‘Europe’ just got bigger: new ESC President looks to still wider horizons

Logical, cost-efficient handling of resources and a friendly embrace of all those countries that look to Europe for education and training in cardiovascular medicine—this is the ‘leitmotiv’ of the new music-loving president of the ESC, Professor Michel Komajda, reports Barry Shurlock, PhD

As a young boy growing up in the vicinity of Paris, Professor Michel Komajda, MD, FESC, was for several years sent off in the summer to the UK for a month or two to mingle with the natives and speak the language. The process, which was earnestly arranged by his parents, was less than perfect, as many of his confrères were French. Then he went to medical school and for many years had to focus on his career in France. It was only in 1996, when he was appointed to the ESC Working Group on Heart Failure, that he fully realized the limitations of his youthful holidays, and decided to improve his English by taking lessons for 2 h a day. The linguistic outcome was (and is) amazing and must, to some extent, explain why he was recently installed as the ESC President for 2010–12, at the annual congress in Stockholm. But what else does someone need to reach such a pinnacle in their profession, what do they think they can achieve in 2 years, and what is their SWOT analysis (strengths, weaknesses, opportunities, threats) of the ESC?

Now Chef du Pôle Coeur (Head of the Heart Centre), responsible for all cardiology and cardiac surgery at the Pitié-Salpêtrière Hospital, Paris, he says he never expected to be elected ESC President, but is greatly honoured by the post and acknowledges with gratitude the support he has had from many ESC colleagues. He ascribes his success as much to the ‘play of chance’ as his own efforts, though his CV shows all the signs of steady progress through the ESC ranks, starting with his membership and fellowship in 1989. Throughout this period, he was, of course, pursuing his career in France, where he rose from being a member of the French Society of Cardiology in 1988, to its President in 2002. Then for 2 years, he chaired the ESC Congress Programme Committee, responsible for two of the most successful meetings ever held by the Society, namely, ESC Annual Congress Stockholm in 2005 and the joint meeting with the World Congress of Cardiology in Barcelona,
2006. He recalls: ‘I really enjoyed my term chairing the scientific committee. It was a very demanding job, but on the other hand I so much enjoyed making new contacts. For me this was the moment when I said to myself: “The ESC is great!”’.

Speaking more broadly of his hopes and ambitions as ESC President, he said: ‘I want to maintain and extend links of the ESC with its constituent bodies, including the 53 national societies, and the affiliate societies, which go far beyond “Europe” as a geographical area. I want to strengthen these links, whilst bearing in mind the heterogeneity and differences in culture between, say, Western Europe and North Africa. And I think we must look more towards central and eastern Europe’.

Emphasizing that the influence of the ESC does not stop at the borders of Europe, he sketched the opportunities for drawing in cardiovascular specialists from a wider area of the world. He said: ‘The ESC enjoys a very high quality of educational products, which we need to take to other areas, such as Asia and the Pacific rim, South America and Africa, where I think we are perceived as “good friends”. It is in the interests of the ESC to export its products to countries in these parts, and to build good peer relationships. [Recently] we created the ESC Global Scientific Activities Committee, which I chair, with the aim of designing a full programme over 18 months of one-day meetings to be held in various countries. The first one will be in Beijing, China, in October 2010, then Saudi Arabia in February 2011, Malaysia in Kuala Lumpur, May 2011, and Brazil, Porto Allegre in September 2011’.

The presidency of his predecessor, Roberto Ferrari, saw many changes in the organization of the ESC, which Komajda intends to continue.

**Ferrari (left) and Komajda, ESC Congress 2008, Copyright ESC**

He said: ‘There was a need for change, because the ESC was growing very fast. The internal organization needed to be realigned and we need to continue with the new CEO to be more logical and more cost-efficient. It’s a long-term process - and people hate change! But I strongly endorse what the new CEO has proposed. In the end, we will promote more services at lower or constant costs’.

Like all medical bodies at the present time, the ESC faces challenges on two main fronts, namely, the world economic crisis, and growing political support—led by the USA—for restrictions on financial backing by industry of medical meetings and the like. He said: ‘Unless there is a collapse of the currency, I am not sure that the current economic crisis is the main threat to the ESC. There is no sign whatsoever that there is any slowdown of innovation in [cardiovascular medicine], which remains a fast-moving specialty. My concern would be rather that industry would not be able to lay out so much money in the future. We will therefore see a change in our business model, which has been based on support from industry. Probably we will see new EU bye-laws, which oblige us to consider new sources of income. I foresee that EU and national laws will restrict the subsidizing [by industry] of educational initiatives and we will therefore need to turn [for funding] either to individuals or government bodies. The best defence for the ESC is the high quality of our products and total neutrality. Our credibility, as ever, depends upon giving balanced medical messages for the good of patients - based on the fact that we have always made a clear separation between academic programmes and industry-sponsored sessions in our meetings, and that we have always expressed independent scientific and professional views’.

Like most leaders, Komajda is strong on policy and direction and has a firm view of where he and his board members can take the ESC over the next 2 years. During this time, he has pledged to work hand in hand with his successor, President-Elect Professor Panos Vardas, Head of the Department of Cardiology at the University of Crete, Heraklion, Greece. He comments: ‘Ferrari shared all his decision processes with me and I will do the same with my successor, so that mid-term objectives are maintained. Continuity is the key to success and it implies a very close collaboration between the President, the Past President, and the President-Elect. Two years is a very short time and to do otherwise would be doomed to failure! The fact that 92% of members voted for their choice of board members is a measure of their commitment and vitality. And the geographical origin of members is balanced, which is important. Perhaps 10 years ago, most ESC board members came from what George Bush called “Old Europe” but that has now changed, which is very good. There is also proper representation of the various subspecialties and working groups’.

As well as directing overall policy, Komajda has a number of specific priorities on his action list. He wants to develop an ESC ‘research foundation’ that has the capacity to facilitate translational research initiatives, via a networking system that can help to bring together individuals and research groups from different ESC countries. He is also keen to maintain momentum in the Euro Observational Research Programme started under Ferrari, which aims to provide a clear picture of the treatment of cardiovascular diseases throughout Europe. And he wants to make the ESC more web-savvy, in order to maximize the potential of remote electronic products (such as websites, webcasts, and DVDs) for education, certification, and revalidation, with the ESC providing materials for national use. Another area in which he acknowledges more involvement of the ESC is the role of nurses in the management of cardiovascular disease. He comments: ‘Already in some countries - particularly in Scandinavia - nurses play a big role. I can’t see why they should not be more involved in the management of chronic diseases, especially in the context of an ageing population and a decline in the numbers of doctors. I am
concerned that at the moment we have no nurse on the board of the ESC. One of my first moves will therefore be to ask the board to appoint a nurse ex-officio’.

As he returns from what he terms his ‘last vacation’ for the next 2 years, he recoils at the thought that the ESC presidency will be a full-time occupation: ‘Certainly not! My hospital, my university, and my colleagues would not allow it and it is good to keep a link with your professional roots! But it will take a substantial amount of my time - I estimate about 50%. It is my intention to involve even more Board Members in ESC activities, with [clear] identification of deliverables and timelines. Having a group of highly committed colleagues around me will certainly facilitate my task. Also, the Heart House in Nice is easy for me to reach from Paris, so I will be able to do it in a day. My wife has mixed feelings - she is very happy for me, it’s a sort of peak in my medical career, but she realises the price to pay. I will try to maintain my personal and professional activities, but it will be challenging. I suspect that my time for my main interests of swimming, music and reading will be severely shortened. I shall be reading fewer novels and more ESC papers!’.

In the 1980s the ‘caretakers’ of the EHJ did not yet know if it would survive or thrive

Language issues, competing journals, shortage of submissions, and an acceptance rate of ‘about 80%’—Professor Desmond Julian, the founding editor of the European Heart Journal, tells Barry Shurlock, PhD, of the challenges of the early years

History often touches sensitive issues. It may be obvious in hindsight, but a major reason why the European Society of Cardiology (ESC), founded in 1949, took 30 years to the start of the European Heart Journal (EHJ) was because Europe’s polyglot cardiovascular professionals could not agree on language. By 1979, it was the difficulty of persuading the French that the sole language of any journal should be English, which delayed events. Recalling the time, founding EHJ editor, Professor Desmond Julian, who steered the journal through its first decade, says: ‘I think there was a change of culture. I remember being asked to chair an ESC panel in 1976 at the meeting in Amsterdam and I wrote to all the participants saying that the language would be English. Two French panelists wrote back to say they could not speak in English - it was something to do with not being able to claim expenses abroad unless they spoke in French. By 1980, when the ESC meeting was in Paris, it had changed and it was all in English’.

Another problem faced by the ESC was that its preferred title, the European Journal of Cardiology, had already been taken and was being published in Utrecht under the editorship of Professor Frits Meijler. Julian remembers that there was the possibility of the ESC taking over this journal and making it its own, but negotiations faltered when the publishers refused to pay secretarial costs. It was ESC board member Professor Peter Harris, who then moved the process forward by taking the idea to Academic Press in London, who offered a favourable contract. The new editor wanted to call the journal simply Heart—a title later taken by the British Heart Journal, which wanted to take the ‘British’ out of its name—but, with the reverse logic, the ESC wanted ‘Europe’ in the title, so the EHJ was born. Asked why he thinks he was chosen to edit the journal, Julian, whose textbook Cardiology is now in its eighth edition, with sales of more than 100,000 copies, says: ‘I think it was because I’d written some books that were very successful and I’d done a lot of clinical trials within Europe, so I knew a lot of people. Also, I was a keen European—though eventually I became President of the British Society of Cardiology - but I was not a linguist’.

In fact, Julian was one of the leading clinicians of his generation. The distinguished cardiologist Professor Eugene Braunwald has placed one of Julian’s contributions among the 10 most important developments in cardiovascular medicine, namely, the coronary care unit (CCU). In a paper published in The Lancet in 1961, Julian pointed out, many people with coronary heart disease died in hospital because they were in various wards, staff were not trained in cardiac resuscitation, and the appropriate equipment...
was not to hand. ‘My colleagues were not interested in the idea and I had to go to Sydney to [set up the first CCU], where I spent 3 years. By 1962 there were also 2 units in the United States and 1 in Canada’.

A major problem of the EJH in its early days—and one faced by all new journals—was to secure a steady supply of manuscripts. Today, the EJH receives about 3500 submissions a year and has the luxury of accepting no more than 20%. But Julian recalls a very different situation in 1980: ‘We knew that a new journal was not going to attract the best papers, but the ESC board—and particularly Paul Hugenholtz—was extremely supportive in giving us their own papers and encouraging others to publish with us. Initially the circulation was very small - around 2,000 copies - and there was therefore no advertising. At my suggestion we tried to improve things by linking the journal with the ESC Congress, making a composite fee for the meeting and the subscription. But that was for a year only, as the President did not agree with the idea though it made an enormous difference. One of the most interesting features of these early years was that the quality of English varied immensely! I had to decide whether to edit it all to make it conventional English - but eventually I decided that if it was understandable, though not perfect idiomatic English, I would let it go.’

For the early issues of the EJH, Julian, who was then Professor of Cardiology at the University of Newcastle upon Tyne, UK, reviewed most of the papers himself, but soon set up an extensive panel of referees. Many of the early numbers were accompanied by special supplements, based on educational meetings hosted by pharmaceutical companies. He says: ‘These were terribly important from a commercial point of view. But then again because the circulation was very small - around 2,000 copies - and there was therefore no advertising. At my suggestion we tried to improve things by linking the journal with the ESC Congress, making a composite fee for the meeting and the subscription. But that was for a year only, as the President did not agree with the idea though it made an enormous difference. One of the most interesting features of these early years was that the quality of English varied immensely! I had to decide whether to edit it all to make it conventional English - but eventually I decided that if it was understandable, though not perfect idiomatic English, I would let it go.’

Publisher Anne Greenwood, who is now Group Managing Director of the Science Navigation Group in London, recalls the early days of the EJH. She worked in the journals’ production department of Academic Press, in the Camden Town district of London, housed in a building that had once been a gin distillery. She says: ‘Academic Press, were trying to build their list in medicine, and were thrilled to get the contract for the European Heart Journal - it was a feather in their cap and I and my director, Joan Fujimoto [now Mrs St Leger], worked very hard to give a good service, though at the time the company made most of its money from two other journals, the Journal of Molecular Biology and the Journal of Vibration and Sound. It was exciting, as a junior editor, to see the proofs of the first issue come off the press’.

She visited the print company, Henry Ling, which was 100 miles (150 km) away in Dorchester, the county town of Dorset, UK. This was one of the places where in 1685 several English judges—notable Judge Jeffreys—had sat at the ‘Bloody Assizes’, making judgments that sent thousands of men to the gallows or transportation to the West Indies. Their crime had been to take part in the Monmouth Rebellion, a disastrous insurrection aimed at overthrowing the Catholic king of England, James II. Anne Greenwood recalls: ‘I remember reading EJH proofs in the very room where the Bloody assizes had been held! The supplements that EJH attracted were very important. I used to get these wonderful trips out of the office, to places like Bordeaux, where I remember sitting below the podium, collecting the manuscripts, editing them on site with the help of [EHJ deputy editor] Professor Roger Hall and sending them off to the printer for typesetting. I worked with lots of ‘larger than life’ cardiologists and in general I found them very strong leaders’.

Julian too looks back at the birth of the EJH with some satisfaction: ‘It’s fantastic to see that it’s so successful now. I’m delighted! I’m rather sad that I couldn’t see the success in my day, but at the time “Europe” was not the great thing it has become now. We were essentially interested in clinical research as opposed to basic science. Most of the papers were of a good quality, but not earth-shattering. We could never get any of the big trials - they all went to the Lancet or the New England Journal - and still do! As the editor, my main task was trying to bully people into writing papers. One advantage was that there was a very good chance of getting something published, probably about 80%. A paper was generally accepted unless it was written in impossibly bad English’.

Heart Failure Pilot protocol

The first experience of the EURObservational Research Programme is discussed by the five authors below

The new programme of registries and surveys of the European Society of Cardiology (ESC) was started in August 2008 and named the EURObservational Research Programme (EORP). The aim of this new programme is to provide a better understanding of cardiology practised in Europe, based on data collected with a robust methodology procedure, and to establish a professional research centre based at the European Heart House.

As described previously by the President of the ESC, Roberto Ferrari, in CardioPulse (European Heart Journal 2010;31:1023–1031), the EORP includes three different study models:

1. general registries/surveys: to assess the management of diseases whose incidence has a major impact on public health;
2. sentinel registries/surveys: to assess the impact of new tools, therapeutic and diagnostic procedures/processes;
The Heart Failure Pilot is the first experience of the new EORP and obviously belongs to the above type 1 registries/surveys. The study is conducted by the Heart Failure Association, and the National Cardiology Societies of the participating countries are involved in the overall process of preparation and performance of the survey, whose protocol is summarized here.

Chronic heart failure (HF) is associated with a high burden of mortality and morbidity, reduced quality of life, and increasing healthcare costs in Europe and across the world. Evidence-based medicine represents the most effective way of ensuring that patients receive high-quality care and appropriate pharmacological/non-pharmacological management. With the increasing age-related prevalence of chronic HF, there is a concomitant increase in the number of related hospitalizations, and, as chronic HF progresses, the risk of acute exacerbation increases. Acute HF is a complex, heterogeneous clinical syndrome characterized by a rapid onset of signs and symptoms secondary to abnormal cardiac function, and it is often life-threatening, requiring urgent therapy. In the USA, a primary diagnosis of acute HF accounts for more than one million hospitalizations each year, with similar numbers suggested for Europe. Advances in diagnosis and therapy are limited, and patients with acute HF continue to have a poor short- and long-term prognosis. Clinical destabilizations leading to hospitalization are associated with haemodynamic and neuro-hormonal alterations which can contribute to progressive ventricular dysfunction and dilatation, mitral regurgitation, increased wall stress, and progressive myocyte loss, as a result of apoptosis and necrosis. Registries and surveys have been conducted in patients with acute and chronic HF, but a description of the whole clinical story of patients with HF including the acute episodes and the consequent changes in the clinical conditions and in the management strategies are not available. A survey able to capture all the relevant clinical information of patients with chronic HF including their acute episodes of decompensation would allow us to improve our knowledge about the epidemiology and the outcomes of real-world patients with this clinical condition. The Heart Failure Pilot study has been planned along these lines.

The Heart Failure Pilot study is a prospective, multicentre, observational survey of patients presenting to about 200 cardiology centres in 12 European countries selected to represent the different health systems and care attitudes across Europe. Site selection in each country made by the relevant National Society targets a mix of hospitals of different levels of complexity from different health systems and care attitudes across Europe. The focus is on capturing a broad spectrum of cardiology and HF specialty units which regularly follow outpatients with HF and admit patients with acute, pre-existing or new onset HF, in order to build up a network of centres representative of the European reality. This includes a balanced proportion of centres with more or less complete availability of cardiology facilities. Twelve countries have been selected on the basis of previous performance in the Euro Heart Survey programme and their geographical distribution is as follows:

- four Western Europe (Austria, France, Germany, the Netherlands);
- two Eastern Europe (Poland, Rumania);
- three Southern Europe (Greece, Italy, Spain);
- three Northern Europe (Denmark, Norway, Sweden).

The National Societies of these countries were requested to select a defined number of centres (one centre/2 million people, but no more than 25 and no less than 6 per country) to participate in the survey. As far as possible, the centres should respect geographical criteria within each country. The ratio for a country contributing 25 centres was:

- 5 centres with cardiac surgery;
- 8 with interventional cardiology (PCI/CRT/ICD);
- 12 community centres with no surgery or interventional cardiology.

Further, the National Societies identified a responsible person in each country to be the National Coordinator and a member of the Steering Committee of the study.

The EORP Department at the European Heart House was appointed to coordinate the operation of the project, provide support to the Committees, National Coordinators, and participating centres, and secure the methodological concepts of the survey. The database has been set up at the European Heart House, according to the requirements defined by the appointed Executive Committee with the support of the EORP Department.

The National Coordinator in conjunction with the local investigators was responsible for obtaining the approval of the local and national review boards for this survey, if necessary. All patients have been approached by the local centre investigator and asked for their written informed consent to participate in the survey (if necessary, i.e. based on local standards).

For this specific Pilot phase, patients have been enrolled for 1 day per week for 8 consecutive months (October 2009 to May 2010) and followed up for 1 year.

The primary objective of the HF survey is to describe the clinical epidemiology of outpatients and inpatients with HF and the diagnostic/therapeutic processes (including the organization of HF management programmes) applied to these patients across Europe.

The collected diagnostic and therapeutic interventions are those currently performed at each centre for patients presenting with signs and symptoms of acute HF/chronic HF. Drug prescriptions and the indications to perform diagnostic/therapeutic procedures are completely left to the decision of the participating cardiologists. In particular, the following information details are recorded for each enrolled patient: demographic characteristics, risk factors for cardiovascular diseases, co-morbidities, precipitating factors of acute HF, clinical signs and symptoms, biohumoral profile, use of pharmacological/non-pharmacological treatments, use of invasive/non-invasive diagnostic procedures, in-hospital outcome for patients hospitalized. Outpatient visits at 3, 6, and 12 months have been scheduled for all outpatients and for patients discharged after an admission for acute HF. The Heart Failure Pilot phase was also specifically aimed at validating structure, performance, feasibility of this observational study, and quality of the data set, with the intention of continuing the survey into a permanent registry.
Beginning October 2009, all outpatients with HF seen at the clinics and those admitted for acute, pre-existing or new onset HF to participating centres during the enrolment period were included in the registry. Data have been collected after detailed information is given to the patient and a signed informed consent obtained.

At the beginning, a minimum of 2000 patients were estimated to be needed either to have a solid enough experience to judge the quality of the study and the possible need of operational changes to the protocol, or to obtain a preliminary profile from continental Europe, of both, acute and chronic HF patients according to the collected information listed above.

By 31 May 2010, more than 5000 patients have been enrolled in the Heart Failure Pilot and the baseline characteristics for all admitted patients and the in-hospital outcomes for those admitted for acute HF will be presented at the ESC Congress in Stockholm. Starting from October 2010, a permanent HF registry involving all European countries will be started, using the advantage achieved from the Pilot phase experience and making the final data set flexible enough to introduce new emerging issues.

Climbing the academic ladder in cardiology: Switzerland

Small but perfectly formed and functioning

Switzerland is a small country with just five chairs in cardiology, but the high standard of living means most Swiss cardiologists want to stay in the country

In Switzerland, cardiology has a common trunk of 2 years of internal medicine and 4 years of cardiology, followed by the board examination. The 4 years of cardiology can be spent entirely on clinical work or can include 1 year of research.

Then there are three career paths: private practice; working as a junior staff member responsible for cardiac patients at a private hospital; or an academic career in an academic centre.

Requirements for the third path vary by centre. The Cardiovascular Center, University Hospital Zurich, where EHJ editor Professor Thomas F. Lüscher, FRCP, FESC, FACC, is Professor and Chairman of Cardiology, recommends that Fellows do 2 years of basic training in research before they start clinical training. During their clinical education, they will then be equipped to participate in studies and by the time they have their board examination, their CV will include research experience and publications.

After the board examination in cardiology, when Fellows will be 30–32 years of age, Lüscher recommends going abroad for 2 years to gain further research training in places like the USA, the UK, Canada, and Germany. On their return, the aim is to find a staff position in a university department.

In general, university trainee cardiologists with research publications and on recommendation from the department chairman, will get a grant to go abroad, either from the Swiss National Science Foundation (SNSF) or from other foundations. Industry also provides fellowships, particularly for research on devices.

In the Swiss system, the first position on the academic ladder is private lecturer, which people receive once they have written a thesis (habilitation). Private lecturers are not members of the faculty. The faculty positions are assistant professor, associate professor, and full professor.

There are not many assistant professorships. Lüscher explains: ‘This is a much more prestigious position here in Switzerland than in the US system where assistant professor is anybody that has finished training and is above instructor level’.

Setting up a laboratory is challenging but grants are available from the SNSF for clinical investigators which pay a salary for 2–5 years. The Ambizione programme, for example, pays a junior researcher’s salary for 3 years and can be extended for 1 year. The grant includes project funds which can be used to employ support staff.

SNSF professorships provide a salary at the assistant professor level and a contribution to research and infrastructure costs. Grants are for 4 years and can be extended by a maximum of 2 years.

Dr Gabriela M. Kuster Pfister, MD, research group leader at the Department of Biomedicine and clinical cardiologist at the Division of...
of Cardiology of the University Hospital Basel, is being supported by an SNSF award called SCORE (Swiss Clinicians opting for Research), which is aimed at MDs who want to become independent investigators. The grant covers her salary and contributes to research costs (personnel and consumables) for 3 years, with a possible 2-year extension.

Gabriela Kuster Pfister

People with the grant are supposed to spend 80% of their working time on research. Other grants often fund the research but the salary is paid for by the hospital, which means that clinical work must take priority.

For Kuster, receiving the award has been ‘paramount’ in her career. ‘It’s the most important step I have taken so far because it gives me the privilege for these 5 years to spend the time I need to do the research’.

As a mother of two, she says that a career in academic medicine including cardiology gets difficult when you start a family. But improvements are on the way. Basel has a mentoring promotion programme for women led by Professor Regine Landmann, a clinician scientist in infectious diseases. ‘She mentors women to find transitions from step to step and be able to go on with a career while starting a family and raising children’, says Kuster.

The SNSF’s Marie Heim-Vögtlin Programme, which is named after the first Swiss female doctor in medical sciences, is aimed at women scientists whose scientific career was delayed or interrupted when they had children or had to move because of their partner’s career. Funding is given for 2 years, with a possible 1-year extension.

Switzerland is a small country and there are just five chair professorships in cardiology, which makes it difficult to get a top position. And there are three main languages—German, French, and Italian—with different cultures to accompany them.

But the high standard of living means that, in general, Swiss cardiologists want to stay in the country. There are interesting positions at the associate professor level and there are chairs in cardiology at large non-university hospitals.

When one of the five chair professorships becomes available, a search committee which usually includes two external experts proposes three names, ranked in order of preference, to the faculty and board of directors of the university.

In today’s environment where hospitals want to attract patients and therefore income, chairs of university cardiology departments must be excellent clinicians. In most cases, they are interventional cardiologists or electrophysiologists. Geneva’s basic scientist is an exception. Candidates are also evaluated on how much they have published, impact factor, and how much funding they have generated.

Switzerland is usually among the top-ranked countries in terms of citations per scientist, which indicates that the system promotes the best people. But there are areas where improvements could be made.

There are not enough positions at the assistant professor level, which is why Lüscher’s department has used donations to create such professorships in arrhythmia and vascular biology research. A 6-year position requires 1.5–2 million Swiss Francs.

There is also a difficult period between the ages of 34–40 when grants are needed for promising young people, which give them protected research time, plus clinical obligations. The combination would enable them to develop as clinician investigators and become opinion leaders in their field internationally while maintaining and expanding their clinical experience.

Lüscher’s advice is to focus on one subject where you want to make a contribution to science. He tells his Fellows: ‘One has to find out what you really like, where you’re excited, because only when you find the theme of your life are you going to have success internationally’.

Jennifer Taylor, MPhil, Journalist.
Cardiovascular disease and metabolism products at Hoffmann-La Roche

Despite its worldwide reputation as a leader in cancer and transplantation products, biotechnology company Roche has a long history and a bright future in cardiovascular medicine. Helen Jaques finds out more about the company’s pharmaceutical and diagnostic products for cardiovascular disease and metabolism

Company structure

Swiss multinational F. Hoffmann-La Roche Ltd is one of the world’s largest biotech companies, employing more than 80,000 people and selling products in over 150 countries. The company was founded on 1 October 1896 by Fritz Hoffmann-La Roche, heir to an old textile manufacturing and merchant family in Basel, Switzerland.1 The company is still headquartered in Basel, where much of the cardiometabolism research also takes place. Roche also has major research centres around Europe—such as in Burgess Hill, the UK, and Mannheim, Germany—and the USA.

Roche is at the forefront in developing drugs for cancer and transplantation. However, the pharmaceuticals division also has a long history in developing drugs for cardiovascular disease. In the 1980s and 1990s, for example, the company developed several key cardiovascular drugs that are now sold as generic agents, such as the ACE-inhibitor cilazapril and the beta-blocker carvedilol.

Roche also sees the future of its pharmaceuticals division in cardiometabolic medicine, contrary to the approach of other companies. ‘We are going a little bit against the stream,’ says Dr Anders Svensson, head of global clinical development for cardiometabolism in the pharmaceuticals division. ‘Where most other companies are reducing their efforts in cardiovascular and metabolic areas and focusing on cancer, we, as the world’s leading cancer company, are actually diverting resources and putting a lot of resources into research in the metabolic cardiovascular area’.

Roche currently has two cardiovascular compounds in phase III development. The first phase-III agent Roche is developing is dalcetrapib, an inhibitor of cholesteryl ester transfer protein. Statins reduce levels of low-density lipoprotein cholesterol in patients with cardiovascular disease, but there is currently no well-tolerated pharmacological means to address levels of high-density lipoprotein (HDL) cholesterol, which is thought to have protective effects on the heart. Dalcetrapib addresses this need: the agent increases circulating levels of HDL cholesterol.

‘We aim with this product to bring a clinically meaningful reduction in cardiovascular events beyond and above the best current standard of care,’ says Fouzia Laghrissi-Thode, global product strategy head for cardiometabolism and anaemia. ‘This could really transform medicine,’ agrees Svensson. ‘It could be like when statins were first introduced. It’s the next step, it could be huge’.

Moving on to metabolic diseases, patients with type 2 diabetes are at least twice as likely to develop cardiovascular disease as with individuals without diabetes. ‘We know that what really brings diabetic patients down is the macrovascular and cardiovascular complications—heart attacks, strokes—which can lead to premature death,’ confirms Svensson. ‘So we are aiming to develop new anti-diabetic drugs that address other risk factors like lipids, blood pressure, or body weight’.

Roche hopes that its second phase-III agent aleglitazar, a dual peroxisome proliferator-activated receptor α/γ (PPARα/γ) agonist, will not only provide glucose control in patients with diabetes, but also lower cardiovascular risk factors such as triglycerides and low-density lipoprotein cholesterol and raise HDL cholesterol.

Phase II data published last year in The Lancet showed that aleglitazar significantly reduced glycosylated haemoglobin concentrations compared with placebo in patients with type 2 diabetes and had the desired effect on lipids. Roche is now recruiting 6000 patients for a phase III trial to determine whether once-daily aleglitazar also reduces the incidence of cardiovascular mortality, non-fatal myocardial infarction, and stroke in patients with type 2 diabetes.

Roche also has a diabetes agent in phase III development: taspo-glutide,2 a weekly injectable glucagon-like peptide 1 analogue drug for patients with type 2 diabetes that cannot be managed with oral anti-diabetic medications. This agent likewise has the potential to
reduce cardiovascular events in patients with diabetes in addition to improving glycaemic control.

Besides research and developing pharmaceutical agents, Roche also invests heavily in biotechnology, and, thanks to its 2009 takeover of biotechnology company Genentech, it is the world’s largest biotechnology company. The diagnostics division of Roche is the world’s leading supplier of in vitro diagnostics, holding a 20% share of the global in vitro diagnostics market in 2009.

Genentech San Francisco

Cardiovascular medicine likewise represents a key business area for the diagnostics division. ‘Roche has a full menu of cardiovascular products available on a variety of laboratory based platforms, [as well as] outside of the laboratory in the emergency room or other critical area of a hospital and in physicians’ offices,’ says Bernd Schnakenberg, senior vice president and head of decentralized solutions at Roche Diagnostics’s headquarters in Rotkreuz, Switzerland.

Aerial view of Roche Diagnostics Ltd, Rotkreuz

The diagnostics division of Roche is made up of several smaller areas that focus on a wide range of products, from reagents and test kits for the research market to automated diagnostic systems for the pathology market.

Roche Professional Diagnostics, which makes point-of-care testing devices and automated solutions for the laboratory, is one such area. By providing rapid, easily interpreted, accurate testing devices and automated solutions for the laboratory, is systems for the pathology market.

The accuracy of this product is a key selling point. ‘With our cobas h 232 point-of-care system, the key parameters for cardiac care are all standardised against Roche laboratory methods, providing excellent comparability between point-of-care and laboratory testing,’ says Schnakenberg. Furthermore, a study by Roche has found that point-of-care testing for troponin T, D-dimer, and NT-proBNP in the physician’s office increased the number of correctly diagnosed cardiovascular conditions from 60% by clinical judgement alone to 76%.

The second key point-of-care device for cardiovascular disease is the Accutrend Plus system, which measures circulating levels of several lipid risk factors—cholesterol, glucose, triglyceride, and lactate. The device produces results on cholesterol in 180 s, triglycerides in 174 s, lactate in 60 s, and glucose in an impressive 12 s.

Accutrend is particularly aimed for use in primary care; for example, in general practitioners’ offices, pharmacies, or patients’ homes. However, its lactate-determining feature also makes it well suited to measuring tissue hypoxia in acute care situations.

Finally, the various hand-held CoaguChek systems are for measuring PT/INR values in patients on anticoagulation therapy. The CoaguChek XS system is for patients to measure their own prothrombin time, whereas the CoaguChek XS Plus and Pro systems are for primary care and hospitals, respectively. By keeping an eye on PT/INR values, doctors and patients can stay within the narrow ranges needed for safe anticoagulation therapy and thus reduce haemorrhagic strokes and other bleeding.

With this broad range of diagnostic products and a raft of pharmaceutical products in the last stage of development, combined with the company’s continued emphasis on cardiovascular medicine despite market trends, it looks like Hoffmann-La Roche has a bright future in the cardiovascular disease and metabolism market.

References
Fast facts: hypertension

Hypertension remains one of the major treatable risk factors for stroke, myocardial infarction, and heart failure. Effective management of hypertension to reduce morbidity and mortality is therefore of the utmost importance. Despite intensive attempts to increase the awareness, the rates of optimal treatment and control of hypertension remain low.

Since the first edition of this handbook in 1998, several new aspects on epidemiology, diagnosis, and treatment of hypertension have been implemented into multiple international guidelines on diagnosis and treatment of arterial hypertension. With its latest fourth up-to-date edition, this concise handbook gives an excellent overview about the most recent developments and recommendations in the field of hypertension.

It starts with two sections on dangers and causes of hypertension. The two authors present the latest definitions of hypertension according to international guidelines, describe the most common direct and indirect damaging effects of hypertension, and end each section with short tables of key points and key references. They divide the causes of high blood pressure into genetic and environmental (modifiable, showing data of treatment trials) but also explain the most common secondary and identifiable causes.

In the third section, on investigations, they give excellent advice on how to measure blood pressure and what to investigate to assess subclinical organ damage for optimal individual cardiovascular risk stratification.

The recommendations in the three following sections on treatment are based on the most important randomized clinical trials, with a short discussion of trial results. There is a strong focus on non-pharmacological treatment of hypertension, including the most recent development on food labelling in the USA and UK. A structured overview on pharmacological treatment is followed by the sections on special populations, such as pregnant women, the elderly, and children. The handbook ends with the topic of uncontrolled hypertension, which is being recognized as an increasing problem during the last few years.

Overall, this concise handbook on arterial hypertension offers a well-structured approach to the diagnosis and treatment of hypertension, including most recent data from international guidelines.

Dr Matthias Hermann, FESC, Consultant Cardiologist, Zürich University Hospital.