

# Congress News

Saturday 25 August 2018

## Top picks

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What is their place?

**PAGE 9** Digital health and the future

Hear from the Chair of ESC's new Digital Health Committee

**PAGE 10** The creation of TAVI

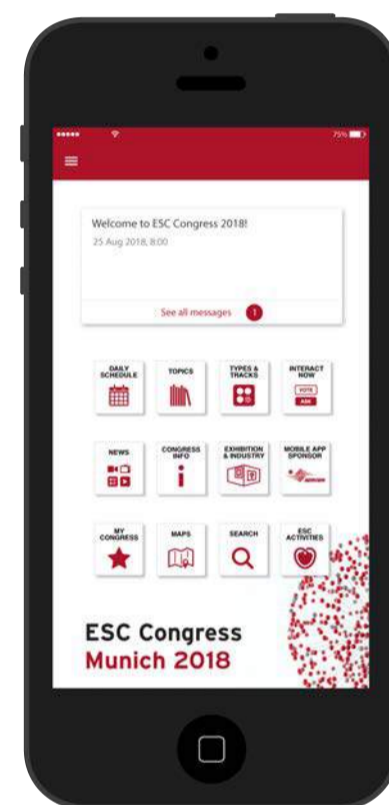
Henning Rud Andersen tells his story

**PAGE 10** Cardiologist burnout

A growing problem discussed



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# ESC Congress 2018

A unique opportunity to learn, experience and interact!



**Prof. Stephan Achenbach**

**Herzlich Willkommen in München! ESC Congress 2018 features a rich and stimulating programme and this year's spotlight, 'Valvular Heart Disease', places a special emphasis on the substantial growth in this area. "ESC Congress 2018 programme and faculty are larger and more diverse than ever as we present, interpret and discuss the latest scientific findings and provide in-depth clinical teaching and education," says Congress Programme Committee Chairperson Professor Stephan Achenbach.**

ESC Congress 2018 introduces several new features for enhanced learning and interaction, including a new track called 'Cardiology in 4 Days', which covers the entire field of cardiology with highly educational lectures given by leading experts. We have also expanded the successful

'Expert Advice' sessions and a dedicated lecture hall, the 'Library Room', provides a particularly suited stage for discussions. The addition of two 'Science Boxes' to the array of lecture rooms allows the presentation of substantially more abstracts in oral form.

Great excitement will surround the 14 'Late Breaking Science Sessions' and particularly the five not-to-be-missed 'Hot Line Sessions'. Trials presented in these sessions will receive world-wide attention as they provide potentially practice-changing insight. This includes - among many others - the use of aspirin for primary prevention (ARRIVE and ASCEND, the later in diabetes), oral anticoagulation in heart failure without atrial fibrillation (COMMANDER HF), extended use of ticagrelor rather than dual antiplatelet therapy after stenting (GLOBAL LEADERS), drug-coated balloons for small-vessel interventions (BASKET-SMALL 2) and the impact of high-sensitivity troponin testing on outcomes in suspected acute coronary syndrome (High-STEACS). For the first time, randomised trials will address topics such as drug treatment of transthyretin amyloid cardiomyopathy (ATTR-ACT) and oral antibiotics for endocarditis (POET). The functionality of the Mobile App has been improved and now allows attendees to direct questions to the panel even in these packed blockbuster sessions.

With ESC Congress always striving to be clinically relevant and up to date, new Clinical Practice Guidelines will be unveiled on syncope, cardiovascular disease in pregnancy, myocardial revascularisation and arterial hypertension, with sessions to help attendees understand the underlying science and support implementation of recommendations.

I am honoured that my home country is host to ESC Congress 2018. I urge you to embrace all opportunities and make the most of these unique and truly exciting days that bring together the world of cardiology. Enjoy Munich!

**Inaugural Session**  
Today, 17:00 - 18:00; Munich - Main Auditorium

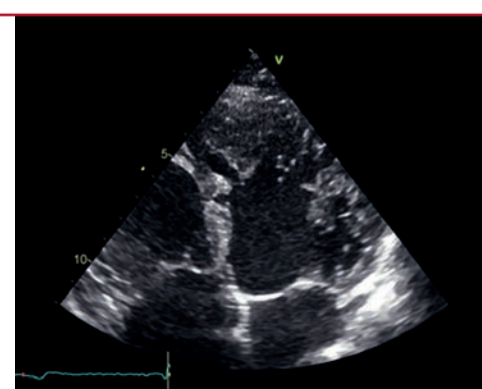
## What's Your Diagnosis?

BROUGHT TO YOU BY THE EUROPEAN ASSOCIATION OF CARDIOVASCULAR IMAGING (EACVI)

Echocardiography. Apical 4 chamber view in a 22-year old female with heart palpitations.

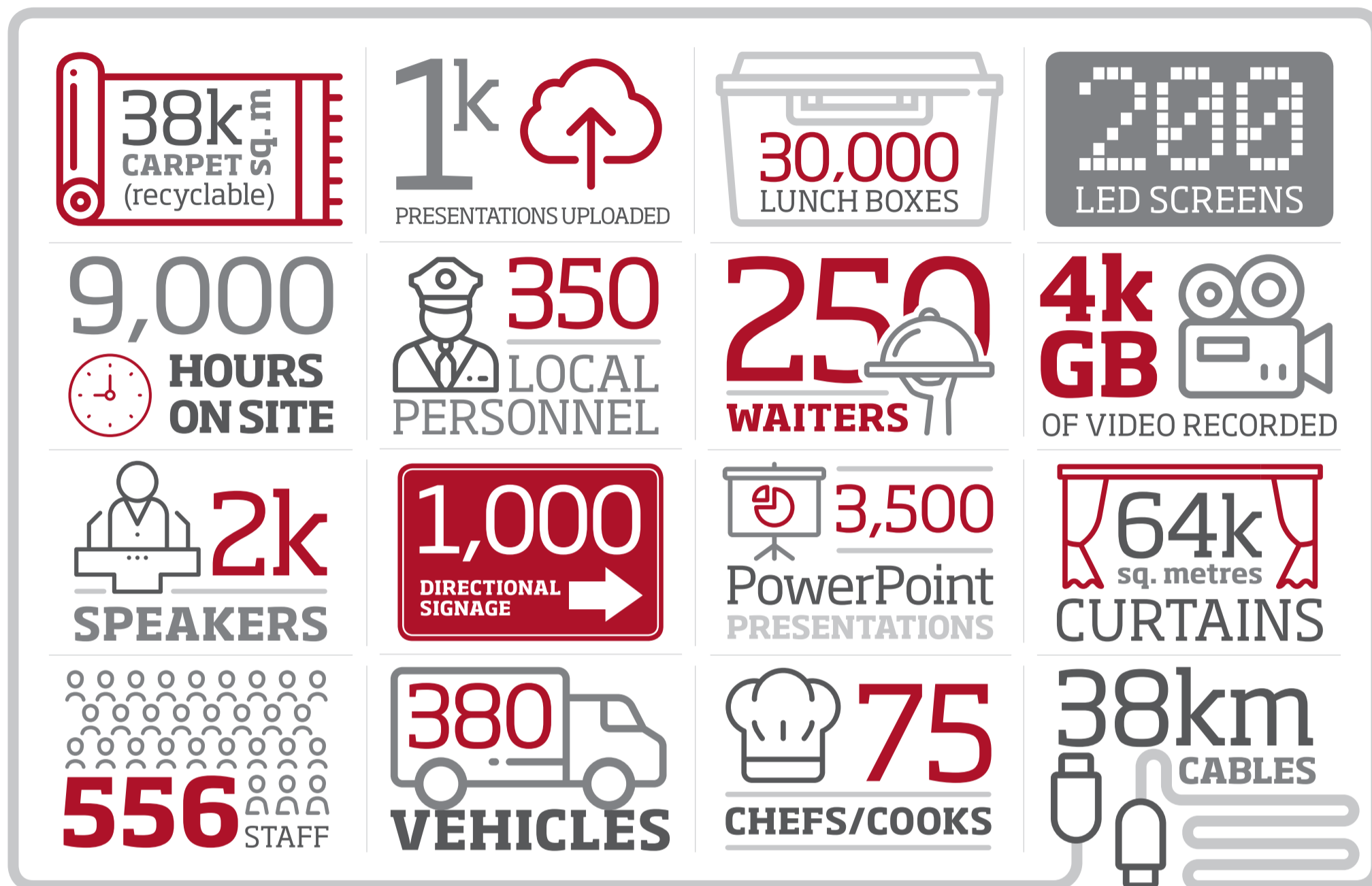
Thor Edvardsen, Oslo University Hospital, Oslo, Norway

EACVI  
European Association of Cardiovascular Imaging



Answer on page 3.

# ESC Congress - Facts & Figures



## Pick up your 2018 Free Pocket Guidelines



- FESC**  
FESC Lounge | From Saturday 25 August 09:00
  - ESC Professional Members**  
ESC Professional Members' Lounge | From Saturday 25 August 09:00
  - All other members\***  
Registration Area - Zone 7 | From Sunday 26 August 07:00
- \* Members of ESC National Cardiac Societies, Associations, Working Groups and Councils

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# 2018 ESC Clinical Practice Guidelines in the spotlight



**Prof. Stephan Windecker**

**ESC Congress 2018 sees the release of four new ESC Clinical Practice Guidelines on: Arterial Hypertension; Syncope; Myocardial Revascularization; and Cardiovascular Diseases during Pregnancy, as well as a consensus document on the Fourth Universal Definition of Myocardial Infarction (see table).**

The updates to these documents have been developed by expert Task Forces under the governance of the ESC's Committee for Practice Guidelines (CPG), chaired by Professor Stephan Windecker (Bern University Hospital, Bern, Switzerland). "Each guideline takes around two years from appointment of the Task Force Chairs, who are selected based on their established scientific track record and their leadership abilities, and selection of the Task Force Members, to the launch of the final output at the annual ESC Congress," explains Prof. Windecker. "Task Forces are composed of representatives from various ESC Associations, Working Groups and Councils and additional individuals chosen on the basis of their expertise. Together with the Review Coordinators, who manage incorporation of two or three rounds of peer review comments, and the large pool of peer reviewers, including also the 56 National Societies of ESC, there are over 100 experts contributing to the development of each document," he says.

**"All the ESC Guidelines' updates in 2018 have been made more concise and much more visual with illustrations and extensive use of graphics and figures. They are very user friendly and easily accessible."**

An important asset is the link with ESC CardioMed, directly connecting ESC Guidelines with corresponding textbook sections (e.g. the 2017 Valvular Heart Disease and 2017 Peripheral Arterial Diseases Guidelines). This latest mix of guidelines summarises all recent evidence, research and expertise relevant to these cardiovascular conditions and provides a vital resource for practising healthcare professionals. Don't miss the overview session of all these ESC Guidelines tomorrow, Sunday at 08:30 - 10:00; Munich - Main Auditorium.

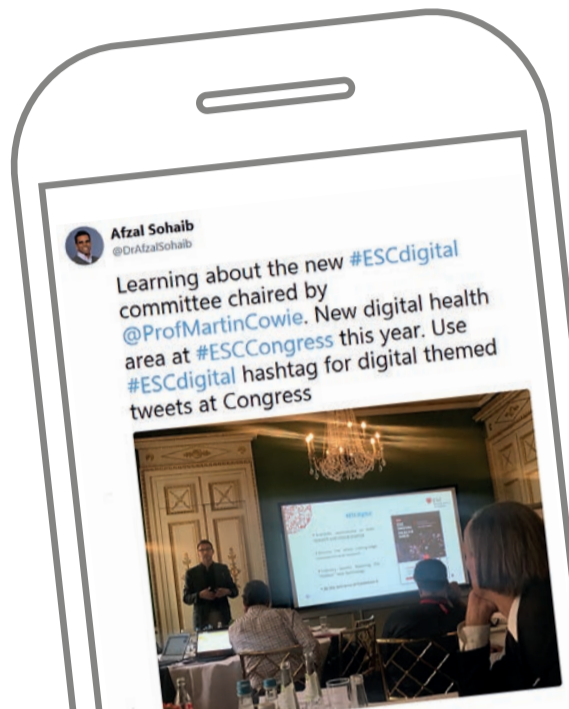
1. 2018 ESC/ESH Guidelines for the Management of Arterial Hypertension. *Eur Heart J* 2018. doi:10.1093/eurheartj/ehy339.
2. 2018 ESC Guidelines for the Diagnosis and Management of Syncope. *Eur Heart J*. 2018;39:1883-1948. doi: 10.1093/eurheartj/ehy037.
3. 2018 ESC/EACTS Guidelines on Myocardial Revascularization. *Eur Heart J*. 2018. doi: 10.1093/eurheartj/ehy394.
4. 2018 ESC Guidelines for the Management of Cardiovascular Diseases during Pregnancy. *Eur Heart J* 2018. doi: 10.1093/Eurheartj/ehy340.
5. 2018 ESC/ACC/AHA/WHF. Fourth Universal Definition of Myocardial Infarction. *Eur Heart J*. 2018. doi: 10.1093/eurheartj/ehy462.

Societies	Guideline/ consensus document	Task Force Chairs
ESC/ESH	Arterial Hypertension <sup>1</sup>	Bryan Williams (UK); Giuseppe Mancia (Italy)
ESC	Syncope <sup>2</sup>	Michele Brignole (Italy); Angel Moya (Spain)
ESC/EACTS	Myocardial Revascularization <sup>3</sup>	Franz Josef Neumann (Germany); Miguel Sousa Uva (Portugal)
ESC	Cardiovascular Diseases during Pregnancy <sup>4</sup>	Vera Regitz-Zagrosek (Germany); Jolien W Roos-Hesselink (Netherlands)
ESC/ACC/AHA/WHF	Fourth Universal Definition of Myocardial Infarction <sup>5</sup>	Kristian Thygesen (Denmark); Joseph Alpert (USA); Harvey White (New Zealand)



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## What's Your Diagnosis? Solution

BROUGHT TO YOU BY THE EUROPEAN ASSOCIATION OF CARDIOVASCULAR IMAGING (EACVI)

The abnormal trabeculations (arrows) in the left ventricular apex are typical for left ventricular non-compaction cardiomyopathy.

It can be associated with left ventricular dilation and/or hypertrophy, and systolic or diastolic dysfunction.

Thor Edvardsen, Oslo University Hospital, Oslo, Norway



# The future of cardiovascular imaging



**Prof. David Newby**

**Professor David Newby (University of Edinburgh, Edinburgh, UK) will tomorrow give the ESC Rene Laennec Lecture on Clinical Cardiology (Sunday, 09:30 - 10:00; Moscow - Village 5).**

Over the last ten years, Prof. Newby has focussed his research interests on advanced imaging of the heart. He was Chief Investigator for the SCOT-HEART trial, which showed that the addition of CT coronary angiography (CTCA) to standard clinical care clarifies the diagnosis of angina due to coronary heart disease (CHD).<sup>1</sup> "Results from SCOT-HEART

and the US-based PROMISE trial have shown us that with CTCA we can see whether a patient actually has CHD, and also that CCTA-guided changes in management can improve clinical outcomes," he says.

As for other important imaging techniques, Prof. Newby thinks that positron emission tomography (PET) holds promise for the identification of patients at risk for myocardial infarction. "Atherosclerotic lesions at risk of rupture have particular characteristics, including calcification, which is the body's response to a necrotic, inflammatory stimulus—similar to that seen in the lungs following tuberculosis infection. When there is a lot of calcification over the plaque it is less likely to rupture, but early microcalcification is not as stable," he explains. "We have shown that combined PET-CT using <sup>18</sup>F-NaF as a marker for calcification activity can identify ruptured and high-risk coronary plaque in patients with myocardial infarction and stable angina."<sup>2</sup>

**"<sup>18</sup>F-NaF PET-CT is an exciting technique, which could be used to identify vulnerable plaques, potentially informing the future management of patients with stable and unstable coronary artery disease."**

Identifying those that are most at risk for myocardial infarction is a key goal for the future of cardiovascular imaging. "We need to find out which patients require treatment the most and to see where imaging technology can help."

1. SCOT-HEART investigators. *Lancet* 2015;385:2383-2391.
2. Joshi NV, et al. *Lancet* 2014;383:705-713.

# Innovation through teamwork



**Prof. Francesco Maisano**

**Professor Francesco Maisano (Division of Cardiac Surgery, University Hospital of Zurich, Zurich, Switzerland), who today gives the ESC Paul Hugenoltz Lecture for Innovation (Saturday, 12:40 - 13:20; Digital Health Stage - Exhibition 3), is keen to emphasise what 'innovation' means.**

"Generally, I think the concept is overused. Really, it's evolution—a natural process," he explains. "When we talk about innovation, it's usually understood as being the action of a few, which is a misconception. We need to understand the difference between innovators and inventors."

**"Innovation is due to participation of the whole community; everyone has the potential to be a part of it."**

He continues, "The 1950s/60s was a pioneering phase in cardiac surgery; there was a large unmet need and masses of enthusiasm—key ingredients for innovation. For example, the development of cardiopulmonary bypass was facilitated by the need in the community for breakthrough technology, which created great potential for innovations in cardiac surgery." What else is important? Prof. Maisano doesn't hesitate. "Teamwork," he says. "Most innovations are the result of years of work involving many people. It's the convergence of ideas from different backgrounds that is key." Cardiology today is facing huge environmental changes. Indeed, the world is changing at a fast pace and it's only by joining forces and sharing ideas that we can make progress thinks Prof. Maisano. "It's important to listen to each other, not just to talk."

"The future holds great potential," says Prof. Maisano. "We've changed the way we treat patients and, with Heart Teams, the way in which we work; what's next is that education needs to change too. We need to adapt the way we train people—younger physicians should be supported not to copy their mentors, but to watch and learn, and to take advice, but not too much direction. It's important they can make decisions, work in a multidisciplinary team and interact well with each other." And this is where ESC comes in, he explains. "Without ESC, without a community, there will be no innovation. It is a cycle: innovation needs a community, and the community needs innovation."

## Abstract of the day:

### Does one size fit all for ECG-based risk stratification in athletes?

**There is no doubt that regular exercise is beneficial to health and has a positive impact on cardiovascular risk factors; however, in rare cases, exercise can result in sudden cardiac death (SCD).**

The cause of SCD in young athletes (aged 35 years and younger) is mostly inherited cardiac conditions, which can be identified on screening because of complaints or by an ECG.<sup>1,2</sup> Recommendations advocate for ECG screening of younger competitive athletes to prevent SCD,<sup>2</sup> but these recommendations have not been tested in older or 'master' athletes (aged over 35 years).

Today, Doctor Nicole M. Panhuyzen-Goedkoop (Amsterdam University Medical Centers and Radboud University Medical Center, Nijmegen, Netherlands) will present the results of a study that evaluated whether criteria-based ECG recommendations proposed for young athletes could also be used in master athletes (Abstract 81104). The study used data from 494 master athletes with abnormal screening results that triggered referral for cardiac evaluation. Dr. Panhuyzen-Goedkoop's group retrospectively analysed the ECG results for these athletes according to ESC,<sup>3</sup> Seattle<sup>4</sup> and International<sup>5</sup> criteria to define which criteria were the most appropriate for

detecting cardiovascular conditions that are associated with an increased risk of SCD (HRCC). The application of the three criteria resulted in the detection of different conditions: for example, ESC and Seattle criteria most commonly detected atrial enlargement (22%) and left ventricular hypertrophy (20%), while the International criteria most commonly detected ST-segment depression (13%) and T-wave inversion (12%). Cardiovascular conditions were diagnosed in more than half (57%) of the referred athletes, with 11% having HRCC. SCD occurred in three athletes. Of the criteria tested, the ESC criteria were found to be the most sensitive (67%) and the International criteria were the most specific (47%). The proportion of false-positive and false-negative results with the International criteria was 9.9% and 39.7%, compared with 24.3% and 19.0% with the ESC criteria and 16.2% and 30.4% with the Seattle criteria. Dr. Panhuyzen-Goedkoop will conclude that criteria based on ECG findings intended for use in young athletes are also appropriate for master athletes over the age of 35.

1. Wasfy MM, et al. *Methodist Debakey Cardiovasc J* 2016;12:76-80.
2. Panhuyzen-Goedkoop NM, et al. *Neth Heart J* 2018;26:127-132.
3. Corrado D, et al. *Eur Heart J* 2005;26:516-524.
4. Drezner JA, et al. *Br J Sports Med* 2013;47:122-124.
5. Sharma S, et al. *Eur Heart J* 2018;39:1466-1480.

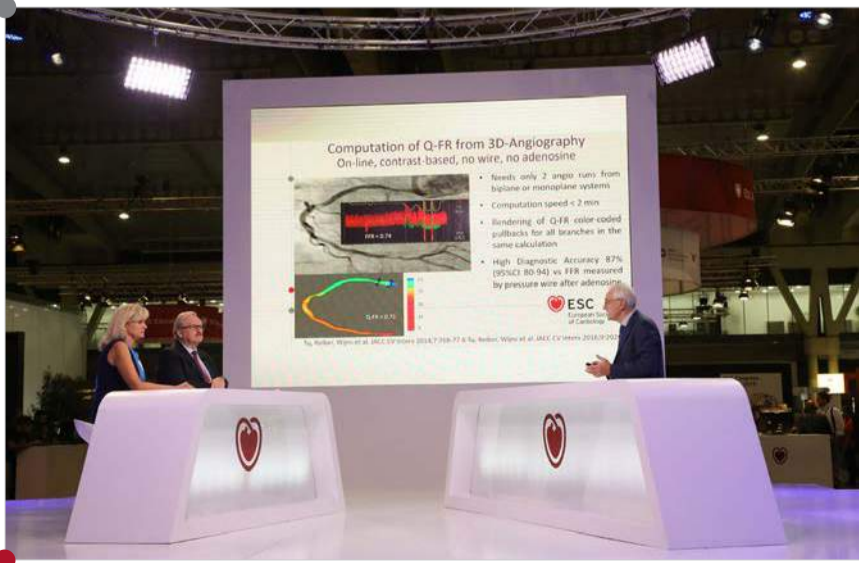


## News & opinion

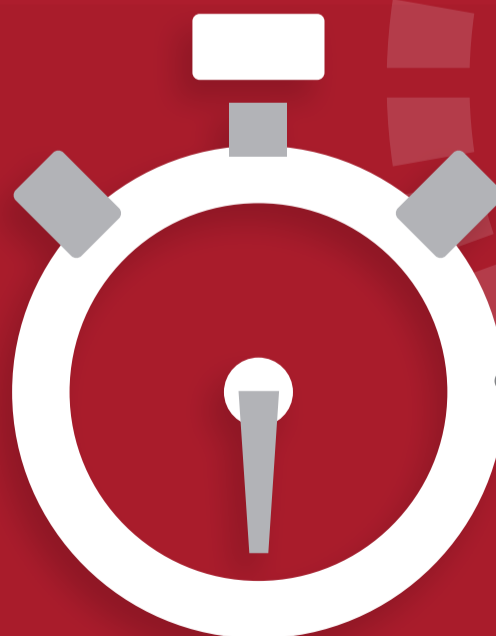
on the latest science and clinical developments

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# European Heart for Children: Addressing inequalities within the ESC family and worldwide

**At today's Inaugural Session, the hugely important work of European Heart for Children (EHC) will be acknowledged.**

Worldwide and also in Europe, not all children born with congenital malformation have equal access to appropriate care and, in some cases, the range of disparity is significant. Nine years ago, Claudia Florio and her husband, Roberto Ferrari, President of the ESC at the time (2008-2010), realised that the ESC's mission to 'reduce the burden of cardiovascular disease' could not be achieved in some member countries. With the help of Isabel Bardinet and François Heraud, the EHC was created as an international humanitarian organisation under the same umbrella as ESC, but as a separate independent entity.

When describing the progress made by the EHC in the past nine years, Professor Ferrari says "We have supported 26 missions in various ESC member countries during which 2,218 children were examined, diagnosed and treated, and 306 operations have been successfully performed." EHC has also developed a training grant programme for healthcare professionals in countries where further medical education is needed. To date, EHC has trained two cardiac surgeons, two cardiologists and six nurses. Exciting ongoing EHC-led projects outside of Europe include the building of a training centre for young paediatric cardiologists in Nigeria and the construction of a dedicated paediatric cardiac unit in Morocco.



#### Show your support

Visit the EHC booth in the ESC Plaza and purchase tickets for the Humanitarian Dinner on Monday 27 August at Zum Augustiner.

## Paul Hugenholtz to be honoured with a named lecture



**Dr. Paul Hugenholtz**

ESC is proud to announce that a new named lecture will be presented annually at ESC Congress in recognition of the longstanding contribution of the prominent Dutch cardiologist, Doctor Paul Hugenholtz.

After qualifying at Leiden University, Dr. Hugenholtz spent 20 years in the USA, before returning to the Netherlands to establish what would become the Erasmus Medical Centre in Rotterdam. Dr. Hugenholtz became involved in the ESC in the early 1970s and helped to orchestrate major changes which have become key ESC features, such as establishment of centrally organised international annual congresses, better communication of scientific investigations via the European Heart Journal and the introduction of Working Groups to increase collaboration around important topics.

Dr. Hugenholtz was President of the ESC from 1984 to 1988, a period characterised by growth and co-operation and the creation of the Fellowship of the ESC – a role to which he himself was the first elected member. Over the years, Dr. Hugenholtz has continued to emphasise that cardiologists must consider the entire cardiovascular system as their responsibility and to address the atherosclerosis epidemic using preventive measures and considering nutrition.

**ACTELION SATELLITE SYMPOSIUM  
SUNDAY, 26 AUGUST 2018, 13:00 – 14:00  
ROOM ALGIERS – VILLAGE 3**

**Achieve more in PAH – Translating insights into patient benefits, Volume 1**

**Marius M. Hoepfer (Co-Chair), Hannover, Germany  
Irene Lang (Co-Chair), Vienna, Austria  
Nazzareno Galiè, Bologna, Italy  
Jean-Luc Vachiéry, Brussels, Belgium**

**ACTELION SATELLITE SYMPOSIUM  
MONDAY, 27 AUGUST 2018, 13:00 – 14:00  
ROOM BRUSSELS – VILLAGE 4**

**Achieve more in PAH – Translating insights into patient benefits, Volume 2**

**Stephan Rosenkranz (Co-Chair), Cologne, Germany  
Adam Torbicki (Co-Chair), Otwock, Poland  
Fabrice Bauer, Rouen, France  
Vallerie McLaughlin, Ann Arbor, USA**



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<b>VILLAGE 6</b>	Kiev Madrid Tunis
<b>MAIN AUDITORIUM</b>	Munich
<b>THE HUB</b>	Bach Beethoven Brahms Haendel Schumann
<b>POSTER AREA</b>	Agora 1 - 2 Science Box 1 - 2
<b>EXHIBITION 3</b>	Digital Health



# Out of the hospital, but not out of the woods

Venous thromboembolism (VTE) risk for nonsurgical, acutely ill patients is highest in the first 30 days, starting with hospital admission<sup>1</sup>

Learn more about why your nonsurgical, acutely ill patients aren't fully out of the woods after discharge

Visit [VTEriskfacts.com](http://VTEriskfacts.com)

Reference: 1. Amin AN, Varker H, Prinic N, Lin J, Thompson S, Johnston S. Duration of venous thromboembolism risk across a continuum in medically ill hospitalized patients. *J Hosp Med.* 2012;7(3):231-238.

# Sessions of the day

## 9:00 - 10:00

**Agora 1** Patient and family journeys through cardiac illness

## 9:00 - 10:30

**Bach** The Influence of Quality Metrics in Interventional Cardiology and Heart Failure: Helpful or Hopeless?

**Beethoven** The changing face of congenital heart disease

**Brahms** Expert Advice - Drug prescription in the elderly

**Haendel** Out of hospital management of heart failure

**Schumann** Mini quiz - Sweden vs Cardiologist of Tomorrow Group

**Digital Health Stage** e-Health and m-health: hype or here to stay?

**Minsk** Expert Advice - CTO Workshop

**Yerevan** Mitral valve disease: from surgery to intervention

**Tirana** Surgery for combined heart disease

**Damascus** Stable coronary artery disease: review, update, and State of the Art in 2018

**Bern** HDL cholesterol - A moving target

**Stockholm** Cardiac rehabilitation: underutilised after myocardial infarction?

**Ljubljana** New insights into lipid biology and cardiovascular disease

**Madrid** Stroke, atrial fibrillation and anticoagulation

## 11:00 - 12:30

**Centre Stage** Late Breaking Science in Interventional Cardiology 1

**Bach** Squaring the circle: from congenital to acquired complex valvular and myocardial disease

**Beethoven** Optimising outcomes in valvular heart disease

**Brahms** The PCI Summit

**Haendel** My patient is asymptomatic but has...

**Schumann** Mini quiz - Czech Republic vs Greece

**Agora 1** Obesity and cardiovascular disease

**Agora 2** Hypertension -Risk profiling and treatment

**Digital Health Stage** Everyone get ready! Digital Health will change healthcare on a patient and population level

**Science Box 1** Cardiovascular rehabilitation revisited

**Science Box 2** Hot topics in valvular heart disease

**Minsk** The benefits of keeping cardiac interventions simple

**Belgrade** Valvular heart disease: review, update, and State of the Art in 2018

**Yerevan** Marfan Syndrome - A lifelong disease

**Cairo** Surgical options in acute and chronic heart failure

**Tirana** Cardiac phenotyping and outcome implications

**Damascus** Essentials in PAD: New evidence since the PAD guidelines - Will they change our practice?

**Bern** Do cardiac patients need psychosocial therapy?

**Stockholm** Cardiovascular evaluation of athletes: hot topics

**Bratislava** Late Breaking Pharmacological Science

**Copenhagen** Expert Advice - Combined hypertension and heart failure: navigating troubled waters

**Algiers** Meet the Experts - When to use Cardiac MRI in everyday practice

**Vienna** Echocardiographic assessment of the right heart

**Brussels** Novel therapeutic targets for myocardial ischemia-reperfusion injury

**Ljubljana** New approaches to the treatment of atrial fibrillation

**Baku** Expert Advice - Diagnosis and treatment of heart failure with preserved ejection fraction (HFpEF)

**Moscow** Strategies to optimize established heart failure therapies

**Kiev** Should we perform atrial fibrillation ablation in asymptomatic patients?

**Madrid** Bleeding risk and oral anticoagulation

## 12:30 - 13:10

**ESC TV Stage** ESC Guidelines 2017 - One Year After

## 12:40 - 13:20

**Digital Health Stage** ESC Paul Hugenoltz lecture for Innovation

**Agora 1** The Cardiovascular Health Team - How to manage frailty

## 12:45 - 13:15

**Bach** Precision medicine in coronary patients: enhanced risk identification and treatment -Experts on the Spot organised by MSD

**Beethoven** Treating tricuspid regurgitation : what is new? -Experts on the Spot organised by Abbott

**Brahms** New concepts in vascular protection: exploring the role of antithrombotic therapy -Experts on the Spot organised by Medscape

**Haendel** State of the art ICD therapy: Only shock to save a life -Experts on the Spot organised by Medtronic

**Schumann** Ambulatory blood pressure monitoring (ABPM): a clinical tool for hypertension diagnosis, risk assessment and therapy evaluation -Experts on the Spot organised by Medtronic

## 13:30 - 14:45

**Science Box 2** Cardiovascular risk in athletes

## 13:30 - 15:00

**Centre Stage** Live in the Box: Percutaneous mitral valve repair

**Bach** ESC ATLAS of Cardiology: statistics on cardiovascular disease and care

**Beethoven** Facilitating optimal outcomes and care in acute cardiology

**Brahms** Valvular heart disease - The "Big Picture"

**Haendel** Left ventricular hypertrophy: what to do in clinical practice?

**Schumann** Mini quiz - Bulgaria vs Morocco

**Agora 1** Innovative drug therapies

**Agora 2** Treatment of atrial fibrillation

**Digital Health Stage** Late Breaking Science in Telemedicine

**Science Box 1** Improving outcomes in cardiac arrest

**Minsk** Meet the Experts - Chest pain and normal coronary arteries: a clinician's conundrum

**Belgrade** Difficult treatment decisions in patients with severe aortic valve stenosis

**Yerevan** Double jeopardy - Pulmonary hypertension in high-risk situations

**Cairo** What you always wanted to know about aortic pathology and its treatment

**Tirana** Surgical help for acute emergencies in cardiovascular medicine

**Damascus** Risk of sudden death in hypertrophic cardiomyopathy

**Bern** An Update on Prevention

**Stockholm** Advanced nursing roles within cardiology

**Bratislava** Hypertension: review, update, and State of the Art in 2018

**Copenhagen** Refining risk assessment in hypertension

**Algiers** Meet the Experts - My patient has chest pain: which imaging modality should I use?

**Vienna** State of the Art in nuclear cardiology

**Brussels** Recent advances in the genetic architecture of valve disease

**Ljubljana** Mitochondria as an emerging target in cardiovascular disease

**Baku** Late Breaking Science in Imaging

**Moscow** Expert Advice - Management of acute heart failure in the emergency room

**Kiev** What's cooking? The most recent developments in atrial fibrillation management

**Madrid** Atrial fibrillation ablation

## 15:30 - 16:15

**Cairo** Have you considered cardiac amyloidosis in your patients? -Satellite Symposium organised by Pfizer

## 15:30 - 16:30

**Centre Stage** Why are we not achieving guideline-recommended RAASi doses in heart failure? Dr Gunther's dilemma -Satellite Symposium organised by AstraZeneca

**Bach** Differential diagnosis of hypertrophic cardiomyopathy - Imaging, genetics & rare causes -Satellite Symposium organised by Shire

**Brahms** PCSK9 inhibition: science, outcomes and guidance -Satellite Symposium organised by PACE

**Belgrade** Why use percutaneous ventricular assist devices? -Satellite Symposium organised by Abiomed

**Stockholm** Joining clinical practices: cardiovascular disease and type 2 diabetes -Satellite Symposium organised by Novo Nordisk A/S

**Copenhagen** ESC/ESH Guidelines on BP-lowering treatment: solutions for a new challenge -Satellite Symposium organised by Menarini

**Algiers** Emerging evidence-based approaches to reduce residual atherosclerotic risk -Satellite Symposium organised by Novartis

**Brussels** LDL-c: done deal, next epigenetics? -Satellite Symposium organised by PACE

**Ljubljana** Hypertension-related cardiovascular risks in obesity. New perspective and monitoring technology -Satellite Symposium organised by Omron

**Kiev** Dabigatran use in diverse cardiology settings -Satellite Symposium organised by Boehringer Ingelheim

**Madrid** Co-morbidities in chronic heart failure - time for paradigm shifts in the management of hyperkalaemia and iron deficiency -Satellite Symposium organised by Charité

## 15:30 - 16:45

**Digital Health Stage** Best of Apps

**Moscow** Optimized heart failure care throughout the patient journey -Satellite Symposium organised by SERVIER

## 15:30 - 17:00

**Bern** Spotlights on optimisation of guideline-supported reperfusion strategies for STEMI -Satellite Symposium organised by Boehringer Ingelheim

**Bratislava** Reducing cardiovascular mortality in patients with type 2 diabetes: closing the gap between evidence and practice -Satellite Symposium organised by Boehringer Ingelheim & Eli Lilly and Company Diabetes Alliance

**Vienna** GARFIELD-AF: new light shed on atrial fibrillation and its management -Satellite Symposium organised by Thrombosis Research Institute

**Baku** Translating real world evidence into your clinical practice for your multi-morbid patient -Satellite Symposium organised by Bayer AG

## 17:00 - 18:00

**Munich** The Inaugural session will be immediately followed by a networking event in ESC Plaza

## Our Diversity is our Strength

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● Abstract-based Programme ● Scientific & Educational Programme ● Sessions organised by Industry

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# EURObservational Research Programme: Revealing the true picture of European cardiac healthcare



**Prof. Alec Vahanian**

**Established in 2009, the aim of the ESC EURObservational Research Programme (EORP) is to improve healthcare throughout Europe and beyond.**

"It does this," explains EORP Chair, Professor Alec Vahanian (Hôpital Bichat, Paris, France), "by building on the previous ESC Euro Heart Survey programme to provide a better understanding of medical practice in Europe and to identify areas where improvement is needed." The programme has a wide range of registries. "In addition to those on common diseases, intervention and prevention, EORP is host to a number of unique registries on rare diseases, including the world's largest registry on pregnancy in cardiac patients—ROPAC. The data generated by EORP are a valuable resource for all those involved in cardiac care," he says. During his time as Chair, Prof. Vahanian focused on the ESC Clinical Practice Guidelines, using the key points—the main drivers of quality in practice—to assess just how well guidelines are incorporated into care. "The information we derive

from EORP can give us an idea not just of how medicine is being practised, but also, in some cases, why. For example, guidelines may not be adhered to because of financial or logistical constraints rather than a lack of understanding or awareness." The ESC is continually looking to strengthen and extend the reach of EORP. "We want to improve the quality of the registry by including data from across the spectrum of healthcare facilities," says Prof. Vahanian. "In particular, we would really like to engage more with the ESC National Cardiac Societies—as well as working groups, associations and centres—and share in the wealth of information they hold so that we can provide doctors and patients with a more detailed picture of the status of cardiac care within Europe."

### Don't miss!

ESC/EORP late breaking registry results to be presented during the following sessions:

EORP-AF general long-term and Euro Heart Survey AF registries, and ELECTRA registry sub-analysis: Sunday 26 August, 16:45 - 17:45; Kiev - Village 6

EORP VHD II registry: Monday 27 August, 08:30 - 10:00; Centre Stage - The Hub

ROPAC: Tuesday 28 August, 14:30 - 15:45; Centre Stage - The Hub

### Keep up to date with ESC CardioMed

An exciting, new online encyclopaedic resource from the ESC in collaboration with Oxford University Press, ESC CardioMed will keep you abreast of the latest advances in research and clinical practice in over 63 cardiology disciplines. So far, over 1,000 leading research and clinical specialists from around the world have contributed to this remarkable publication.

In-depth peer-reviewed articles and an expert editorial board—overseen by a prestigious panel of editors comprising Professor John Camm from St Georges Hospital, University of London, UK, Professor Thomas Lüscher from Royal Brompton and Harefield Hospital Trust and Imperial College London, UK, Professor Gerald Maurer from the Medical University of Vienna, Austria and Professor Patrick Serruys from Imperial College London, UK—ensure this digital textbook contains high-quality information, which is presented with multi-media features and extensive illustration. Uniquely, ESC CardioMed also includes cross-referenced links to ESC Clinical Practice Guidelines—currently the only general cardiology textbook to do this! Another key attribute of ESC CardioMed is that it is a dynamic, evolving knowledge base, with content updated several times a year to a robust schedule. "We believe that cardiologists will find the new digital format and ongoing updates of ESC CardioMed an invaluable resource in this complex, fast-moving medical field," said Prof. Camm. "What's more, ESC professional members and fellows will benefit from free access to all sections of ESC CardioMed!"

### Why not take a look at this new, invaluable resource?

Visit the ESC or Oxford University Press stands. Alternatively, visit online [www.escardio.org/Education/Textbooks/esc-cardiomed](http://www.escardio.org/Education/Textbooks/esc-cardiomed) for links to taster sections of ESC CardioMed

## Today

in the ESC Professional Members' Lounge



- 10:00 - 10:30** Upgrade your Social Media & Hands-On Reinforce your social media presence with a specialist
- 10:30 - 10:45** Hands-on the new ESC 365
- 10:45 - 11:00** Why is Digital Health relevant?
- 13:30 - 13:45** Upgrade your Social Media & Hands-On
- 14:45 - 15:00** ESC Congress - Behind the Scenes Tour
- 15:00 - 15:15** How can Enago help you in your publication goals?
- 15:30 - 16:00** Upgrade your Social Media & Hands-On
- 16:00 - 16:15** Hands-on the new ESC 365
- 16:30 - 17:00** Meet the European Heart Academy Team
- 18:00 - 19:00** Inaugural Networking Event



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**Prof. Stavros Konstantinides, FESC**



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# Are you ready for how digital health is transforming healthcare for doctors and patients?



**Prof. Martin Cowie**

**The term 'digital health' will undoubtedly strike fear into the heart of some doctors. But it shouldn't, says Professor Martin Cowie (Imperial College London, London, UK), Chair of ESC's new Digital Health Committee.**

"This is an exciting time for digital technology and we shouldn't be scared of it," he reassures. "Most doctors are already using aspects of digital health, such as electronic medical records and e-prescribing. Technology is moving at a rapid pace, providing doctors and patients with an increasing number of options for managing patient health more efficiently, more effectively and more conveniently. Advances have seen the introduction of a whole range of new technologies, including remote monitoring devices, teleconsultations, mobile health apps or hand-held devices and also wearable

technologies and social media. Digital health is simply the term used to capture all these different types of technology," Prof. Cowie explains, providing an example to illustrate how digital technologies have improved patient management in cardiology. "Consider a patient with periodic palpitation, which is sufficiently infrequent to be missed by standard seven-day continuous ECG monitoring. This patient will now be able to use a device clipped onto a smartphone to monitor their palpitation whenever it happens. What is more, the information can be made available instantly to their physician," he says, continuing, "these types of technology enable care to be tailored to the individual and may liberate patients from the constraints of clinic visits. As for doctors, they are able to access the information anywhere and at any time, at their convenience."

**"Digital health will significantly alter how we practise medicine."**

"Up to now, healthcare has been relatively slow to take digital technology on board but

that is changing," says Prof. Cowie, "and the ESC, on behalf of cardiologists, wants to embrace this change. Only by being a part of the conversation with those developing and regulating new technologies can the ESC influence their direction and impact on clinical practice. We understand that while many of the innovations will have a positive effect, the impact of others may be less clear cut. In these circumstances, we want to be able to discuss the evidence and to make sure that the new approach really is better than the old one."

The ESC's Digital Health Committee, which had its first meeting in April this year, is coordinating a range of activities and resources to help doctors to access information on the technologies that are out there and understand how they can improve patient management. "Trialled at last year's congress, the new Digital Health area at ESC Congress 2018 is bigger and better. The number of companies wanting to showcase devices in the area far exceeded our expectations and it was a difficult task to select the 50 we thought would be of most interest to our members," says Prof. Cowie. "We know that cardiologists are keen to learn about digital health; in a recent survey of over 2,200 ESC

members, 94% thought they needed to have a better understanding of it and 80% thought it would radically change their practice. I would urge everyone at ESC Congress 2018 to come to the Digital Health area, visit the booths, sit in on some of the many scientific sessions and watch live demonstrations of cutting-edge solutions and technologies. This is an ideal opportunity for doctors to get hands-on experience of digital health and to see how it applies to their daily practice." In addition to the congress activities, ESC is remodelling and modernising its website, making the different sections more linked up and providing greater access to information on new technologies. The society is also exploring the possibility of holding a stand-alone digital meeting—creating cross-links between cardiologists and the different groups involved in digital technology—and is looking into producing a new, more interactive journal.

"Digital health is the future," says Prof. Cowie, "there is no going back. ESC is determined to ensure that the society remains contemporary and faces up to the challenges of today and tomorrow rather than the challenges of yesterday."



## Bayer at ESC Congress 2018

*Saturday 25th August*

**Satellite Symposia**

<b>15.30 – 17.00</b> Baku – Village 5	<b>Translating Real World Evidence into Your Clinical Practice for Your Multi-Morbid Patient</b>  Co-Chairs: Christian Ruff and Manesh Patel
<b>15.30 – 17.00</b> Vienna – Village 3	<b>Garfield-AF: New Light Shed on Atrial Fibrillation and its Management</b>  Co-Chairs: Ajay Kakkar and Jean-Pierre Bassand

To learn more about our programme at ESC Congress 2018, visit us at booth **#B200**

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# Congress theme: Heart valves

## Talking to TAVI creator, Henning Rud Andersen



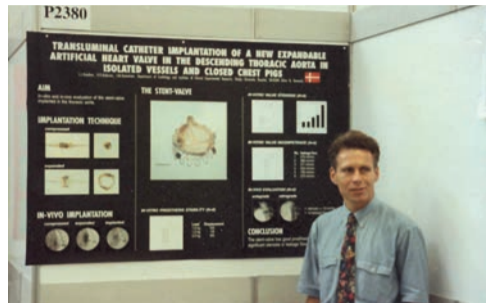
**Henning Rud Andersen**

Imagine coming up with a spur-of-the-moment idea and going on to see it change the lives of millions of people worldwide. Welcome to the world of Henning Rud Andersen (Aarhus University Hospital, Aarhus, Denmark), inventor of transcatheter aortic valve implantation (TAVI), who talks here to his long-time colleague and friend, Steen Dalby Kristensen.

**SDK: Take us back to the beginning. What gave you the idea for TAVI and when did your interest in it start?**

**HRA:** I know exactly when it was, February 1989. I was at a congress in Phoenix, Arizona, USA, listening to a presentation about coronary artery stent implantation in dogs. It suddenly occurred to me that instead of using 3 mm stents, it should be possible to make them ten times as big, to put a valve inside them and to implant the device using the balloon technique. The funny thing is that at the time I had no experience in the area—I was doing electrophysiology research—and had gone to the presentation just because it sounded interesting.

**“It took only a split second to come up with the idea but 10 years to develop it.”**



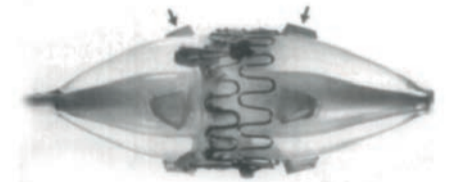
Henning Rud Andersen with the first presentation of TAVI data as a poster at ESC Congress 1992 in Barcelona, along with the 1992 publication in European heart Journal<sup>1</sup>

**SDK: You initially had difficulty in attracting interest in TAVI. Why do you think this was?**

**HRA:** Because it was a crazy idea and I was an unknown researcher! I still have the rejection letters from *Journal of the American College of Cardiology* and *Circulation*, stating that the research wasn't a high enough priority. Industry weren't interested because their advice from experts was that TAVI wasn't feasible. We have to remember that surgery was the go-to approach for many cardiac vascular diseases at the time and there was resistance to emerging interventional measures.

**SDK: How did you go about investigating TAVI without support?**

**HRA:** I researched in the evenings after I had finished work. I had access to the laboratory but I used some of my own money and made all the valves myself, by hand. The research centred around two types of experiments: *in vitro* pressure testing in a simulated circulatory system and load testing of the implanted valve in pig aorta. The first *in vivo* implantation in a pig was performed on 1 May, 1989. Despite assurances by surgeons that the device



would embolise at low loads, I found that in 80 kg pigs it could withstand 2 kg before it began to distort, proving that the implanted valve remained stable without embolisation.

**SDK: What kept you motivated during the periods of disinterest and rejection?**

**HRA:** I was young and enthusiastic and I was convinced it was a good idea. When you have a good idea, you don't give up. And, to be honest, it was a lot of fun.

**SDK: How long did it take to get TAVI accepted for formal investigation?**

**HRA:** In 1992, I finally got my research published in a paper in *European Heart Journal*.<sup>1</sup> But it was another 10 years before research groups in Europe took up the idea and were able to reproduce my findings. This attracted industry support and led to the first-in-man implantation by Professor Alain Cribier (Université de Rouen, Rouen, France) on 16 April, 2002.

**SDK: Tell us a bit about the use of the device for your father**

**HRA:** At the age of 86 years, my father was diagnosed with aortic stenosis and, being considered too frail for surgery, was

recommended for TAVI. He underwent the procedure at my own hospital, with me waiting anxiously outside the theatre. It was very successful and seven years on, the 'old Viking' is still going strong.

**SDK: What is the future for TAVI?**

**HRA:** The main challenge now is to get it into the developing world. There are millions of people in areas such as Africa and India with infection- or rheumatic disease-associated aortic valve stenosis who are dying in their teens or early twenties. We need to find ways to simplify the technology and to make it cheaper so that we can give these patients access to the same life-saving opportunities that we in the developed world enjoy.

1. Andersen HR, et al. Eur Heart J 1992;13:704-708.

**Don't miss!**

Valvular heart disease: review, update, and State of the Art in 2018  
Today, 11:00 - 12:30;  
Belgrade - Spotlight Village

## Cardiologist burnout, a growing problem



**Dr. Anthony DeMaria**

**There is no question that burnout is a major problem among all physicians across all specialties, from family practice to internal medicine and surgery.**

Indeed, the results of a US-based survey of 15,000 physicians across 29 specialties show that 42% reported evidence of burnout.<sup>1</sup> "When the results were split by specialty, cardiology was somewhere in the middle with 43% of physicians affected, whereas the most affected were critical care specialists and neurologists (both 48%) and the least affected plastic surgeons (23%)," explains Doctor Anthony DeMaria (University of California, San Diego, Division of Cardiovascular Medicine, La Jolla, California, USA), who will co-chair a special session on this issue tomorrow (Sunday, 15:50 - 16:40;

Tunis - Library Room - Village 6). Perhaps one of the most striking findings is that the greatest incidence of burnout—50% of physicians—was reported for those in the 45-54 years old age group. "These are relatively young physicians," points out Dr. DeMaria. "One might have expected burnout to be more prevalent in older physicians who have become more frustrated with increased bureaucracy, but this is not the case."

**“Doctors are reporting that they are spending more and more time dealing with computers and documents, and less time interacting with their patients and practising medicine.”**

As for contributing factors, more than half of physicians (56%) who reported burnout cited excess bureaucracy.<sup>1</sup> Other causes are long working hours (39%), lack of respect from colleagues (26%), increasing computerisation of practice (24%), insufficient compensation

(24%) and a lack of control/autonomy (21%). "The independence of physicians is becoming ever more restricted," confirms Dr. DeMaria. "Mounting rules and regulations—coming from government, payers and hospital organisations—are frustrating. The transition to electronic health records is a classic example of the need for increased documentation, which is certainly a problem in the US, and I have reason to believe that it's the same in Europe," he says.

So, what can be done to support cardiologists suffering burnout? Dr. DeMaria thinks that looking at the causes of their frustrations is vital. "Assuming that the challenges and sources of stress are not financial, which presumably is readily fixed with more money, then the main issue is workload," he says. "Cardiologists are frequently called on to handle after-hours emergencies and the takes are long and often impact lifestyle. What would help enormously is a reduction in the call for documentation, especially as it is often not particularly important." Giving cardiologists greater autonomy is also key, he thinks, "As things stand now, if we want to use a specific drug or procedure, there are often

a lot of hoops that we need to jump through; the whole process could be simplified."

The US-based survey showed that 13% of cardiologists experienced depression as well as burnout.<sup>1</sup> Among those who reported depression, one-third stated that they were more easily exasperated by patients (33%) or less engaged with them (32%) as a result of their depression. "Interactions with colleagues and medical staff are also affected," highlights Dr. DeMaria. "Even in the earliest stages of burnout, it begins to have an effect on how cardiologists deal with their day-to-day practice."

The prevalence and nature of burn out has attracted the attention of the medical profession and healthcare enterprise in general, which is a positive step forward. As Dr. DeMaria emphasises, "The ESC recognises the importance of burnout for cardiologists and for their membership. They are giving the topic a lot of attention and rightly so."

1. Medscape National Physician Burnout and Depression Report 2018. www.medscape.com/slideshow/2018-lifestyle-burnout-depression-6009235, accessed 12 July 2018.

# ESC Atlas of Cardiology - what can we learn?

## Do you know how many heart transplants or percutaneous coronary interventions your country is performing compared to other countries?

How about the impact of smoking and obesity on cardiovascular disease (CVD) or which country has the most cardiologists per capita? The ESC Atlas of Cardiology (Atlas)—a unique compendium that documents CVD statistics across the ESC member countries—has the answers.

## Get an exclusive Atlas demo at the ESC stand

Atlas maps, analyses and compares data, including major risk factors, for CVD prevalence and mortality in each member country of the ESC. It also features novel data on health infrastructure and cardiovascular services to highlight gaps and disparities in service provision and cardiovascular outcomes across systems. "No other data compilation of this kind is available for CVD and is the result of a huge collaborative effort with ESC National Cardiac Societies," says Professor Panos Vardas, Chief Strategy Officer of the European Heart Agency.

Data from the 2017 edition of Atlas were recently published focussing on comparing high-income and middle-income ESC member countries—important inequalities in disease burden, outcomes and service provision were identified.<sup>1</sup> The prevalence of risk factors, such as hypertension and smoking, was lower in high- versus middle-income countries and these inequalities were thought likely to have contributed to the higher CVD mortality in middle-income countries. Considerable inequalities in treatment facilities were also observed and countries where declines in coronary mortality were most pronounced were generally those with the best facilities for providing the most advanced contemporary care. "Little wonder that middle-income countries generally have a higher prevalence of CVD and mortality compared with high-income countries," says Professor Vardas.

Interestingly, the data showed that unequal health outcomes were not always an inevitable consequence of limited economic resource. For example, in some middle-income countries, e.g. Bulgaria and Turkey, reported rates of cardiac catheterisation and coronary stenting compared favourably with the best high-income countries. Professor Adam Timmis, first author of the 2017 Atlas

data analysis, states: "Atlas makes clear that economic resources are not the only driver for delivery of equitable cardiovascular healthcare, some middle-income ESC member countries report rates for interventional procedures and device implantations that match or exceed rates in wealthier high-income member countries."

Declines in CVD mortality have seen cancer becoming a more common cause of death in a number of high-income member countries, but in middle-income countries declines in CVD mortality have been less consistent and CVD remains the leading cause of death.

Clearly, Atlas provides valuable insights into the inequalities surrounding CVD and its treatment across ESC member countries and the findings will be relevant to many other countries around the world allowing international benchmarking of cardiovascular risk factors, disease prevalence, healthcare delivery and outcomes. With a greater understanding of current European CVD statistics and the enhanced ability to predict future trends, Atlas will help identify targets for reducing the burden of CVD and delivering equitable healthcare across Europe. "Now that we've got Atlas off the ground, it is a unique opportunity to highlight

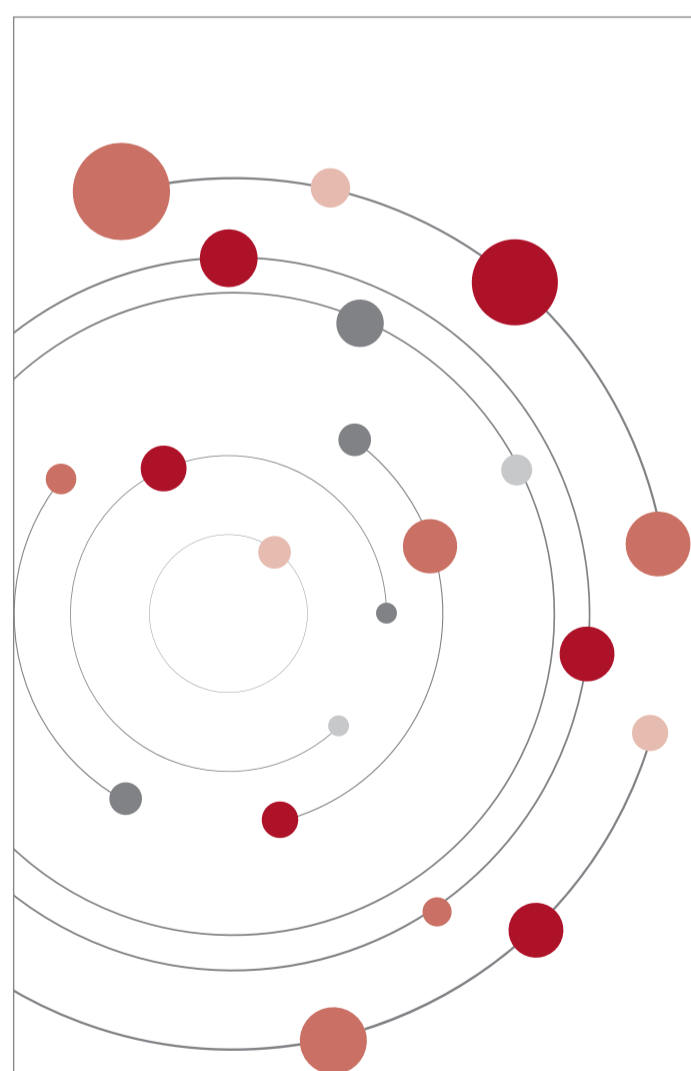
disparities among our member countries and to promote effective implementation of guidelines, ultimately looking to reduce the healthcare gaps, to improve the accessibility of novel therapies to patients and much beyond to reduce the burden of CVD across Europe," concludes Professor Vardas.

1. Atlas Writing Group. Eur Heart J 2018;39:508-579.



### Don't miss!

ESC ATLAS of Cardiology: statistics on cardiovascular disease and care  
Today, 13:30 - 15:00; Bach - The Hub



## Join the ESC today

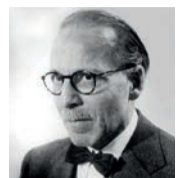
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## Franz Groedel: The German who co-founded the American College of Cardiology



**Prof. Franz Groedel**

**Professor Franz Groedel was a pioneer of cardiac radiology, electrocardiography and scientific hydrotherapy, and co-founder of the American College of Cardiology (ACC).**

After receiving his medical degree from the University of Leipzig in 1904, Franz Groedel started his career helping to expand the diagnostic use of X-rays in Friedrich von Müller's clinic in Munich.<sup>1</sup> In 1906, Prof. Groedel joined his father, also a physician, working in his hometown of Bad Neuheim at a spa specialising in the treatment of cardiac patients. During the next few years, Prof. Groedel carried out much of his important early work on the use of X-rays to evaluate heart function and size, inventing the first machine for taking serial X-rays in 1909.<sup>1</sup> Later, as Professor of Radiology at the University of Frankfurt, Prof. Groedel actively supported Bruno Kisch and Arthur Weber who founded the German Cardiac Society in 1927.<sup>2</sup>

On succeeding his father as head of a private rehabilitation clinic, Prof. Groedel formed a close friendship with William Kerckhoff, an American millionaire who brought his family to the spa at Bad Nauheim. In 1929, with a generous donation from Kerckhoff's widow, Prof. Groedel set up a cardiology research and treatment centre, the William G. Kerckhoff-Heart Research Institute, which eventually became the model for similar heart centres around the world<sup>1,2</sup>

Following Hitler's rise to power, Prof. Groedel, considered Jewish because of his mother's religious background, was forced to flee Germany and arrived in New York City in 1933. Philip Reichert, an American radiologist trained at Cornell University and the Rockefeller Institute, built Prof. Groedel a device to map the electrocardiogram from multiple sites on the chest wall, enabling him to continue his research on the pathways of cardiac impulse conduction.<sup>2</sup>

Prof. Groedel became President of the Rudolf Virchow Medical Society in 1943 and then the New York Cardiological Society in 1949.<sup>1</sup> Envisioning an organisation with a wider national scope dedicated to the continuing education of physicians and scientists, he founded the ACC in 1949 along with his assistant Max Miller and Reichert. Joined in 1950 by Kisch and others from the New York Cardiological Society, who became the founding trustees of the ACC,<sup>2</sup> Prof. Groedel was appointed the ACC's first President and Reichert its Secretary. Tragically, in October 1951 during preparations for the first scientific meeting of the ACC, he sustained a fatal skull fracture. Kisch succeeded him as President and the meeting that Prof. Groedel had been preparing for, but sadly did not live to see, was hailed a major success.<sup>2</sup>

**Had he been alive today, Prof. Groedel would certainly be very proud of his legacy.**

1. Fye WB. Clin Cardiol 2000;23:133-134.  
2. Lüderitz B, et al. J Am Coll Cardiol 2013;61:802-807.



### Out and about in Munich

Bavarian hospitality is one big hearty reason why visitors flock to Munich from all over the world. After a busy day at the congress, relax in the leafy shade of one of Munich's many Biergartens (beer gardens) that date back over 200 years or seek out the cosy atmosphere of a traditional tavern or Wirtshaus. Savour famous cuisine, such as Weißwürste (white veal sausage), Schweinshaxe and Knödel (roasted pork knuckle with dumplings), Leberkäse (a loaf-formed sausage) or Obatzda (cheese spread) with Brezl (pretzel), washed down with world-renowned Bavarian beer. Munich's beer heritage is almost as old as the city itself—locals have been brewing 'liquid bread' here for 3,000 years.

It's easy to enjoy the traditional foods and drink of Munich, thanks to the 'walkable' nature of the city. Major sights and attractions are within walking distance and can be easily reached from the congress centre and hotels by the extensive public transportation system of underground (U-Bahn) and suburban trains (S-Bahn), trams and buses. So while in Munich, we do hope you get chance to sample its famous foods and Bavarian beer—prost!

**Moscow - Village 5**  
Saturday, August 25, 2018  
15:30 - 16:45

#### Satellite Symposium

# Optimized heart failure care throughout the patient journey

#### Chairpersons:

**M. Cowie**  
(UK)

**P. Seferovic**  
(Serbia)

#### Speakers:

**M. Böhm** (Germany)

**J. Howlett** (Canada)

**B. Pinto** (India)

**C. Yancy** (USA)

**M. Yilmaz** (Turkey)

#### Don't forget the Satellite Symposium Experts on the Spot

Chairperson: **A. Maggioni** (Italy)

Speakers: **A. Coats** (UK), **J. Gonzalez Juanaler** (Spain)

New opportunities for treating heart failure through fixed-dose combinations

**10:15-10:45** Sunday, August 26, 2018  
Bach – The Hub

Organized by

