fields. We are increasingly interested in developing research about the point-of-care ultrasound in the critical care area.

Peer reviewed publications in 2017


At present, we are mainly concerned with epidemiological research using the Swiss ICU Minimal Data Set. Some clinical research is carried out in collaboration with the other cantonal ICUs as well as with the local Anaesthesia and Surgery Departments.

Main funding

Quality control of the Swiss ICU Minimal Data Set:
Swiss Society of Intensive Care Medicine grant.
The main studies of the Service are the following:

Transcranial color-coded duplex sonography assessment of cerebrovascular reactivity to carbon dioxide (Klinzing S, Steiger P, Pagnamenta A, Béchir M, Brandi G). Cerebral autoregulation aims at maintaining stable cerebral blood flow (CBF) despite changes in perfusion pressure. Several techniques are available for measurement of CBF. Transcranial coded duplex sonography (TCCD) is a newer ultrasound technique, combining Doppler and Ultrasound technique, thus allowing the visualisation of the examined vessels. There is a lack of systematic determination of CO2-cerebrovascular reactivity (CO2-CVR) in a population of normal subjects, a population under sedation and invasive mechanical ventilation with no presumed disturbance of autoregulation and a population with disease state assumed to influence CO2-CVR. This study was carried out to investigate CO2-CVR by TCCD in the above-mentioned populations.

Healthy and tumor tissue resistivity in women undergoing breast-conserving surgery by newly diagnosed non-metastatic breast cancer (Meroni D, Pagnamenta A, Meroni E, Mazzucchelli, Pagani O, Aliverti A). Tumour resistivity was significantly lower than both peritumoural fat and controlateral fat tissue in a mice model of breast cancer (Meroni D, et al. Med Biol Eng Compt 2016; 54: 1949). The aim of this study is to investigate tissue resistivity (tumour tissue versus peritumoural fat) in a cohort of patients undergoing breast-conserving surgery by newly diagnosed non-metastatic breast cancer. The study protocol and sample size calculation, as well as the statistical analysis plan are already completed. This trial will begin in the next few months.

Peers reviewed publications in 2017


Main funding

Procedura mini-invasiva per la discriminazione della resistività tissutale in pazienti con cancro del seno (Minimally invasive procedure for discrimination of tissue resistivity in patients with breast cancer) (PI: E. Meroni): ABREOC grant (internal competitive grant).
5.4. Paediatric Department of Southern Switzerland

**Prof. Gian Paolo Ramelli MD**  
Head of Department of Paediatrics, Head Doctor  

**Prof. Giacomo Simonetti MD**  
Head Doctor  
Regional Hospital of Bellinzona and Valli (San Giovanni)

Surgical and medical paediatrics involves the health of neonates, infants, children, and adolescents, their growth and development and their opportunity to achieve full potential as adults. Paediatric care encompasses a broad spectrum of health services ranging from preventive healthcare to the diagnosis and management of acute and chronic (often malformative) diseases. Paediatrics deals with biological, social and environmental influences on the developing child and the impact of disease and dysfunction on development. Children differ from adults anatomically, metabolically, physiologically, immunologically, psychologically and developmentally.

**Surgical Paediatric Service**

**Mario Mendoza-Sagaon MD**  
Head Doctor - Chief of Research Unit  

**Vincenzo De Rosa MD**  
Deputy-Head - Chief of Research Unit

Research at the Service mainly focuses on:

The main studies of the Service are the following:

- Research in retrospective chart review in clinical cases (Lead Investigators: M. Mendoza-Sagaon and V. De Rosa)
- Minimal invasive surgical management of ureteropelvic junction obstruction in the murine model (Lead Investigator: G. De Bernardis. In collaboration with the Institute of Oncology Research, IOR)
- Pediatric Robotic Surgery Program (Lead Investigator: M. Mendoza-Sagaon).

**Awards 2017**

M. Mendoza-Sagaon  
Honorary Secretary of the European Society of Paediatric Endoscopic Society (ESPES) from 1st October 2014 to 1st October 2017.
The main research areas are cardiovascular medicine (including blood pressure, vascular stiffness and cardiovascular health among adolescents), management of procedural pain in newborn babies, stroke in childhood, metabolism of salts, systematic reviews of rare condition, the diagnosis and management of juvenile idiopathic arthritis and PFAPA, the prescription of vitamin D and various international, various international oncology studies.

**Main funding**

Review sistematica sulla PRES (posterior reversible encephalopathy syndrome) in età pediatrica (Systematic review on PRES - posterior reversible encephalopathy syndrome - in paediatric age) (PI: G.D. Simonetti): ABREOC grant (internal competitive grant).

Peer reviewed publications in 2017


5.5. Anaesthesiology Services

The Anaesthesiology Service at the Regional Hospital of Bellinzona, has been conducting clinical trials on the topic of perioperative processes outcomes for the last 10 years, with regular publication of papers on prestigious peer reviewed journals. It actively collaborates on this research field with Balgrist Uniklinik (Zurich), the Institute of Research in Biomedicine (Bellinzona) and Montpellier University Hospital. Together with the Visceral and Thoracic Surgery Services of the Regional Hospital of Bellinzona and Valli, it is part of the Research Group on Perioperative Medicine, whose aim is to generate evidence on perioperative medicine and translate it into clinical practice.

In addition to the articles mentioned below, the Anaesthesia Service team has recently published a paper on the use of vena cava ultrasound to guide preoperative volume repletion and avoid post-spinal hypotension on the British Journal of Anaesthesia and contributed to an article, published on Anaesthesia, on a new method to monitor injection pressure at the needle tip.

Peer reviewed publications in 2017


Promotion 2017

A. Saporito
Confirmed as Secretary of the Swiss Association of Regional Anaesthesia and Analgesia (SARA).
5.6. Dermatology and Allergology/Clinical Immunology Services

Dermatology and Allergology/Clinical Immunology Service
Regional Hospital of Bellinzona and Valli

Carlo Mainetti MD
Head Doctor of Dermatology Service
Giovanni Ferrari MD
Head of Allergology and Clinical Immunology Service

In 2017, a large part of our academic activities focused on the study of skin manifestations in autoimmune diseases. Carlo Mainetti in collaboration with Benedetta Terziroli Beretta-Piccoli, as a guest editor, edited an issue on this subject in a prestigious American Paper: Clinical Reviews in Allergy and Immunology: Volume 53, Number 3, December 2017. Another issue on this topic is scheduled for 2018.

The remaining academic activity involved drafting of national guidelines for the treatment of frequent or relevant dermatoses. Urgent care and infectious diseases in dermatology were also studied.

In the next few years we expect that research on the management of chronic wounds will be carried out.

Peer reviewed publications in 2017


Main funding

Fondo Scientifico Dermatologia EOC (EOC Dermatology Scientific Fund).

Promotion 2017

C. Mainetti
Appointed as an honorary member of the “Société Française de Dermatologie” (SDF) (French Society of Dermatology).
5.7. Geriatric Services

Pierluigi Quadri MD
EOC Geriatrics Service Coordinator

The EOC Geriatrics Services, based at the Regional Hospitals of Lugano, Bellinzona and Vally, Mendrisio and Locarno, provide a multidisciplinary approach with specialist day clinics and wards to assess and intervene at an early stage or to prevent these geriatric problems. The Services also operate in a network together with other local dedicated geriatric structures.

Geriatric Services
Regional Hospital of Lugano and Mendrisio

Pierluigi Quadri MD
Head of Service

The EOC Geriatrics Services focuses on clinical research in two main areas:

- The first research area involves the study of clinical epidemiology of dementia, development and validation of tools capable of reliably assessing cognitive deficits that characterise the clinical expression of Alzheimer’s disease and the identification of functional, neuropsychological and/or biological indicators of risk of conversion to dementia of subjects diagnosed with Mild Cognitive Impairment (MCI) or Questionable Dementia (CDR 0.5) (Canton Ticino Study)

- The second area concerns motor disorders, and in particular balance instability and gait abnormalities in the elderly and their most direct consequences, falls and/or the fear of falling, and the role of cognitive abilities on motor control.

Peer reviewed publications in 2017


Main funding

ABREOC grant (internal competitive grant), Fondo per la Ricerca Geriatrica (Fund for Geriatric Research) of the Regional Hospital of Mendrisio.
5.8. Gynaecology and Obstetrics Services

The Gynaecology and Obstetrics Services provide a point of reference for women’s health and guarantee service for women during pregnancy and childbirth. They also deal with urogenital dysfunctions and breast pathologies. The Breast Cancer Center of Southern Switzerland (CSSI), based at the Regional Hospitals of Bellinzona and Valli and Lugano, was specifically set up to deal with breast pathologies in 2004.

Gynaecology and Obstetrics Service
Regional Hospital of Lugano

Thomas Gyr MD
Head Doctor

The team of the Breast Cancer Center of Southern Switzerland (CSSI) including this service, is actively enrolling patients to IBCSG 48-14 POSITIVE study, evaluating the pregnancy outcomes and safety of interrupting endocrine therapy for young women with endocrine-responsive breast cancer who desire pregnancy (Lead investigators: O. Pagani, A. Partridge, H. Azim, F. Peccatori).

On behalf of the CSSI (Lugano, Switzerland), the service is also actively participating in the INSPIRE phase 4 trial, International Nipple Sparing Mastectomy Registry (Lead investigators: R. Audiso and I. Rubio; Investigator at the Regional Hospital Service of Lugano: F. Meani).

Dr Meani, Senior physician of the Service, developed the CSSI App for breast cancer patients, for which he received a donation of CHF 30,000 by the Advocate Group “Anna dai Capelli Corti” in 2017. During 2017 he participated, as a designated surgeon, in the organisation of the SPARKO study: development of a minimally invasive procedure for the discrimination of tissue resistivity in breast cancer patients (Lead investigator: E. Meroni, EOC Regional Hospital of Mendrisio). Enrollment of patients started in December 2017. ABREOC funds the project.

The Service is also involved in a multicentric retrospective observational study on the management of young women with breast cancer in Switzerland: a snapshot (Lead investigators: A. Bordoni, A. Spitale, F. Meani, O. Pagani, E. Rapiti, D. Terribile, L. Rossi, G. Montagna). The study was funded by the Swiss Cancer League.

Peer reviewed publications in 2017


Main funding

Multicentric retrospective observational study on the management of young women with breast cancer in Switzerland: Swiss Cancer League (amount CHF 183,400). The grant was issued in 2017.

The funding of CHF 30,000 for the development of the CSSI App for breast cancer patients, edited by Dr Meani, was donated to the CSSI by the advocate group “Anna dai Capelli Corti” in 2017.
5.9. Radiology Services

Radiology Service
Regional Hospital of Lugano

Filippo Del Grande MD. PD
Head Doctor

In the Regional Hospital of Lugano, the following study is ongoing:
Evaluation of MRI work in progress (WIP) sequences for musculoskeletal imaging with different acceleration strategies compared to institutional protocols (no-inferiority study) and compared to arthroscopy (diagnostic performance study) (Lead investigator: F. Del Grande).

In collaboration with the University Hospital of Zürich:
LSOS (lumbar stenosis outcome study) (Lead investigator: S. Winklhofer): multicentric imaging evaluation of spinal canal stenosis. Correlation of Rx features with MRI feature in patients with olisthesis of the lumbar spine. The study is ongoing.

In collaboration with the University of Applied Sciences and Arts of Southern Switzerland (SUPSI):
Test-retest reliability of ultrasound echo intensity parameters in subjects with healthy Achilles tendons (Lead investigators: M. Barbero and A. Schneebeli).
The purpose of the study is the evaluation of the test-retest reliability of ultrasound echo intensity parameters in patients with healthy Achilles tendons abnormalities. The study is ongoing.

In collaboration with Johns Hopkins Hospital, Baltimore, Maryland USA:
• Evaluation of WIP 3D sequences for the elbow compared to standard 2D sequences. The study is ongoing
• Evaluation of WIP 3D sequences for the shoulder compared to standard 2D sequences. The study is ongoing
• Evaluation of rotational misalignment with WIP MARS sequences in MRI. The study is ongoing
• Evaluation of WIP MARS sequences in patients after hip arthroplasty compared to standard slice encoding metal artefact correction (SEMAC) sequences. The study is ongoing
• Evaluation of WIP MARS sequences in patients after knee arthroplasty compared to standard slice encoding metal artefact correction (SEMAC) sequences. The study is ongoing (Lead investigator: J. Fritz)
• MRI features of chest wall chondrosarcoma. The study is ongoing (Lead investigator: LM. Fayad)
• Spinal manifestation of genetically proven patients with Loeys Dietz syndrome compared to control group. The study is ongoing (Lead investigator: F. Del Grande).
Peer reviewed publications in 2017


Awards 2017

Certificate of merit - RSNA 2017, 26th November-1st December 2017, Chicago, USA:

- Del Grande F, Paul H Yi, Khodarahmi I, Fayad L. Three Strike and You’re Out?

Promotion 2017

F. Del Grande
Venia Legendi (PD), University of Zürich.
The main topics of the clinical research projects are in the field of the atherosclerosis imaging through 3Tesla nuclear Magnetic Resonance plaque imaging techniques. These studies are carried out in collaboration with Prof. Chung Yuan’s group, University of Seattle (WA), USA.

In particular, the study “Imaging of carotid plaque neovascularization by contrast-enhanced ultrasound and dynamic contrast-enhanced magnetic resonance” is ongoing. Lead investigators are: M. Cattaneo, C. Yuan, R. Wyttenbach, A. Gallino et al.

Another topic of research is the potential dose reduction inComputed Tomography, and namely: Computed tomography image quality phantom study using IMR, iDose and filtered back projection (Lead investigators: S. Presilla, R. Bellesi, R. Wyttenbach). The study is ongoing.

Another important study is: Use of high-resolution MRI for planning of radiotherapy in patients with prostate cancer: a dosimetric proof of concept study. (Lead investigators: NC. Azinwi, R. Wyttenbach et al). The study is ongoing.


Main funding

“Plaque neovascularization: assessment by contrast ultrasounds and plaque magnetic resonance (HR-MRI): In vivo comparison in human carotid atherosclerosis”: Swiss Heart Foundation (external competitive grant).

Awards 2017

M. Cristallo Lacalamita
5.10. Acupuncture and Traditional Chinese Medicine Studios

Regional Hospital of Mendrisio and Locarno

Giuseppe Peloni MD
Clinic Head of Surgery - Chief of Studio

Wilma Sanzeni-De Marco MD
Adjunct Physician - Chief of Studio

Acupuncture is a set of procedures involving stimulation of specific points on the body using a variety of techniques, such as penetrating the skin with needles that are then manipulated by hand or by electrical stimulation. The acupuncture studio at the Regional Hospital of Locarno was opened in 2002 and the studio at the Regional Hospital of Mendrisio was opened in 2008.

There are currently two “Agreements of Cooperation” with the University of Heilongjiang in Harbin, China and with the School of Chinese Medicine of Hong Kong Baptist University.

Ongoing and future research projects and training:

- Treatment of postoperative ileus in general surgery
- Treatment of balance disorders in the elderly in collaboration with the Geriatrics and Physiotherapy services. An abstract was presented at the 100th European Conference of Integrated Medicine in Berlin on May 3rd-5th, 2017
- Integration of acupuncture in Hospital Wards in the Regional Hospital of Mendrisio (Medicine, Surgery, Gynaecology and Obstetrics)
- International multicenter clinical trial (Regional Hospital of Mendrisio and TAO school of Lugano, Milan, Bologna) on the treatment of insomnia with acupuncture and use of benzodiazepines
- In collaboration with the Tao School of Acupuncture of Lugano we organise conferences on various topics with the participation of national and international experts.