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A word from our President

It is a great pleasure and honour to be elected President of our Association. With pride and gratitude I thank the many colleagues and executive members that bestowed this responsibility upon me during the recent Annual Meeting held in Milan.

Once again, the efforts of the whole Council and of the various Task Force members responsible for the programme were rewarded by a large attendance, along with a clearly increased appreciation of the scientific content. Furthermore, we witnessed the continuing adaptation of the format of the programme, which rose to the new requirements and increased expectations of delegates.

With 32 years of experience behind it, the EACTS now represents one of the leading associations in the thoracic and cardiovascular domains. Various cultures, each with their own histories, ideas and visions, make up the true richness of our Association, and provide a continuous stimulus in the progression of our profession. A sizzling sense of excitement and a magic atmosphere

always permeates through our Annual Meeting, where it is possible to hear not only the latest advances in the field but, more importantly, to be inspired by innovative solutions and new frontiers.

We should be proud of what has been achieved so far and should be grateful to those who have spent an incredible amount of time and energy to take the Association to where it is today. It is therefore our

responsibility, and my own within the next year, to follow-up on all projects that have been started and to introduce new ones that can be better explored by our successors.

We are living in a period of major change, driven mainly by the impressive technological advances that continue to shape our practice. The ability to communicate in real-time and the possibility to be continuously connected with the rest of the world have profoundly impacted how we relate to each other. We can now share our life and our emotions in the blink of an eye, and we can visualise small details from the other side of the globe.

All of these possibilities are already changing the way we share scientific information and the way we teach and educate the next generation. It is not difficult to envision how imaging, computer reconstruction and artificial intelligence will soon be utilised in medicine as diagnostic tools with increased reliability and reduced risks. In this respect, the Association is a place where all members can learn about the new

Continued on page 2

Domenico Pagano (right) marks the start of the presidency for Professor De Paulis during the Gala Dinner in Milan



A word from our President

Continued from page 1

techniques and technologies that are available, helping them to keep pace with the never-ending changes that are inherent with any technologic leap forward.

Indeed, EACTS is already focused on offering a large portfolio of educational activities aimed at preparing a new generation of cardiothoracic experts, updating the practicing surgeon as to the latest advances available. To this extent, as part of our activity in the Vascular Domain, we are in the process of organising a series of courses on endovascular therapies, with the contribution of the Society of Vascular Surgery, to help the cardiac surgery community in acquiring the skills necessary to pursue an endovascular approach in major aortic and valvular diseases.

This latter aspect underlines the need for radical changes in the resident programmes that are part of the educational activities in each European country. These programmes should reflect the continuing changes in the treatment of cardiac and vascular diseases, while including appropriate modifications appropriate to each European country. It is the responsibility of our Association to supervise, stimulate and standardise this transformation across the various nations with opportune petitioning to the regulatory bodies.

There is an old African proverb that underlines the advantages of teamwork: "If you want to go fast, go alone. If you want to go far, go together." This is the spirit of the EACTS, and all new members are expected to fulfil this principle. Following these values, we have been cooperating with the Society of Thoracic Surgeons to organise continuing educational activities in Latin America as well as in China. The principle is that state-of-the-art knowledge should be brought to wherever it is needed – a mantra that fulfils a core aim of any leading medical association.

I am sure that our Association will continue to grow and adapt to the needs of our professional lives, and I hope that my humble contribution will help in our goals of maintaining a high level of performance, increasing mutual cooperation and bonds with other professional societies, and supporting fellowship and educational activities while instilling a real sense of belonging to the young generation joining the EACTS.

I am looking forward with great optimism to a new year of progress and excitement.

Ruggero De Paulis
EACTS President

The 32nd Annual Meeting Looking back on Milan

More than 6,800 attendees – 4,587 of these physicians – gathered at the MiCo Milano Congressi from 18 to 20 October for the 32nd EACTS Annual Meeting.

Over the course of three days, more than 160 sessions were featured in an innovating programme of Abstract, Focus, Rapid Response and Professional Challenge sessions, hands-on training, plenary lectures and Techno-College symposia. 2018 was the first year for the new three-day format, and we have been delighted to receive positive feedback from you (Figure 1) regarding this fundamental change. Similarly, we are also pleased to see that adapting the Techno-College by staging sessions on every day of the Meeting was also so well-received (Figure 2).

Listing all the highlights from this year's meeting would be difficult as the sessions all featured great scientific discussions, collaborations and learning. Delegate highpoints included 'How to become a

hybrid surgeon' – as part of the EACTS Hybrid Surgeon Programme – and a Trial Update session in association with the newly established EACTS Analytical Support Unit.

Not surprising, a session detailing results from the ART trial 10-year results and the IMPAG, COAPT and MITRA-FR trials – held for the first time at a surgical meeting – was also well received. Indeed, this was one of three exciting #eactslive symposia that were streamed live during the event. You can catch up on each session by visiting the #eactslive YouTube channel.

In addition to the main scientific programme, the Annual Meeting also served as a place for networking, socialising and enjoying of the beautiful city of Milan.

Missed this year's meeting, or couldn't catch up on everything you would have liked to? Head to the EACTS website at eacts.org to explore more, and take a look at some of the snapshots from Milan. After all, a picture is worth a thousand words ...



Figure 1: Viewpoints on the move to a three-day event

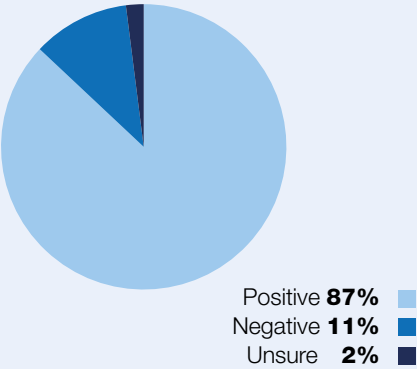
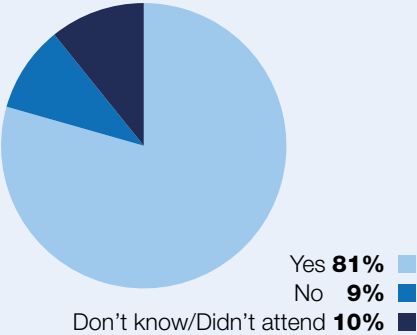
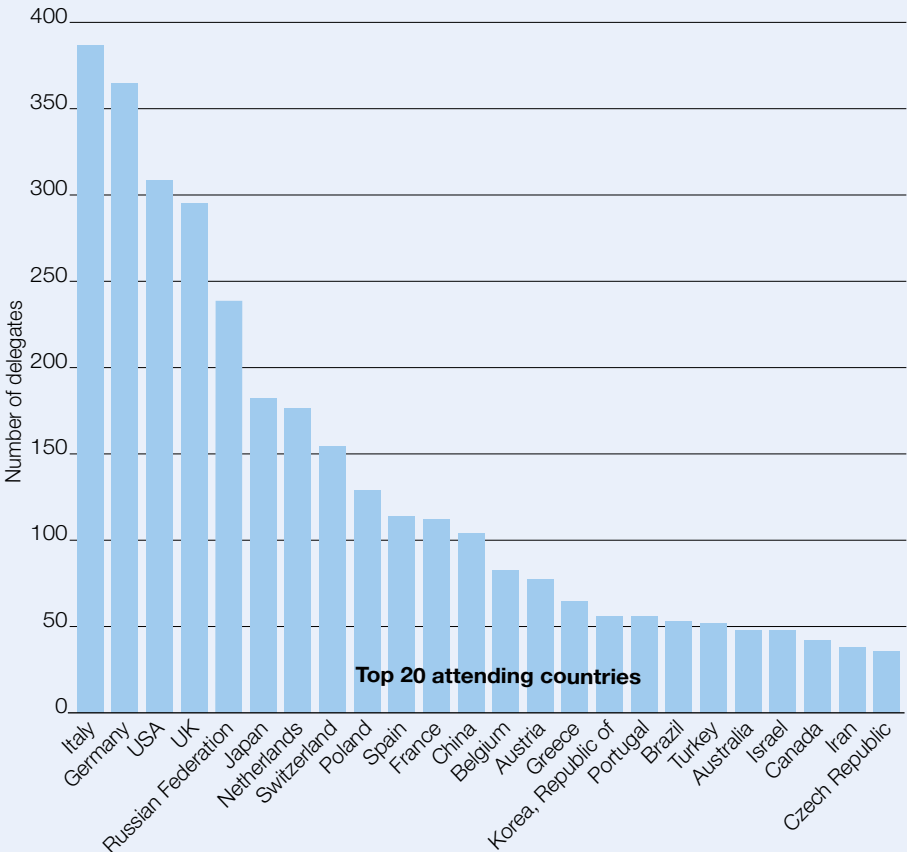


Figure 2: “Did you like the Techno-College being held every day?”



Registrations at the 32nd Annual Meeting





*Above: Ivan Yim and Chris Bond of Queen Elizabeth Hospital Birmingham, UK
Below: Pieter Kappetein (centre), Miguel Sousa Uva (far left) and the Jeopardy finalists*



2018 Jeopardy winners Pedro Magro and Paulo Oliveira of Hospital Santa Cruz, Lisbon

Jeopardy 2018

EACTS has been holding the EACTS Cardio-Thoracic Masters Jeopardy competition at the Annual Meeting since 2015. The competition is based on the classic American game show where the answers are given first, and then the contestants supply the questions.

Back in the summer, teams were asked to apply to compete. The teams comprised of two "Cardio-Thoracic" trainees or one "Cardiac" trainee and one "Thoracic" trainee, and each member was required to take an individual online screening examination where they had to answer 60 questions in 20 minutes.

The top four performing teams from the online exam were invited to compete in the semi-finals on Friday, 19 October during the 32nd EACTS Annual Meeting in Milan. All of the sessions were compered by Professor Pieter Kappetein. The first semi-final was won by Pedro Magro and Paulo Oliveira of Hospital Santa Cruz in Lisbon who defeated Federica Caldaroni and Andriy Dralov of Sapienza University in Rome. In the second semi-final, Ivan Yim and Chris Bond of Queen Elizabeth Hospital in Birmingham beat Jaime-Jürgen Eulert-Grehn and Timo Nazari-Shafti of the Deutsches Herzzentrum in Berlin.

In the final, held on the following day, the team from Hospital Santa Cruz took the prize, edging out the runners up from Queen Elizabeth Hospital Birmingham. Pedro Magro and Paulo Oliveira will now go on a fully sponsored trip to the STS 55th Annual Meeting in San Diego, where they will compete against the winning North American team to decide who will be the Cardiothoracic Surgery Resident Jeopardy World Champions.

The 32nd EACTS Annual Meeting

Highlights from a resident's perspective

Marlies Keijzers

on behalf of the EACTS Resident's Committee

The beautiful MiCo Milano Congressi venue in Milan welcomed a great number of residents for the 32nd EACTS Annual Meeting. Taking the elevators to the first floor, the young future surgeons could be immediately inspired by watching the EACTS television booth where interviews with high-profile names saw the latest developments in scientific and clinical work laid bare. If you missed these interviews don't hesitate to watch them on the EACTS website.

This year a new three-day programme was offered including 160 sessions to choose from. There were seven sessions organised by residents for residents. Some of them are already what we'd call "all-time-classics", popular among residents as well as senior surgeons. One of the classics was 'Nightmares in cardiothoracic surgery', in which senior surgeons opened up about their worst cases and how they handled unexpected events. Another was the Resident's Luncheon which, like previous years, brought residents and experts together at the same table. A fully booked event, all in attendance enjoyed fabulous Italian food and lively discussions about work and career choices. Next year, remember to book a seat early if you are interested.

Another great feature at the Annual Meeting was the Residents Zone at the EACTS booth in the exhibition hall, where young surgeons



(Left to right): Can Gollmann-Tepeköylü, Priyadharshanan Ariyaratnam, Marlies Keijzers, Sam Heuts, Alicja Zientara, Simo Syrjälä, Andras Durko, Miia Lehtinen and Rui Cerqueira

could meet each other and, for the first time this year, have the opportunity to network with experts in the field. Interesting discussions were held with experts including Giuseppe Cardillo and Michael Grimm about clinical and scientific work. There was also onsite anastomosis training under the tutelage of Miguel Sousa Uva which was an amazing opportunity for all who witnessed it.

In this year's nerve-racking Jeopardy final, the team from Santa Cruz hospital in Portugal took the title in a scintillating competition with Queen Elizabeth Hospital from Birmingham, UK. The Portuguese champions will go to play against the winners of the US Resident Jeopardy competition during the 55th STS Annual meeting in San Diego in January 2019. We wish you the

best of luck!

A fantastic roster of social events was also held during the Annual Meeting. For the second time, the residents organised a 'Get Together Party' in the centre of Milan, where residents and senior surgeons alike enjoyed a cocktail or two on the dance floor of a popular Milan club.

The Annual Meeting came to a close with the yearly Gala Dinner held at the Museo Storico Alfa Romeo. This beautiful location housed an eclectic collection of Alfa Romeo vehicles through the ages, and dinner guests were treated to a 4D movie before enjoying delicious food.

After a very successful Annual Meeting, we are looking forward seeing many residents at the next Annual Meeting in Lisbon.

Cardiac surgery: The fundamentals

The EACTS Fundamentals in Cardiac Surgery courses are designed to cover all of the basic aspects of cardiac surgery that a trainee would expect to be familiar with. Held at EACTS House in Windsor, UK, the Fundamentals programme spans three parts, focussing on different facets of cardiac surgery.

During each five-day course, a mixture of short lectures and expert perspectives are peppered throughout a programme of hands-on wet-labs and practical demonstrations designed to immerse the participants in the field.

Fundamentals in Cardiac Surgery Programme, 2019

Part I 4-8 February

The course and accompanying wet-lab will cover all aspects of coronary artery surgery, aortic valve replacement and aortic root surgery.

Part II 3-7 June

The second edition will encompass the essentials in aortic surgery, congenital cardiac surgery and surgery of heart and lung failure including mechanical circulatory support.

The penultimate day will offer expert 'hands-on' wet-lab training in heart and lung transplantation.

Part III 21-25 October

The final course will cover mitral and tricuspid valves, arrhythmia, endocarditis, hypertrophic obstructive cardiomyopathy, carcinoids and the aortic root. The course will once again include expert, hands-on wet-lab training.

For more information on the Fundamentals in Cardiac Surgery courses, head to <https://www.eacts.org/educational-events/programme/>



"It is great to work with young fresh minds who are ready to soak up information, and are all keen to learn. They come from different backgrounds, but they get on so well and I think they make friends for life."

Steven Livesey, Southampton, UK
Academy Director



2018 Award Winners

Hans G. Borst Award for Thoracic Aortic Surgery

Differential impact of intimal tear location on aortic dilation and re-intervention in acute type I aortic dissection after surgical repair.

W. Heo (Seoul, South Korea)

Young Investigator Award for Acquired Cardiac Disease

Pharmacological stimulation of the NO/sGC/cGMP

K. Benke (Budapest, Hungary)

and

Defective notch signalling drives smooth muscle cell death and differentiation in bicuspid aortic valve aortopathy

O. Harrison (Southampton, UK)

Young Investigator Award for Thoracic Disease

Negative pressure ventilation allows for successful ex vivo lung perfusion up to 24 hours

M. Buchko (Edmonton, Canada)

Young Investigator Award for Congenital Disease

Surgical ablation of ventricular tachycardia in repaired tetralogy of Fallot

F. Caldaroni (San Donato Milanese, Italy)

and

Do stage 2 palliation-related factors influence the outcomes after Fontan completion?

K. Vitanova (Munich, Germany)

The 2018 EACTS/STS Young Investigator Award

Optimal coiling pattern in minimally invasive segmental artery coil embolisation

K. Von Aspern (Leipzig, Germany)

EACTS-AATS Excellence Award (Work in Progress)

Translational research: the use of our current knowledge in understanding postoperative atrial fibrillation

M. Gilbers (Maastricht, the Netherlands)

The 2018 Techno-College Innovation Award

A novel bidirectional femoral arterial cannula for the prevention of leg ischaemia during peripheral cannulation for circulatory support

E. Tutungi (Malvern, Australia)



W. Heo



K. Benke



O. Harrison



M. Buchko



F. Caldaroni (left) with Ruggero De Paulis



K. Vitanova



K. Von Aspern



M. Gilbers



Domenico Pagano (left) and Hendrik Treede (right) with winner E. Tutungi

EACTS European Mechanical Circulatory Support Summit

The third edition of the EACTS European Mechanical Circulatory Support Summit took place in Berlin, Germany from 1 to 3 November, 2018. Some 300 participants from 35 countries attended.

One of the largest and most exciting events in short- and long-term mechanical circulatory support (MCS) worldwide, the excellent scientific programme highlighted the latest developments in the specialty and provided attendees with a glimpse into the future. The interactive lectures, unusual case reports, panel discussions and keynote talks were presented by a global faculty of leading surgeons, cardiologists and intensive care specialists.

We are extremely grateful to our industry partners for their continuing support of the Summit and for contributing to the insightful 'Updates' session on the final day which provided an extensive overview of the current and prospective devices available.

The ever-popular Rising Stars Quiz was even more interactive than in the past. Delegates were encouraged, via the medium of the Summit App, to test their knowledge against five teams of junior doctors and a team of 'shining' legendary stars in the



MCS field. Congratulations to our worthy winners from Italy, Marina Comisso, Giacomo Bianchi and Vittoria Lodo, and also to our Audience Winner, Frédéric

Vanden Eynden, from Belgium.

We look forward to welcoming you to the fourth edition of the Summit next year in Prague, Czech Republic. Further details

are to follow in the next edition of *EACTS News* and via the EACTS Academy website: <https://www.eacts.org/educational-events/programme/>.



(Left to right): Vittoria Lodo, Giacomo Bianchi, Marina Comisso (Quiz winners), Evgenij Potapov (Local Programme Chair), Frédéric Vanden Eynden (Audience Winner), Nafiska Chala and Konstantinos Magkoutas (Quiz 2nd place)

Professional Leadership



Rebecca Stephens addresses a question from a participant

The Professional Leadership course was held at EACTS House in Windsor, UK from 26 to 27 November, 2018. The course, which wasn't clinically focussed, explored the core values required for effective leadership, with a strong emphasis on emotional intelligence (EI).

The course programme was delivered by Roger Delves, Professor of Leadership Practice and Dean of Qualifications at Ashridge Hult International Business School, consultant haematologist Jane Stevens and Rebecca Stephens, a leadership coach and Britain's first woman to climb Mount Everest. The delegates, who were largely comprised of residents

looking to take on leadership positions in the future, fully engaged with the highly interactive curriculum, learning how they could develop as leaders and team players.

Over two days, the participants honed their influencing skills, discovered the importance of building relationships and networking, and learnt how to overcome organisational barriers to get things done. Filled with energy from constructive questioning, and with lots of two-way communication between the attendees and course facilitators, the course succeeded in increasing self-awareness and developing leadership skills not only for the benefit of an individual and their team, but most importantly, for the patient.



A delegate's perspective...

Miia Lehtinen

University of Helsinki, Finland and
Kymenlaakso Central Hospital, Kotka,
Finland

We were a mixture of PhD students eager to understand our leaders, cardiothoracic trainees active in junior leadership roles in their hospitals or national societies, as well as clinic-leading senior surgeons, already very established in the field. In my cardiothoracic training programme, leadership studies are mandatory, and this course certainly exceeded my expectations.

The course faculty also comprised an interesting mixture of teachers: Roger Delves is an expert in terminology and theory from the field of ethical decision-making methodologies and leadership practice; Rebecca Stevens introduced case examples ranging from extraordinary experiences in extreme conditions on Mount Everest to everyday situations in our work life; and Jane Stevens offered us a peek into healthcare leadership (often regarded as the most challenging organisational system to manage), and into the wobbling career ladder which lies ahead of all of us interested in gaining leadership positions in this difficult field.

During the first day of the course, we focused more on getting to know the correct terms and laws of this interesting field of behavioural science, helping us to be fully ready for the second day which engaged everyone on a mental and physical level. We were exposed to a lot of food for thought, as well as very practical tips and tricks to help us on our journeys to become politically savvy leaders. Over two days, it became very clear that there is certainly not just one effective way to lead. Quite the contrary: we began to understand that leadership is a dynamic and transformational skill that one must master.



Francis Fontan Fund Fellowship in Atrial Fibrillation

David Santer

Department of Cardiac Surgery,
University Hospital of Basel, Switzerland

"Do you have a hobby?" I was asked by Professor Nikolas Doll on a long car ride on the autobahn last June. We were on the way back from the EACTS course "Minimally Invasive Techniques in Cardiac Surgery" in Maastricht, the Netherlands, to Stuttgart, Germany. This seemingly simple question pointed at a subspecialty of cardiac surgery which I am absolutely passionate about. And yes, I do have a hobby, which has been cardiac pacing and device implantation for a couple of years now. This excitement for electrophysiology was probably the main trigger to apply for the Francis Fontan Fund Fellowship in Atrial Fibrillation.

In April 2018, my fellowship started with the AtriCure course "Navigating the Maze" in Barcelona, Spain. During these two days I was able to experience various lectures on atrial fibrillation and Cox-Maze therapy. I was able to meet Professor Cox himself, who reported how he had developed the different steps of the Cox-Maze procedure within the last decades. Since I have only had basic clinical experience with surgical pulmonary vein isolation, as well as occlusion of the left atrial appendage, the stand-alone TT-maze procedure has been a totally new field to me, which I have come across for the first time during this fellowship. The surgical stand-alone Maze procedure is not a primary approach, rather a valid alternative to be used after a series of unsuccessful interventional ablations.

In May 2018 I was invited to Leuven, Belgium, for training in concomitant ablation on cadavers, which offered excellent hands-



FRANCIS FONTAN FUND

on experience with common tools and techniques. Furthermore, experienced mentors shared their experiences and tricks during the session.

In June 2018 I visited the Department of Cardiac Surgery, Sana Heartcenter, Stuttgart, Germany, for a four-week hospitation, together with my colleague Maciej

Bochenek from Krakow, Poland. The team around Professor Doll is specialised in minimally invasive mitral valve, off-pump coronary artery bypass grafting, aortic surgery and paediatric cardiac surgery. I observed a great number of concomitant Maze procedures in patients undergoing mitral valve surgery. For exclusion of the left atrial appendage I was shown the most common techniques (cut-and-sew, stapling and the AtriClip device) and had the chance to discuss the advantages and disadvantages of the different approaches.

In addition to new surgical techniques and the high level of motivation required for setting up a TT-Maze programme, I learned that fruitful collaboration between cardiologists and cardiac surgeons is key to success in the future of heart therapy. As such, initiatives such as the Francis Fontan Fund are of the highest importance in order to improve training and patient outcomes.

High-level technology and knowledge is already available today, but this demands an unrestricted openness to collaboration and willingness to teach the next generation of cardiac specialists without any competitive pressure, and without the hindrance of interdisciplinary borders.

I want to thank EACTS, AtriCure and the team from Sana Heartcenter Stuttgart for the opportunity to participate in this fellowship. I think that atrial fibrillation therapy might become my second hobby soon ...

The Vascular Disease Domain Looking ahead to a packed 2019 programme

Davide Pacini

University of Bologna, Italy
Chair, EACTS Vascular Disease Domain

Aortic surgery in many aspects can be considered the centre of innovation in the cardiovascular field. Examples include the growing treatment of aortic aneurysms and dissections, the use of catheter-based technology and the necessity of treating an increasingly aging population. What's more, the consolidated use of thoracic endovascular aortic repair (TEVAR) has facilitated many high-risk procedures and

paved the way for a future filled with less-invasive or hybrid techniques.

The mission of the Vascular Domain is to spread aortic knowledge and continue to promote research and education in vascular pathologies. In 2018, a great deal of effort was spent on organising activities, starting with the highly attended Academy Course, and continuing with the Advanced Skill Courses on aortic valve repair, valve-sparing techniques and bicuspid aortic valves, and the extremely well-received vascular sections at the Annual Meeting in Milan.

An exciting 2019 is ready to take over with new and even more attractive training

courses. We will start with the traditional appointment of the Vascular Academy, 'Introduction to aortic surgery' held in March at EACTS House in Windsor, UK. Due to the success of the past editions and the positive feedback from participants, we have tried to embrace the educational value of the course with a new and attractive programme. Indeed, starting from the basics of thoracic aortic diseases, more time will be spent on training simulation sessions, during which experts will support delegates from theory to practice and perform wet-lab, dry-lab and hands-on demonstrations of valve-sparing

procedures, arch repair and aortic root enlargement techniques.

Live-in-a-box presentations will offer more live interaction from the operative room, showcasing surgical manoeuvres which are undertaken, explained, discussed and repeated all at once. In addition, cardiac surgeons wishing to embark upon an endovascular programme will be offered the opportunity to learn and train in the basics of TEVAR.

Together with the Adult Domain, the Vascular Domain will also organise two level III courses on aortic valve repair and sparing procedures. The first course, 'Annuloplasty for aortic valve repair: A practical approach', will be held 27–29 March, 2019 in Paris, France and offers, for a limited number of attendees, an in-depth, two-and-a-half day training course on approaches to aortic valve repair with external aortic ring annuloplasty. A step-by-step process will be explored including patient selection, echo valve analysis and technical standardisation for a reproducible repair, according to each phenotype of the aorta.

The second level III aortic course is the Aortic Valve Repair Summit which will take place from 20 to 21 June, 2019 in Brussels, Belgium. It will offer a deep dive into the techniques developed by the different schools of aortic valve repair and will focus on technical aspects, patient selection and the management of possible drawbacks and complications.

In a continually-changing world where transcatheter technology has modified the paradigm of standard surgical techniques, it is important to acquire knowledge, specific skills and leadership in every aspect of aortic surgery. Indeed, EACTS is focusing efforts on the development of hybrid surgeons



with multidisciplinary competences. To that end, the Vascular Domain is going to offer an educational programme on TEVAR, consisting of four courses that will join the hybrid surgeon educational programme and offer certification of acquired skill competencies.

Attendees at the first endovascular course will go on to understand the importance of

transcatheter surgery, describe the basic principles of imaging, learn diagnostic methods in structural heart and aortic diseases, practice transcatheter skills and define and measure landing zones.

Course two emphasises the mantra "I can do it", helping individuals to plan endovascular treatments, describe the surgical options for extending the proximal landing zone into the aortic arch and report on complications related to endovascular aortic treatment.

The third course will be held at the next EACTS Annual Meeting in Lisbon, Portugal, and is to be centred on how participants can manage procedures by themselves. After the course, attendees should finally be able to work in a hybrid room, use angiographic tables and C-arms, and plan the procedure on a PC.

Lastly, participants at the advanced endovascular skills course will undertake active practice in teams using a simulator, after which they should be able to manage different clinical scenarios using conventional, branched and fenestrated endografts.

With seven courses held over 12 months, we hope it is clear that the Vascular Domain has worked very hard to offer a 2019 calendar packed full of activities. The highly educational programme has been designed to address a wide range of topics in aortic surgery and embrace change in new hybrid technologies.

We hope you will join us for these fantastic experiences!



The second European Board of Cardiothoracic Surgery Level 1 Examination (MEBCTS)



Eduard Quintana, Patrick Myers, Pietro Bajona and Stephen Clark,
on behalf of the EBCTS

The development of a modern fit-for-purpose examination to assess professional knowledge, skills and competences remains a priority of EACTS and our profession as a whole. In October 2018, the second edition of the EBCTS Level 1 (MEBCTS) multiple choice (MCQ) exam was successfully delivered in Milan, a day before the EACTS Annual Meeting. The exam is on target to becoming the most comprehensive, complete and challenging examination in cardiothoracic surgery and specific critical care management.

The ongoing evolution of this high-stakes examination is evident, with an expanding engagement of surgeons from around 20 different countries. In this most recent edition, 63 candidates were examined. The exam is open to any surgeon worldwide who would like to test their professional competence, willing to achieve a badge of honour. The names of the successful candidates that achieved the EBCTS Membership will soon be published on the EBCTS website.

It is important to note that for certain countries, such as Switzerland, this represents a turning point in a surgeon's career as it has been established as a step in the permissive certification for independent practice. For now, other countries are discussing following the Swiss path of accepting this international exam and integrating it into their accreditation process.

The 180-question, paper-based

examination on the generality of cardiothoracic surgery covered the 2017 EBCTS Syllabus – an examination with top-grade contemporary standards produced through a delicate methodology, which is far from easy.

The final pass mark for the examination was set using the Angoff methodology. A thorough objective analysis of the entire exam was undertaken by an expert educationalist and a panel of senior surgeons on 1 October in Windsor, UK. Every question was scrutinised, overall performance analysed, and measurements of stability and

“The [MEBCTS] examination will continue to put the highest-quality expertise and patient safety at the frontline.”

accuracy were obtained. Several statistical items (point biserial, discrimination power, quintile distribution, percentage of correct candidates) were evaluated to ensure the appropriateness and quality of each question. The analysis revealed that the MEBCTS examination was, reassuringly, considered a very robust and high-quality tool for assessment, thereby justifying the substantial efforts that have been made for its development.

The exam held in Milan has been psychometrically assessed and, in-line with standard practice of high-quality examinations, each question has been explored in detail. In this way, any flawed question is able to be identified and removed from the exam if needed, and in favour of the candidates. In addition, a detailed summary of feedback from the candidates will be performed and disclosed soon.

Preparation for the examination via the educational activities of EACTS – held throughout the year and at the Annual Meeting, mapping educational events to the EBCTS syllabus – continues to increase drastically. This facilitates delivery of knowledge and hopefully provides a catalytic effect of feedback in learning.

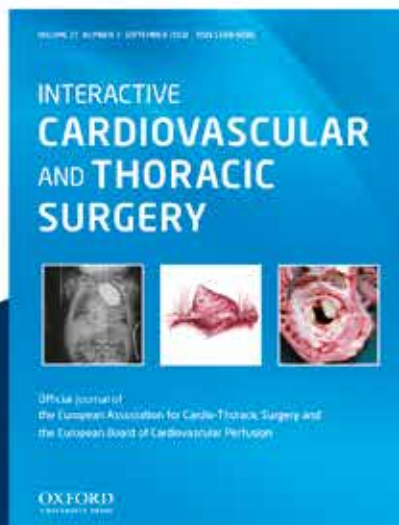
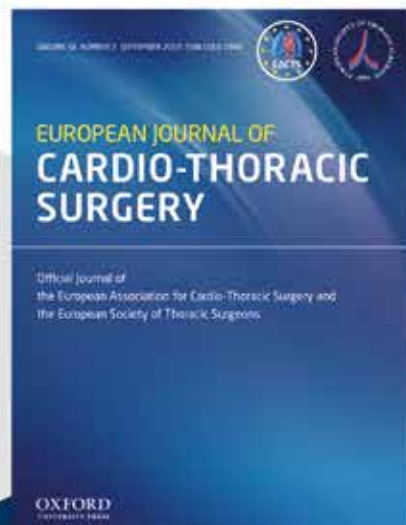
The first Level 2 examination on subspecialties – adult cardiac, congenital and thoracic – for those candidates that passed the first exam in Vienna in 2017, was delivered in early December in Windsor.

For future candidates, it is imperative to be familiar with the syllabus, currently available literature and state-of-the-art practice to ensure success. A repeat call is made to our surgical community, and in the training of directors who can oversee all of the necessary efforts needed to improve the current level of training and education, to the benefit of patients and trainees. Furthermore, great effort continues to be poured into the task of creating and delivering EBCTS exams, with a significant number of surgeons being trained in question writing, assessment and peer-reviewing.

The examination will continue to put the highest-quality expertise and patient safety at the frontline.

A CONFERENCE COLLECTION

from the EACTS journals



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The Multimedia Manual of Cardio-Thoracic Surgery

What's the difference between MMCTS and YouTube?

René Prêtre & Roberto Lorusso

On behalf of the MMCTS

These days everyone is a publisher. That's not how we normally think of ourselves as we upload a video to YouTube or Vimeo, or update a blog, but it's true. Anyone who wants to can publish anything – fast – without the inconvenience of dealing with a professional publisher.

So why do publishers still exist? What do they bring to the table in this world of one-click publishing? And why do surgeons turn to organisations like EACTS and publications like the *Multimedia Manual of Cardio-Thoracic Surgery* (MMCTS; <https://mmcts.org>) for information when the web is flooded with articles and how-to videos? The answer is simple: editorial quality and control.

The ease with which anyone now can publish has paradoxically led to publishers being more important than ever before. The formal publication process of expert editorial review weeds out inaccuracies and protects against sloppiness, and is crucial for authors and readers alike. So in a world where a search for “cardiothoracic surgery” on YouTube can return hundreds of thousands of results, a respected source like MMCTS is invaluable. Users and authors alike know they can trust it.

MMCTS for education

EACTS has made cardiothoracic surgery education its signature activity, and surgeons rely on the fact that material published in MMCTS is 100% professional and reliable. Every video tutorial is

reviewed and approved by experts who work with authors to ensure that the information provided is correct, the video is clear, and the tutorial is educationally relevant. Tutorials that don't meet our high standards don't get published.

In addition, MMCTS's tutorials are graded according to degree of difficulty – fundamental or advanced – and tagged as innovative if the procedure shown is new or in any way experimental. Junior surgeons can focus on fundamental procedures; those with more experience can review the advanced ones. Innovative procedures are of interest to all but actual performance of these surgeries

usually calls for the judgement of a senior surgeon.

YouTube and similar online platforms certainly publish good material – MMCTS's videos are hosted on YouTube, after all – but they also publish a lot of rubbish. They don't have editorial gate-keepers and editors and, without them, it's impossible for a user to know whether a video is showing a properly performed procedure or not.

A surgeon using MMCTS can be confident that the video tutorial he or she is viewing is professionally produced, expertly reviewed, and right.

MMCTS for authors

Since it's so easy these days to record a surgical video and self-publish it, why should a surgeon go to the trouble of working with MMCTS? The answer is four-fold: prestige, editorial support, marketing muscle, and PubMed.

■ **Prestige:** Tutorials accepted for publication in MMCTS have been reviewed and approved by an editorial board that includes some of

MMCTS is open to all surgeons to use and learn from, but only the best get published.



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- Authored by international experts
- Step-by-step surgical video for every procedure
- Clear, concise text
- Award-winning website design
- PubMed indexed



the world's foremost cardiothoracic surgeons. Anyone can publish on Vimeo, but not everyone can create a tutorial that is good enough to be approved by us, or one of our expert domain editors (Bartosz Rylski, Piotr Suwalski, Lorenzo Galletti, Tunc Lacin and Thomas Schachner). Publishing with *MMCTS* is a real achievement.

■ **Editorial support:** Our authors are surgeons first and foremost and we don't expect them to be professional writers or videographers. *MMCTS*'s editorial staff polish every submission to ensure that it's clear, well organised, and easy to understand. We want our authors to look great.

■ **Marketing muscle:** EACTS reaches surgeons all over the world with its educational programmes and *MMCTS* is part of that outreach. A surgical video that will get buried on YouTube will be actively marketed by *MMCTS*. Our metrics tell the story: In the past 12 months the number of monthly users has

Surgeons rely on the fact that material published in *MMCTS* is 100% professional and reliable.

more than doubled.

■ **PubMed:** *MMCTS* is PubMed indexed. PubMed includes only the top biomedical publications and the selection process is rigorous. All *MMCTS* tutorials are cited in PubMed and, for our authors, a PubMed citation is a genuine indicator of recognition and quality. For surgeons who are serious about learning and serious about teaching, there's no real comparison – a curated, indexed source like *MMCTS* is vastly preferable to an entirely unrestricted platform like YouTube. *MMCTS* is open to all surgeons to use and learn from, but only the best get published.

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Could you be an *MMCTS* author? If you would like to learn more, please visit 'Contributing to *MMCTS*' (<https://mmcts.org/page/431>) or email our managing

editor, Cori Mackin (cori.mackin@eacts.co.uk).

We look forward to hearing from you.

The EACTS Training Management System

A European platform to track residents' progress

András Durkó and Edris Mahtab

Erasmus University Medical Center,
Rotterdam, the Netherlands

Nowadays, cardiothoracic surgery is facing several challenges: patients are becoming increasingly complex, society demands continually improved quality of care, and cost-efficiency is a priority. This also has a profound impact on surgical training.

What can EACTS offer?

One of the prerequisites of a modern training programme is the ability to track and objectively evaluate the progress of residents. Over the last few years, EACTS has been strongly committed to the development of an online-based training management system (TMS), which is now live and free-of-charge for all EACTS members.

Possibilities of the EACTS Training Management System

One of the main functions of the TMS is to record and keep track of procedures performed during training; the whole range of cardiac, thoracic and vascular surgical procedures are covered. The procedure list is easily accessible and can be exported as an Excel or PDF file. Since the most recent software update of the TMS, it is now possible to easily record multiple procedures or part-procedures.

Besides recording and tracking procedures, it is also possible to evaluate progress and provide feedback regarding surgical and non-surgical skills through the TMS platform. To provide structured feedback, the TMS has a built-in Objective

Structured Assessment of Technical Skills (OSATS) platform, and employs various other evaluation forms to make monitoring of residents' progress much easier. What's more, the TMS is designed to be fully versatile: procedural recording and feedback functions can be used separately – it is up to you or your centre to decide which TMS functions you use.

Why should I use it?

Of course, keeping one's electronic portfolio up to date can be time consuming. However, when considering the current trends in cardiothoracic surgery (increased legal and societal demands and control, mobility in Europe and an increasing need for common-ground training), it is certainly worthwhile. Furthermore, unlike other commercially available alternatives, the EACTS TMS is



András Durkó

developed by cardiothoracic surgeons for cardiothoracic surgeons, which ensures that the system is easy to use, practical and tailored to cardiothoracic surgical training.

This year, many European centres have started using or have switched to the TMS for their training programmes. The TMS developers are in continuous interaction with the cardiothoracic surgical community to ensure that the system fulfils the needs of trainers and trainees. The TMS will also introduce the concept of EPAs (Entrustable Professional Activities) to the feedback functions of the TMS, which will allow a more concise overview of a resident's individual progress on the way to becoming a medical specialist.

EACTS provides online virtual tours and seminars to demonstrate and discuss the TMS in more depth. Interested or have any questions? Contact EACTS by emailing portfolio@eacts.co.uk.



Edris Mahtab



Highlights of 2018

2018 has been an active year for the Adult Cardiac Database (ACD) and for participating centres. Earlier this year, the ACD benchmarking tool reached an important milestone for data collection in Europe and has also continued to develop useful features and benchmarking reports for the participating units.

More than 100,000 procedures

The ACD reached an important milestone in May 2018, hitting the target of 100,000 procedures in the benchmarking tool. By December 2018, this number has now reached over 120,000, and will continue to increase as cardiac units from 11 European countries collaborate with EACTS to provide adult cardiac data from 2010 onwards.

Control charts

Control charts were the latest tool implemented in the ACD, allowing comparisons of average monthly performance for an individual's hospital against the overall performance of all participating hospitals in the ACD. The purpose of these charts is to benchmark processes against other centres.

How do control charts work? The data are plotted in time order, and a control chart always has one central line for the rolling average from your hospital and upper lines for upper control limits – showing caution or action – with lower lines showing good/outstanding control limits. These control limits are determined from historical data from all hospitals.

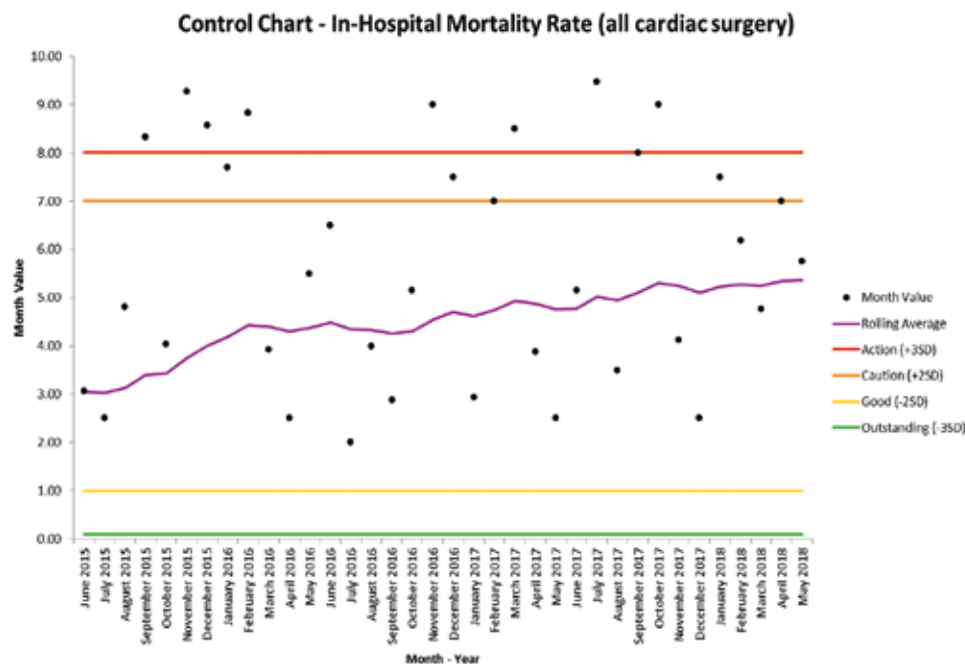
What else does the ACD benchmarking tool provide?

- Hospital selection page
- Patient profile
- Scatter view
- Procedure class breakdown
- Survival curves
- Control charts
- Clinical support tool
- Your patients' details
- Data completeness

The ACD tool also provides an ACD Updates page, and a downloads and metrics page for your hospital to access your centre's report (updated monthly), as well as a user guide, newsletters and a metrics dictionary to guide you through the statistical jargon of the database.

Centre reports

Participating centres can download their bespoke reports from the ACD benchmarking tool. This report provides a comprehensive overview of the centre's



cardiac data and contribution to the ACD, showing statistical analysis and comparisons of data including: completeness of data; volume of procedures; in-hospital mortality rate; re-operations for bleeding rate; and average post-operative length of stay.

ACD goals for 2019

The Database Task Force has been working tirelessly to revise the ACD variables and definitions. The new data dictionary will be ready for centres in December 2018, and the updated data fields will be implemented in the ACD on 1 January 2019. For participating centres, this will mean reviewing their dataset and ensuring that it complies with the updated ACD dictionary. The ACD team will be available to support the hospitals throughout this process in 2019.

The Database Task Force will also be publishing the EACTS data validation protocol in 2019 for participating centres, which will serve as an advisory document for centres to follow and ensure data quality in the ACD.

Collaboration with the participating centres is a high priority for the ACD, and EACTS is happy to announce the beginning of the Quality Improvement Collaborative Working Group, which will consist of ACD hospitals' representatives who will play an essential role in driving quality improvement initiatives in cardiac surgery across Europe.

To join the Adult Cardiac Database and participate in quality improvement initiatives in cardiac surgery across Europe, please contact the EACTS Quality Improvement Programme via quip@eacts.co.uk

Dr Örjan Friberg

Database Task Force Chair

Since 2017 I have had the privilege of being Chair of the ACD Task Force. The ACD is growing rapidly in terms of the numbers of procedures, participating centres and countries. This is gratifying but also increases the demands for clear and universally adopted data definitions and defined processes of data validation.

During the past year we, the Task Force, have focused most of our work on the very fundamentals of a database – a thorough revision and update of all included variables with definitions, as well as analysing and trying to define the different steps and means of data validation required for achieving as high validity as possible for the data in the registry.

A new data dictionary with the updated list of variables was just finalised and will be released publicly in December. We also hope to soon publish the first Annual Report, which will reflect the growth of the Database, the trends in adult cardiac data and future developments.





EACTS
European Association For Cardio-Thoracic Surgery

33rd EACTS
Annual Meeting
Lisbon, Portugal
3-5 October 2019

Exploring New Frontiers of Science

Deadline for Abstracts - 30 April 2019

To find out more or to register for the event visit:

www.eacts.org

Raising Standards through Education and Training



Highlights of 2018

This year, the EUROMACS Registry has grown as a registry and pool of scientific data for research in the field of mechanical circulatory support. Data quality is continually ensured by providing centres with statistical analyses and on-site audits. Centres also continue to play a role in increased data quality through consistent communication between EUROMACS and data managers and other responsible staff.

See the highlights below from the EUROMACS Registry including research publications, the first EUROMACS Paediatric Report, and an interview with a contributing centre from 2018.

68 participating centres have now contributed more than 4,300 implantations of long-term assist devices and 22,000 follow-up records.

The EUROMACS Committee in 2018

At the end of 2017, Professor Jan Gummert and Professor Paul Mohacsi stepped down after almost 10 years as Chairman and Vice Chairman of the EUROMACS Committee. EACTS and the EUROMACS Committee are grateful for their contributions and the advancements made for the EUROMACS Registry during this time. On 1 January 2018, the EUROMACS Committee welcomed the new Chairman, Professor Bart Meyns, Chief of Cardiac Surgery at the University Hospitals Leuven, Belgium, and the new Vice Chairman, Dr Felix Schönath, a senior consultant at the Department of Cardiothoracic and Vascular Surgery at the Deutsches Herzzentrum Berlin, Germany.

The EUROMACS Committee also welcomed Professor Steven Tsui, Chairman of the Cardiothoracic Advisory Group at NHS Blood & Transplant (NHSBT), UK and Professor Daniel Zimpfer, Director of Mechanical Circulatory Support at the Department of Cardiac Surgery and Director of Paediatric Cardiac Surgery, Medical University Vienna, Austria, as new members of the Committee.

The EACTS enables the first EUROMACS Paediatric Report

The first EUROMACS Paediatric Report was published in the *EJCTS* on 1 September 2018, with statistical support provided

by the Quality and Outcomes Research Unit (QuORU) of the University Hospital Birmingham. Data from 237 durable device implantations in 210 patients, originating from 25 European centres in 14 countries, could be analysed. A summary of this data shows that:

- Mean support time was 11.6 months (+16.5 months standard deviation [SD])
- 51% (n = 107) received a transplant at two years post ventricular assist device (VAD) implantation
- 82.4% (n = 3) of the children survived to transplant, recovery or are ongoing treatment at the last follow-up
- 17.6% (n = 37) died at two years. Cerebrovascular accidents were the main cause of death (24.3% of the deceased)

Devices: The relation between pulsatory and rotary/centrifugal devices was 46.8% versus 53.2%, respectively. This differed significantly from the adult cohort where only 3% of

patients had a pulsatory durable VAD.

Conclusion: The one-year survival rate seems to be satisfactory in this report. Device malfunctions, including pump-chamber changes due to thrombosis were the most frequent adverse event. A comparison between registries shows that outcome data differ with, for example, the Pedimacs report (North-American data). One of the most striking differences is the waiting time for a heart transplant. Whereas almost 50% of the paediatric patients in North America had a transplant within the first six months after a VAD implant, in Europe, only 33% of patients at six months and 38% at 12 months had a transplant. These numbers reflect the lack of suitable donor organs in Europe, which leads to significantly longer support times.

Availability of research data in EUROMACS contributes to quality improvement

Dr Alexander Bernhardt, who is responsible for the heart transplant and mechanical circulatory support programmes at the University Heart centre in Hamburg, Germany, spoke to *EACTS News* earlier this year to talk about his perspectives on EUROMACS: past, present and future.

Highlights of the interview can be found



Alexander Bernhardt

below. For more, be sure to read the full interview published in Saturday's issue of the *EACTS Daily News* at this year's Annual Meeting, available at: <https://www.eacts.org/resources/newsletters/>.

Dr Bernhardt, you're one of the surgeons who has participated in EUROMACS since the beginning of the Registry. What motivates you to keep on providing data for so many years?

My colleagues and I enter data from our patients on mechanical circulatory support into the EUROMACS Registry on a structural basis. There are two main reasons to do so: First, we contribute consistently to a database to administrate all relevant clinical data for these patients; secondly, we are able to obtain anonymised data from all participants for scientific study projects. The leading principle is that you can't manage it when you can't measure it; this keeps us motivated to register relevant therapeutic data.

What insights have you gained from EUROMACS?

I must say that you can always pose any questions to EUROMACS and promptly get the answers. Over the years, this service has been very helpful, and most important are the possibilities to obtain data for scientific projects. The results of these projects have given us insights into the consequences of therapeutic treatments as we practise them.

Can you expand more on that?

At our Hamburg University Heart Center, we've been able to obtain data from EUROMACS that has made it possible to do analyses on factors such as gender differences and the outcomes of isolated RVAD implantations in patients with right heart failure. These data have been published in peer reviewed journals.

A source for scientific data

The focus of the EUROMACS Registry is to promote scientific research for the care of patients with end-stage heart failure and who have received mechanical circulatory support.

Any contributor of data can approach the EUROMACS Registry to obtain a standard

application form, in which the applicant must summarise the data from the EUROMACS Registry required to conduct the research, as well as outlining the strategy of the publication. Evaluation of the proposal will then be reviewed by the EUROMACS Research Sub Committee, who check it against several required criteria:

1. Provision of an elaborate study plan in which the hypothesis, statistical methods, and use of the data are described in detail.
2. An opinion of the statistician concerning methods.
3. Differences and new assumptions/theses compared to current literature and ongoing studies.
4. Definition of the additional value, clinically or scientifically, expected to emerge from the results of the study.

Between 1 January 2016 and 1 December 2018, thirty-five proposals were submitted to the EUROMACS Committee. Seven studies have been published, and one study has been published in the *EJCTS*.

Research Publications in 2018

1. Gender differences and outcomes in left ventricular assist device support: The European Registry for Patients with Mechanical Circulatory Support; January, 2018

Christina Magnussen, Alexander M. Bernhardt, Francisco M. Ojeda, Florian M. Wagner, Jan F. Gummert, Theo M.M.H. de By, Thomas Krabatsch, Paul Mohacsi, Meike Rybczynski, Dorit Knappe, Bjoern Sill, Tobias Deuse, Stefan Blankenberg, Renate B. Schnabel, Hermann Reichenspurner, on behalf of the EUROMACS Investigators.

Background: Despite the increasing use of ventricular assist devices (VADs), gender differences in indications, haemodynamics, and outcome are not well understood. We examined gender differences and gender-specific predictors for perioperative outcome in patients on ventricular support. **Methods:** Multicenter data of 966 patients (median age 55 years, 151 women) from the European

Registry for Patients with Mechanical Circulatory Support (EUROMACS) were analyzed. Median follow-up was 1.26 years.

2. Second Annual Report from the ISHLT Mechanically Assisted Circulatory Support (IMACS) Registry; June, 2018

James K. Kirklin, Rongbing Xie, Jennifer Cowger, Theo M.M.H. de By, Takeshi Nakatani, Stephan Schueler, Rhiannon Taylor, Jenny Lannon, Paul Mohacsi, Jan Gummert, Daniel Goldstein, Kadir Caliskan, and Margaret M. Hannan.

The second annual IMACS registry report includes over 14,000 patients from 35 countries. Survival, adverse events, and an updated risk model is presented. Continuous flow pumps continue to dominate the world's experience. One and Two-year survival remains at 80% and 70%. Congenital heart disease and biventricular support are the most dominant risk factors. The database is poised for major novel analyses.

3. The European Registry for Patients with Mechanical Circulatory Support (EUROMACS): first EUROMACS Paediatric (Paedi-EUROMACS) report; July, 2018

Theo M.M.H. de By, Martin Schweiger, Hina Waheed, Felix Berger, Michael Huebler, Mustafa Ozbaran, Bohdan Maruszewski, Carlo Pace Napoleone, Antonio Loforte, Bart Meyns and Oliver Miera, on behalf of the clinicians who contributed data.

Objectives: EUROMACS is a registry of the European Association for Cardio-Thoracic Surgery (EACTS) whose purpose is to gather clinical data related to durable mechanical circulatory support for scientific purposes and to publish annual reports. Because the treatment of children with end-stage heart failure has several significantly different characteristics than the treatment of adults, data and outcomes of interventions are analysed in this dedicated paediatric report.

Approved and finalised research publications are made available on the EACTS website at <https://www.eacts.org/quip/euromacs/euromacs-scientific-articles/>



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European Association For Cardio-Thoracic Surgery

Academy Training

Aorta
Congenital Coronary
Oncology
ECMO
Surgical Pectus
Aortic Cardiac Surgery
Thoracic Cardio-Thoracic Valve Surgery

2019

Fundamentals in Cardiac Surgery: Part I

4-8 February, Windsor, UK

Introduction to Aortic Surgery

14-16 March, Windsor, UK

Thoracic Surgery: Part I

4-6 April, Windsor, UK

Video-Assisted Thoracoscopic Surgery (VATS)

16-17 May, Berlin, Germany

EACTS Aortic Valve Repair Summit

20-21 June, Brussels, Belgium

Endoscopic Port-Access Mitral Valve Repair Drylab Training

2-3 September, Maastricht, The Netherlands

Fundamentals in Cardiac Surgery: Part III

21-25 October, Windsor, UK

Endoscopic Port-Access Mitral Valve Repair Drylab Training

11-12 February, Maastricht, The Netherlands

Annuloplasty for aortic valve repair: A practical approach

27-29 March, Paris, France

Endoscopic Port-Access Mitral Valve Repair Drylab Training

29-30 April, Maastricht, The Netherlands

Fundamentals in Cardiac Surgery: Part II

3-7 June, Windsor, UK

Minimally Invasive Techniques in Adult Cardiac Surgery

27-28 June, Frankfurt, Germany

Reconstruction of the Aortic Valve and Root: A practical approach

18-20 September, Homburg Saar, Germany