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VIEWPOINT

Education and certification on heart failure of the Heart Failure Association of the European Society of Cardiology

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Introduction

Heart failure (HF) is a devastating chronic and disabling disease with a wide variety of pharmaceutical and device treatment options which are becoming increasingly complex to implement. According to the Heart Failure Association (HFA) Atlas, a subspeciality resource aimed at sourcing contemporary data concerning the epidemiology and healthcare resources for HF, HF is prevalent in 17.20 patients per 1000 persons, accounting for 2671 HF hospitalizations per million inhabitants annually in Europe.[1] HF patients also suffer from a high prevalence of non-cardiac comorbidities, which adds complexity to their HF treatment and can negatively impact prognosis.[2] As a result, HF-related healthcare expenditure continues to rise, and healthcare organizations are becoming faced with the impossible challenge to provide the necessary financial and logistical support to this growing number of patients. In order to address these challenges, the HFA recently outlined the development of quality of care centres (QCC), in order to encourage multidisciplinary management of HF that will improve quality of care and survival.[3] However, there remains a significant unmet need to train sufficient multidisciplinary teams lead by HF specialists to take care of this expanding group of HF patients. In order to ensure that the next generation of medically-qualified HF specialists will receive high-quality training, this consensus statement of the HFA outlines the requirements for a European training and certification programme for such specialists. The primary goal of this comprehensive educational programme is to increase the quality of patient-centred care related to HF.

Rationale for structured heart failure training

Adherence to international guidelines on the diagnosis and treatment of HF remains inadequate. This not only leads to a delayed (and often missed) diagnosis of HF, but also underutilization of life-saving and quality of life improving therapies. As such, there is an urgent need to develop standardized training programmes for physicians and other HF care providers to improve the quality of care of HF patients. However, these training programmes should also be individualized to tailor to the need of the participant as there is considerable heterogeneity in the resources spent on HF amongst different countries and not all HF health care professionals need similar amount of training as the encounters with HF patients differ amongst subspecialties (i.e. nurse, general practitioner, general cardiologist, HF specialist).[3] Importantly, these training programmes will also involve in-depth training in multidisciplinary HF care. Finally, advanced ad-hoc HF training programmes should also provide structured opportunities for trainees to gain competence in cardiac rhythm and device management, cardiac imaging, mechanical circulatory support and cardiac transplantation. Surely, training in advanced HF in accredited centres applies not to every HF trainee but only to those interested in advanced HF patient management.

Current advanced heart failure training in Europe

The current HFA Specialist Heart Failure Curriculum for physicians and nurses cannot as yet be fully implemented in all European countries.[4,5] Furthermore, the HFA considers that the accreditation of QCCs will be essential to improving the provision of dedicated HF care and that appropriate patient-centred training programmes are needed for healthcare professionals working in these centres.[3] Embedding QCCs into the existing healthcare institutions will enable education tailored to the specific requirements of healthcare professionals at different levels of care (from primary to tertiary levels). This will also increase availability and access to educational sites dedicated to training in HF management in accordance with specific requirements of national healthcare systems. QCCs will have trained and experienced personnel, and equipment required to provide onsite, up-to-date training in various aspects of HF management. Regional and international networking among QCCs will facilitate exchange of knowledge and skills that will further advance educational efforts.

The completion of the HFA programme is accredited by the United Kingdom (UK) and Israel as an official HF specialization programme. However, the accreditation as a HF specialist in individual countries remains within the jurisdiction of the local authorities. As such, complete implementation of the 2-year HFA specialist curriculum outside of the UK and Israel has been scarce.

The University of Zurich together with the HFA had developed a post-graduate course in HF management (PCHF) which started in January 2014.[6] However, this course does not as yet fully satisfy the growing need for post-graduate training and certification and newer university-based courses are under development.

Pyramidal structure of heart failure education and certification endorsed by the Heart Failure Association

The comprehensive HFA educational programme is designed for different levels of training and it will serve the continuous and growing needs of the individual and team-based healthcare physicians treating patients with HF. The HFA education and certification programme will involve different European universities, some of which may be structured in consortia, ensuring quality control and wider accessibility. Education and certification will be closely linked with individual certification and QCCs (*Figure 1*). While most educational courses of layer 1 + 2 do not officially require a basic set of skills, it will be specified on the registration page of HFA which requirements might be needed to enter an educational course. As such, this document outlines the HFA structure of education linked to certification. Importantly, the *European Journal of Heart Failure* and *ESC Heart Failure* are the two journals of HFA, which are dedicated to the advancement of knowledge in the field of HF management and are considered to be essential educational resources.

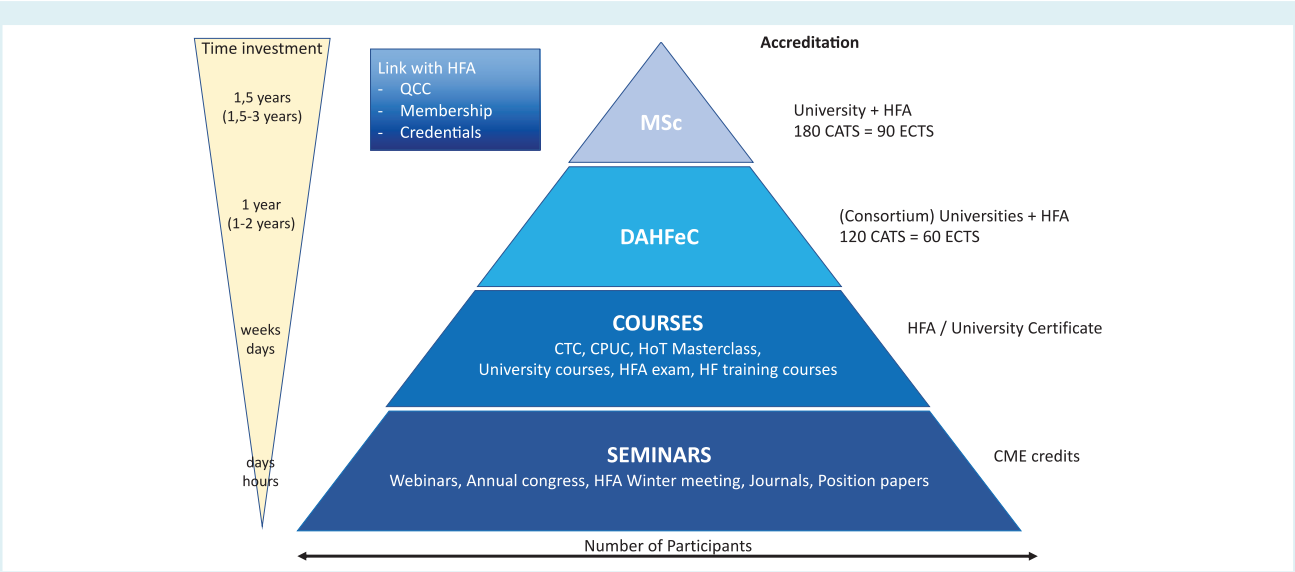

Figure 1 Heart Failure Association (HFA) education and certification. CATS, Credit Accumulation and Transfer Scheme; CME, continuing medical education; CPUC, Clinical Practice Update Course; CTC, Clinical Trial Course; ECTS, European Credit Transfer and Accumulation System; HF, heart failure; HoT, heart failure specialists of tomorrow; QCC, quality of care centre.

Layer 1: Heart failure seminars

Webinars

Webinars are live 60 min digital HF training opportunities which are often case-based and interactive and provided by recognized HF experts allowing participants to send questions to the panel. Webinars are based on the HFA curriculum and provide updates from major international scientific meetings' content. Multiple choice questions are available throughout the live session to encourage interaction and validate learning achieved. Webinars are also available on-demand after the live event, allowing viewers to watch in their own time. On-demand webinars are a great resource to review specific topics but lack interactivity on a personal level. They have provided important educational tools in particular during COVID-19 time when frontal education has been not possible. Webinars are UEMS-CME accredited. Attendance to the ESC/HFA webinars is essential for the annual appraisals and continuous education in HF. It is expected that HF specialist and trainee will attend these webinars that are free for HFA members.

HFA congress

The HFA congress is a yearly recurrent 3-day event which includes state-of-the-art lectures, debates on live cases, practical workshops, and scientific abstract presentations, to cover all aspects of HF management. The HFA congress is UEMS-CME accredited, and can be used to provide evidence to support professional appraisal and revalidation. The HFA congress is the flagship HFA event and the largest global HF congress. Attendance (both online or in presence) to the HFA congress is part of the required accredited hours of continuous learning for the HF specialist.

HFA Winter Meeting

The HFA Winter Meeting is the leading basic and translational research meeting worldwide and provides a forum for discussion on basic and translational research as well for presentation of the latest discoveries in preclinical and translational research. Attendance (both online or in presence) to the HFA Winter Meeting is part of the required accredited hours of continuous learning for personnel of HFA accredited care and research centres at least biennially.

HFA position papers

The HFA publishes yearly position and consensus documents on clinical relevant topics which also help to improve HF care.

HFA endorsed meetings

These are meetings organized by the national HF societies/associations/working groups and the HFA. These meeting must include a session jointly organized with the HFA and the meeting programme should be validated by the HFA. Participants will receive credits from the organizing Society depending on the format and duration of the course.

Layer 2: Heart failure courses

HFA exam

The HFA exam is for professionals specializing in HF. This is a milestone for HF specialists to enhance their career path. It assesses the basic knowledge in HF which is set out by the Heart Failure Specialist Curriculum. Study material is the upcoming HFA Textbook of Heart Failure (Oxford University Press 2022),

annual HFA congress, as well as the HFA guideline and consensus documents. The HFA Clinical Practice Update Course (CPUC) may also serve as a preparatory course for the exam.

The exam is currently organized in an online format and consists of 100 multiple choice questions focused on theoretical knowledge as well as case-based trouble shooting. The exam can also be organized by National Societies and/or Associations worldwide under HFA supervision. However, the content and format of the exam should be completely in line with the high current standards set for the HFA exam. It is foreseen that, in the near future, participants will be able to take the exam in certified test centres worldwide. HF certification demonstrates the achievement of a high level of knowledge in your profession. Successful candidates will receive a certification of completion of the knowledge-based component of the Heart Failure Curriculum.

HFA Clinical Trial Course

The Clinical Trial Course (CTC) is a yearly recurring intensive in-person/online course focused on clinical trial design, interpretation, conduct and analysis. Novel and promising concepts for the understanding and treatment of HF can be developed at the crossroads of experienced experts, trialists, and young engaged clinicians (including future HF specialists). The course includes practical sessions on registries and meta-analyses. It is organized in a unique interactive atmosphere that favours the exchange of novel ideas, mentoring and motivation sessions. The course is aimed at all HF specialists who may wish to conduct high-level scientific research in HF. The CTC is UEMS-CME accredited and participants receive an HFA certificate.

HFA Clinical Practice Update Course

The CPUC is a 2-day in-person/online review course of HF. Faculty includes world experts in the field of HF. The course offers a comprehensive update in HF which serves as an intensive review on all aspects of HF, as well as for preparation for the HFA Certification exam. The course includes plenary interactive sessions focused on application of guidelines in daily practice, review of relevant clinical trials, in-depth discussion of clinical cases as well as troubleshooting. All participants can follow the plenary sessions covering a broad range of topics in HF as well as the case-based sessions. On-site participants also engage in focused 'how-to' and 'do-it-yourself' sessions in small groups to suit their needs and further interact with the faculty. The HFA CPUCs can also be organized in collaboration with regional extra-EU societies in order to widen the reach of HFA education. The HFA CPUC is UEMS-CME accredited and participants receive an HFA certificate.

HF specialists of tomorrow heart failure masterclass

The HF specialists of tomorrow (HoT members) are the HF specialists in the early stages of their career (<40 years). The HoT initiative facilitates networking with peers interested in the field of HF, working in different countries and in different positions (cardiologists, nurses, research scientists, physiotherapists, etc.). The HF masterclass is an annual online educational 5-h teaching programme developed by the HoT members in close collaboration with the HFA board. The HF masterclass is UEMS-CME accredited and participants receive an HFA certificate.

University courses

These are university courses organized by a single university or by a group of universities in collaboration with HFA. Participants may also receive a post-graduate degree from the organizing university depending on the format and duration of the course. Courses which are already accredited by HFA include:

- PCHF, Royal Brompton and Harefield, London, UK
- HF masterclass course from the University of Brescia, Italy

Specific heart failure educational training courses

The HFA certified courses on device management, imaging, acute HF, secondary prevention and rehabilitation will be organized on annual basis and will be UEMS-CME accredited. The first of this training courses is the SAVIC (Acute Heart Failure Advanced Life Support), a one-day workshop on acute HF care, developed by the Portuguese and Brazilian Societies of Cardiology.

Layer 3: Diploma of Advanced Heart FailurE Care

Objectives

The Diploma of Advanced Heart FailurE Care (DAHFeC) will be an interactive, practical, innovative, postgraduate HF diploma course organized by a university or by a consortium of universities which will increase the knowledge and clinical skills of the participants allowing them to integrate advanced HF care through a multidisciplinary approach. This diploma will constitute the first layer of a university certification in HF. The learning objectives of DAHFeC are in line with the core curriculum of the HFA. The course should provide university credits (120 Credit Accumulation and Transfer Scheme [CATS] credits = 60 European Credit Transfer and Accumulation System [ECTS] credits) based upon theoretical courses and practical training. Participants will need to spend 1200 h of study/work equal to 1 year of training which can be spread over 2–3 years to fulfil the DAHFeC objectives.

Practicalities

The theoretical course, which should account for at least 40 CATS/20 ECTS, will be organized in eight different modules according to the HFA curriculum + 4 weeks of practical multidisciplinary HF training, over a period of 2 years, under the supervision of HFA and the collaborating universities, ensuring quality control also at university level. The modules of DAHFeC can be provided by one or more universities and practical training can be carried out at HFA certified centres. It is anticipated that the number of universities which will deliver such learning modules will increase over time ensuring that there will always be sufficient places for new interested physicians to participate in the diploma course. While

universities have their own stringent quality control mechanisms, the HFA will require a validation by the Education Committee of the HFA of a university approved course.Participants will be encouraged to follow the course in-person to promote interaction and to provide hands-on learning, although it will be possible to follow part of the course remotely. Further hands-on training opportunities will be provided through clinical traineeship in an HFA accredited HF centre. The course will match the demand with regard to capacity, which means that no candidate fulfilling the requirements to enter the course will be left out in the future.

The practical training should account for at least 80 CATS/40 ECTS and can also be followed in the participants' own institution. The emphasis during this training period is on improving multidisciplinary HF care through direct patient contact. Additional training will also include research methodology, service delivery, shared decision making, quality metrics, quality improvement, 'softer' skills such as negotiation, business planning, etc., which are essential skills for HF specialists. In addition, personalization of care and shared decision making will be thought.

To be eligible for enrolment, applicants must be HFA members, and either board-certified cardiologists, internists or geriatricians or must have completed at least 2 years of successful clinical training in cardiology with a primary interest in HF management.

Certification

After completing the course and successfully passing the exam(s) organized by the participating universities in collaboration with HFA, participants will receive a post-graduate diploma of the university or by the consortium of universities and by the HFA.

In brief, participants will receive 120 CATS credits which is equal to 60 ECTS credits which are equivalent of a full year of study or work. These credits are a tool developed by Higher Education Bodies to make studies and courses more transparent. Therefore, the ECTS/CATS credits overcome differences between national higher education systems concerning the recognition of qualifications and mobility periods abroad. ECTS/CATS credits represent learning based on defined learning outcomes and their associated workload. It is a central tool in the Bologna Process, which aims to make national education systems more comparable internationally. ECTS (CATS) has been adopted by most of the countries in the European Higher Education Area as the national credit system and is increasingly used elsewhere. As such, it helps participants to move between countries and to have their academic qualifications and study periods in recognized European Academic Centres.

Layer 4: Master of Science in Heart Failure

The highest level of HF education is the Master of Science (MSc) degree in HF. The first HFA-endorsed MSc HF programme is already ongoing at St. George's University of London, UK. This MSc-HF postgraduate course has been developed as a hybrid course with online modules, webinars and lectures and with eight face-to-face encounters over a 2-year period encompassing the entire spectrum of HF diagnosis, management and interventions and it will include a scientific research project.

Participants of MSc HF degrees will be required to spend at least 1200 h of work/study as either full time or part-time plus a thesis that will count for 600 h of work/study to fulfil the MSc course requirements counting up to 180 CATS or 90 ECTS. The exam(s) needed to pass the MSc course will be organized by the universities in collaboration with the HFA. It will consist of a continuous evaluation together with exam(s).

Conclusion

An extensive continuous easily accessible HFA educational programme tailored to participants' needs will help to reduce regional and national disparities in the accessibility and quality of HF care. It will also help to develop more 'high quality care' centres, delivering optimal services in partnership with patients and the healthcare systems. It will strengthen the five pillars of HFA activities through increased membership, enhanced advocacy, intensified education, innovative research, and greater participation in the annual HFA congress. As such, the combination of education, centres of high-quality care, and accreditation should enable us to achieve to reach the over-riding mission of the HFA, namely, to reduce the burden of HF through the provision of high quality, evidence-based, multidisciplinary HF management across Europe.

Conflict of interest: none declared.

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