

Evidence Brief: Cardiology

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Produced by the Knowledge Management team Evidence Briefs offer an overview of the published reports, research, and evidence on a workforce-related topic.

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Evidence Brief: Cardiology

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- [Complete Evidence Brief list – link for Workforce, Training and Education staff](#)
- [Complete Evidence Brief list – link for External staff](#)

Key publications – the big picture

[Broken hearted: a spotlight paper on cardiovascular disease](#)

Author(s): Chris Thomas

Source: Institute of Public Policy Research

Publication date: February 2024

See p. 16 "More capacity, better management"

Progress on cardiovascular disease (CVD) was a significant driver of better population health and greater prosperity in the latter half of the 20th century. However, progress has recently stalled – with indications it may be in reverse. This is likely down to policy choices made in the last 15 years, particularly since the global financial crisis, above and beyond the more recent impact of the Covid-19 pandemic (Bambra and Marmot 2023). Had the rate of preventable mortality from CVD in the UK improved between 2011 and 2019 at even half the rate of improvement observed in the five years previous, we would expect around 33,000 less deaths from this cause in 2019.

[National Cardiac Audit Programme \(NCAP\)](#)

Source: Nicor

Publication date: 2024

The report covers the 12 months from 1 April 2022 to 31 March 2023 and explores what could be potentially important post-pandemic shifts in the demand for cardiovascular services, how these are provided, and the variability experienced in different locations. NCAP now includes 11 cardiovascular audits and registries, eight of which provide results to this 2024 report.

[Physiological science networks: a development framework](#)

Source: NHS England

Publication date: May 2023

Physiological sciences play an essential role in supporting patients and clinicians in the diagnosis, assessment and treatment of health issues across the whole life span.

These services (summarised in figure 1 below) are delivered through eight main disciplines: audiology; cardiac physiology; gastrointestinal (GI) physiology; neurophysiology; ophthalmic and vision science; respiratory and sleep physiology; urodynamics; vascular science.

[Heart Disease: understanding the future service and workforce need](#)

Source: Health Education England

Publication date: 2023

It is for this reason a workshop consisting of key national stakeholders from NHSE and HEE came together to discuss how the future service should be shaped for heart disease, and what the workforce needs should be, taking into account the emerging opportunities systems can play in delivering this. This report provides an overview of the discussions from the day, identifying what the collective short-medium and long-term actions need to be at all levels in addressing workforce challenges for heart disease aligned with emerging service priorities and needs.

[The distribution of doctor quality: evidence from cardiologists in England](#)

Source: Institute for Fiscal Studies

Publication date: August 2022

There is widespread and unexplained variation in the outcomes of similar patients across place and providers in all developed health systems. This paper provides new evidence on the role senior doctors play in determining patient outcomes. I exploit within-hospital quasi-random assignment of patients to senior doctors following a heart attack to estimate the effectiveness of individual doctors, and to estimate returns to experience for these doctors. 28% of doctors work in multiple hospitals over a 13 year period, enabling the separate identification of doctor effects from hospital effects or observable patient characteristics. I find that a standard deviation increase in doctor quality reduces

mortality rates over the next year by 3.6 percentage points, or 25% of mean mortality. There are relatively modest returns to specific experience, with mortality reductions from a standard deviation increase in the physician's 3-year caseload equivalent to around 6% of a standard deviation in permanent doctor quality. Estimating the effectiveness of each physician when treating patients with specific diagnoses, I analyse potential mortality reductions from reallocating doctors across patients. I find that mortality could be reduced by 8% by reassigning doctors within-hospital to patients on the basis of their comparative ability to treat each patient type. These results suggest that substantial improvements in patient outcomes could be achieved by reallocating existing senior staff resources.

Cardiology digital playbook

Source: NHS England Transformation Directorate

Publication date: July 2021

This resource provides support to clinical teams and organisations that are looking for digital tools that support the delivery of patient pathways. We concentrate on cardiology pathways and how to deliver monitoring and support to patients. We welcome feedback on the playbooks, including ideas for further case studies. To get in touch, please email digital.playbooks@nhs.net

GIRFT National Report for Cardiology

Author(s): Dr Sarah Clarke and Professor Simon Ray

Source: British Heart Rhythm Society

Publication date: February 2021

The GIRFT report for cardiology focuses on reducing clinical variation and supporting cardiology services to work more flexibly through clinical networks. This includes reinforcing clinical pathways and improving access to imaging/diagnostics (via community diagnostic hubs) shaped by function and local need.

Heart Failure: A call to action

Source: Alliance for Heart Failure

Publication date: 2021

A review of the 2016 'Focus on Heart Failure' recommendations to improve care and transform lives

Transforming elective care services cardiology

Source: NHS England

Publication date: 2019

This handbook is for commissioners, providers and those leading the local transformation of cardiology elective care services. It describes what local health and care systems can do to transform cardiology elective care services at pace, why this is necessary and how the impact of this transformation can be measured. It contains practical guidance for implementing and adopting a range of interventions to ensure patients see the right person, in the right place, first time.

Case Studies

GIRFT National Report for Cardiology

Author(s): Dr Sarah Clarke and Professor Simon Ray

Source: British Heart Rhythm Society

Publication date: February 2021

See p. 23 "Delivering a streamlined Acute Coronary Syndrome service with ACP-led discharge of patients"

p. 27 "Implementing a consultant of the week model"

p. 28 "Using extended roles to deliver a more efficient cardioversion service"

p. 39 "Delivering cardiac rehab services through a social enterprise model"

p. 46 "Seven-day cardiac physiology services: a tertiary centre model"

p. 57 "Using an MDM to prioritise patients for surgery during the Covid-19 pandemic"

p. 60 "Using new technology to manage demand across cardiology pathways"

p. 61 "Pharmacist-led integrated services"

The Star for workforce redesign

More resources and tools are available in [the Star](#)

Statistics

You can find relevant statistics on the [Health and Care Statistics Landscape](#)

National Data Programme

Workforce, Training and Education staff can look at the [National Data Warehouse \(NDL\)](#) SharePoint site to find out more about datasets and Tableau products.

Published Peer Reviewed Research

Advanced Practice

Conference abstract: The impact of a novel advanced clinical practitioner (ACP) - physician hybrid clinic model on specialist cardiology outpatient clinic services within a busy tertiary cardiac centre and how it compares to the traditional physician-led model

Author(s): Dimitrov et al.

Source: Heart 109(Suppl 3)

Publication date: 2023

[UK]

Introduction Advanced Clinical Practice (ACP) is an established structured university training programme available to registered non-medical healthcare professionals preparing them to safely manage clinical patient care incorporating complex clinical decisions and high degree of autonomy. Aim To assess the service impact, safety and efficiency of a clinical cardiology pharmacist with ACP training providing a sustainable, holistic and independent clinical care to non-predefined cohort of patient within a consultant-led cardiology clinic environment. Methods A pharmacist-prescriber undertaking ACP course within a tertiary cardiac centre autonomously reviewed randomly selected patients, face-to-face or virtually, in two consultant-led outpatient cardiology clinics, interventional and heart rhythm clinic, twice weekly over 12-month period. Clinical examination, diagnostic skills and IRMER training were completed prior to commencing. Data was collected from each clinic capturing number of patients reviewed, time spent per patient and consultation outcomes. Clinical decisions made for every patient were timely discussed with the relevant consultant to assess the safety of this service concept. Results A total of 358 patients were reviewed: 217 (60.6%) in the heart rhythm and 141 (39.4%) in the interventional cardiology clinic, 86 (24%) were newly referred, 196 (54.7%)

were routine follow-up patients and 76 (21.3%) were booked for their first post-intervention cardiology outpatient review. Mean number of patients reviewed per clinic was 6.03 (+/-1.63) with 17.7 (+/-2.4) minutes spent per patient. Outcome data revealed 227 (63.4%) had further diagnostic tests organised, 127(35.5%) had their medications optimised, 63 (17.6%) were discharged, 44 (12.3%) patients were referred to a different specialist and 38 (10.6%) were referred for elective cardiac intervention e.g. coronary angiography, DCCV, or catheter ablation. No patients were admitted to hospital directly from clinic. 16 patients (4.5%) had their plan changed following consultant oversight safety discussion. Over the 12-month period ACP total discharge rate was 14.3% compared to 14.7% ($p=0.88$) by consultant, in the heart rhythm clinic and 22.7% compared to 50% ($p<0.01$) by consultant and 27.9% ($p=0.32$) by other senior cardiology specialist physicians, in the interventional cardiology clinic. Average clinic capacity increased by 26% ($p<0.01$) and 8.7% ($p<0.01$) respectively compared to the preceding year. Conclusion Our ACP-Physician Hybrid Clinic model is a safe, efficient and sustainable service that allows effective management of cardiology outpatients within a tertiary cardiac centre. It demonstrates that an ACP pharmacist can apply their ACP training programme derived skillsets to make safe and appropriate clinical decisions supporting the cardiac services. This model may improve the use of NHS staff resource and patient access to specialist services.

Advanced Practice Nursing in Cardiology: The Slovak Perspective for the Role Development and Implementation

Author(s): Halász et al.

Source: international Journal of Environmental Research and Public Health 18(16)

Publication date: August 2021

[Slovakia]

Background: Cardiovascular diseases (CVDs) are the number one cause of death globally. Most can be prevented by addressing behavioral risk factors, where advanced practice nurses- clinical specialists in cardiovascular nursing play a fundamental role. This modern and effective role is based on advanced activities, knowledge, skills, and experience in a specialized field, which can make a significant contribution to solving the problems of these civilization diseases. The aim of this work is to explore the self-perception of advanced-practice nurses (APNs) working in cardiology and vascular medicine departments within the context of advanced-practice nursing. Methods: This quantitative exploratory study included 103 APNs working in cardiology and vascular diseases departments of specialized hospitals in Slovakia. A validated instrument was used. Results: The overall perception was at the level of 68.01%. The highest-rated domain was the outcomes for patients/clients, and subdomains were meeting the needs, education of healthcare workers, and quality in relation to management. There was a significant difference found among hospitals with a better scoring of specialized institutions. Conclusion: There have been promising advances due to the current legislation in Slovakia defining APNs and specialists' competencies. However, the practice in nursing for CVD patients remains fragmented, uncategorized and less valued by stakeholders and the public. According to the results, nurses have the potential and preparedness for this role in the context of their knowledge and skills in general. The Authors conclude that there is a need of such specialization of APNs in Slovakia.

Effectiveness of the Advanced Practice Nursing interventions in the patient with heart failure: A systematic review

Author(s): Ordóñez-Piedra

Source: Nursing Open 8(4) pp. 1879-1891

Publication date: March 2021

Rationale and Aim: Advanced Practice Nurse (APN) is a specialist who has acquired clinical skills to make complex decisions for a better professional practice. In the United States, this figure has been developed in different ways, but in some European countries, it is not yet fully developed, although it may imply a significant advance in terms of continuity and quality of care in patients with chronic or multiple pathologies, including cardiac ones and, more specifically, heart failure (HF). The follow-up of HF patients in many countries has focused on the medical management of the process, neglecting all the other comprehensive health aspects that contribute to decompensation of HF, worsening quality indicators or patient satisfaction, and there are not updated reviews to clarify the relevance of APN in HF, comparing the results of APN interventions with doctors clinical practice, since the complexity of care that HF patients need makes it difficult to control the disease through regular treatment. For this reason, this systematic review was proposed in order to update the available knowledge on the effectiveness of APN interventions in HF patients, analysing four PICO questions (Patients, Interventions, Comparison and Outcomes): whether APN implies a reduction in the number of hospital readmissions, if it reduces mortality, if it has a positive cost-benefit relationship and if it implies any improvement in the quality of life of HF patients.

Design and Methods: A systematic review was performed based on the PRISMA statement, searching at four databases: PubMed, CINAHL, Scopus and Cuiden. Articles were selected based on the following criteria: English/Spanish language, up to 6 years since publication, and original quantitative studies of experimental, quasi-experimental or observational character. Papers were excluded if they do not comply with CONSORT or STROBE checklists, and if they had not been published in journals indexed in JCR and/or SJR. For the analysis, two separate researchers used the Cochrane Handbook form for systematic reviews of intervention, collecting authorship

variables, study methods, risks of bias, intervention and comparison groups, results obtained, PICO question or questions answered, and the main conclusions. Results: A total of 43,754 patients participated in the 11 included studies for the development of this review, mostly from United States and non-European countries, with a clearly visible lack of European publications. Regarding the results related to first PICO question, researches reviewed proved that APN implied a reduction in the number of hospital readmissions in patients with heart failure (up to 33%). Regarding the second question, mortality was always lower in groups assisted by APN versus in control groups (up to 7.8% vs. 17.7%). Regarding the third question, APN was cost-effective in this type of patient as the cost reduction was eventually calculated in 1.9 million euros. Regarding the last question, quality of life of patients who have been cared for by an APN had notoriously improved, although one of the papers concluded that no significant differences were found. All the questions addressed obtained a positive answer; therefore, APN is a practice that reduced hospital readmissions and mortality in HF patients. The cost-effectiveness is much better with APN than with usual care, and although the quality of life of HF patients seems to improve with APN, more studies are needed to support this focused on this.

Peer workers (people with personal experience of mental health problems) are increasingly being employed in mental health services in England. The aim of this research was to find out if the international evidence available is useful for developing new peer worker roles in England.

Bullying and Culture

Bullying in UK cardiology: a systemic problem requiring systemic solutions

Author(s): Camm et al.

Source: Heart 108(3)

Publication date: 2021

[UK]

Objectives: Bullying of trainee doctors has been shown to be associated with detrimental outcomes for both doctors and patients. However, there is limited evidence regarding the level of bullying of trainees within medical specialties. Methods: An annual survey of UK cardiology trainees was conducted through the British Junior Cardiologists' Association between 2017 and 2020 and asked questions about experiencing and witnessing bullying, and exposure to inappropriate language/behaviour in cardiology departments. Fisher's exact tests and univariable logistic regression models were used to describe associations between trainee characteristics, and reports of bullying and inappropriate language/behaviour. Results: Of 1358 trainees, bullying was reported by 152 (11%). Women had 55% higher odds of reporting being bullied (OR: 1.55 95% CI (1.08 to 2.21)). Non-UK medical school graduates were substantially more likely to be bullied (European Economic Area (EEA) OR: 2.22 (1.31 to 3.76), non-EEA/UK OR: 3.16 (2.13 to 4.68)) compared with those graduating from UK-based medical schools. Women were more likely than men to report sexist language (14% vs 4%, $p < 0.001$). Non-UK medical school graduates were more likely to experience racist language (UK 1.5%, EEA 6%, other locations 7%, $p = 0.006$). One-third of trainees (33%) reported at least one inappropriate behaviour with 8% reporting being shouted at or targeted with spontaneous anger. Consultants in cardiology (82%) and other specialties (70%) were most commonly implicated by those reporting bullying. Discussion: Bullying and inappropriate language are commonly experienced by cardiology

trainees and disproportionately affect women and those who attended non-UK medical schools. Consultants both in cardiology and other specialties are the most commonly reported perpetrators.

Education and Training

Medical education and training within congenital cardiology: current global status and future directions in a post Covid-19 world

Author(s): McMahon et al.

Source: Cardiology in the Young 32

Publication date: 2021

[Global]

Despite enormous strides in our field with respect to patient care, there has been surprisingly limited dialogue on how to train and educate the next generation of congenital cardiologists. This paper reviews the current status of training and evolving developments in medical education pertinent to congenital cardiology. The adoption of competency-based medical education has been lauded as a robust framework for contemporary medical education over the last two decades. However, inconsistencies in frameworks across different jurisdictions remain, and bridging gaps between competency frameworks and clinical practice has proved challenging. Entrustable professional activities have been proposed as a solution, but integration of such activities into busy clinical cardiology practices will present its own challenges. Consequently, this pivot towards a more structured approach to medical education necessitates the widespread availability of appropriately trained medical educationalists, a development that will better inform curriculum development, instructional design, and assessment. Differentiation between superficial and deep learning, the vital role of rich formative feedback and coaching, should guide our trainees to become self-regulated learners,

capable of critical reasoning yet retaining an awareness of uncertainty and ambiguity. Furthermore, disruptive innovations such as “technology enhanced learning” may be leveraged to improve education, especially for trainees from low- and middle-income countries. Each of these initiatives will require resources, widespread advocacy and raised awareness, and publication of supporting data, and so it is especially gratifying that Cardiology in the Young has fostered a progressive approach, agreeing to publish one or two articles in each journal issue in this domain.

Paediatric and adult congenital cardiology education and training in Europe

Author(s): McMahon et al.

Source: Cardiology in the Young 32

Publication date: 2021

[Europe]

Background: Limited data exist on training of European paediatric and adult congenital cardiologists. Methods: A structured and approved questionnaire was circulated to national delegates of Association for European Paediatric and Congenital Cardiology in 33 European countries. Results: Delegates from 30 countries (91%) responded. Paediatric cardiology was not recognised as a distinct speciality by the respective ministry of Health in seven countries (23%). Twenty countries (67%) have formally accredited paediatric cardiology training programmes, seven (23%) have substantial informal (not accredited or certified) training, and three (10%) have very limited or no programme. Twenty-two countries have a curriculum. Twelve countries have a national training director. There was one paediatric cardiology centre per 2.66 million population (range 0.87–9.64 million), one cardiac surgical centre per 4.73 million population (range 1.63–10.72 million), and one training centre per 4.29 million population (range 1.63–10.72 million population). The median number of paediatric cardiology fellows per training programme was 4 (range 1–17), and duration of training was 3

years (range 2–5 years). An exit examination in paediatric cardiology was conducted in 16 countries (53%) and certification provided by 20 countries (67%). Paediatric cardiologist number is affected by gross domestic product ($R^2 = 0.41$). Conclusion: Training varies markedly across European countries. Although formal fellowship programmes exist in many countries, several countries have informal training or no training. Only a minority of countries provide both exit examination and certification. Harmonisation of training and standardisation of exit examination and certification could reduce variation in training thereby promoting high-quality care by European congenital cardiologists.

Cardiology training using technology

Author(s): Jun Hua Chong et al.

Source: European Heart Journal 4(15) pp. 1453-1455

Publication date: April 2021

[Global]

Background and significance: The coronavirus disease-2019 (COVID-19) pandemic has had an unparalleled impact on cardiology training worldwide. In the next few sections, we highlight several foundational considerations for building a successful technology-enabled model in the new normal for cardiology training.

The cardiology training needs of general practice-based pharmacists

Author(s): Clarke et al.

Source: International Journal of Pharmacy Practice 29(3) pp. 245-251

Publication date: June 2021

[UK]

Objectives: As the role of the general practice clinical pharmacist (GPCP) evolves, there has been a shift towards patient-facing roles across multiple conditions. This study aimed to measure

the self-reported cardiology training needs of GPCPs. Methods: An online survey was developed. Participants were shown a list of statements on cardiac conditions and medication across seven sub-domains. Participants self-reported their knowledge against each statement using a Likert Scale. Participants were considered to require training in that topic where they had 'disagreed', 'strongly disagreed' or expressed a 'neutral' rating in $\geq 3/7$ areas. Participants were shown a list of single statements around cardiology test result knowledge and clinical assessment skills. Respondents who 'disagreed', 'strongly disagreed' or declared a 'neutral' position with the statement were judged to need training in that topic. Key findings: Seventy-three out of 135 (54%) GPCPs responded. Acute coronary syndrome had the highest training requirement (38/73, 52%) within conditions. Fifty-nine out of 73 (81%) required training on sacubitril/valsartan and 57/73 (78%) with ivabradine. Fifty-four out of 73 (74%) and 44/73 (60%) required training on how to interpret natriuretic peptides and troponin, respectively. Fifty-nine out of 73 (81%), 48/73 (66%) and 55/73 (75%) required training on interpreting ECG, echocardiogram and coronary angiography, respectively. Reduced length of experience in general practice (<2 years) was commonly associated with increased training needs. Conclusions: There are areas of unmet cardiology training needs within GPCPs that require further support. As the GPCP role evolves, discussion is needed with national pharmacy stakeholders to decide how to incorporate this learning into routine training programmes.

Equality, Diversity and Inclusion

Strategies to improve diversity in the nuclear cardiology workforce

Item Type: Journal Article

Authors: Bullock-Palmer, R. P.; Chareonthaitawee, P. and Sciammarella, M.

Publication Date: 2024

Journal: Journal of Nuclear Cardiology 32, pp. 101785 [US]

Introduction: Nuclear cardiology, a field vital to global cardiovascular disease diagnosis and management, faces a challenge in workforce diversity, particularly among physicians and scientists. Potential factors contributing to this diversity deficit include historical barriers, limited exposure, extensive training requirements, unconscious biases, and systemic obstacles that may pose challenges for underrepresented groups in entering this specialized field. In our Journal of Nuclear Cardiology Perspectives paper, we explore these considerations and propose strategies to foster inclusivity. As a dedicated organization of nuclear cardiology, the American Society of Nuclear Cardiology (ASNC) takes a leading role in promoting diversity in the field, with initiatives that underscore a commitment to embracing a diverse array of professionals. We delve into the composition of ASNC's membership and its leadership, highlighting efforts in the Board of Directors and Executive Council. Our examination extends to the Journal of Nuclear Cardiology Editorial Team and the ongoing initiatives of stakeholder organizations such as the Society of Nuclear Medicine and Molecular Imaging (SNMMI), American College of Radiology, American College of Cardiology, and International Atomic Energy Agency (IAEA). This comprehensive analysis informs strategies to enhance diversity and inclusion in the field of nuclear cardiology.

A Novel Facilitated Peer-Mentoring Program: Paving the Way for a Diverse Cardiology Workforce

Item Type: Journal Article

Authors: Fatade, Yetunde A.;Osabutey, Anita;Olakunle, Oreoluwa E.;Crumbs, Tre'Cherie;Okoh, Alexis K. and Ogunniyi, Modele O.

Publication Date: 2024

Journal: JACC.Advances 3(7), pp. 101044

[US]

Mentorship plays a key role in advancing the professional and personal development and research productivity of trainees and early career faculty.^{1,2} Often, underrepresented minority (URM) trainees face the added challenge of finding the right mentors due to the limited pool of diverse mentors, a lack of role models, and training in an inclusive academic environment.^{3,4} Facilitated peer mentorship creates a structure whereby an experienced faculty member or a senior mentor augments peer-to-peer mentoring of mentees with mutual interests in a collaborative academic environment.⁵

Conference abstract: are we there yet? A cross-sectional evaluation of diversity in cardiology society leadership Abstract only*

Item Type: Journal Article

Authors: Katapadi, A.;Pham, N. K.;Ghazal, R.;EHTESHAMUDDIN, FNU;Bawa, D.;Ahmed, A.;Mansabdar, A.;Chelikam, N.;Kabra, R.;Darden, D.;Pothineni, N. V. K.;Gopinathannair, R.;Atkins, D.;Kovacs, R. J. and Lakkireddy, D. R.

Publication Date: 2024

Journal: Journal of the American College of Cardiology 83(13), pp. 2525

[US]

Background Recent studies evaluating medical society leadership, including within the cardiovascular community, have

found that women and minority leaders are few. Current efforts to combat this appear to have a modest effect. We report current cardiovascular society leadership demographics and evaluate whether recent methods to increase diversity have worked. Methods We performed a cross-sectional analysis of the Executive Leadership and Board of Directors of 12 cardiovascular societies annually from 2020 to 2023. Leadership was categorized into Executive, Past Leadership, Operational, Special Roles, and Oversight teams analyzed by gender, race and ethnicity, fellowship training graduation year, and Scopus h-index, all of which were publicly available through online internet searches. Results We analyzed 806 positions from 12 Cardiology leadership societies (Figure 1A) over 4 years. Leadership was primarily composed of Caucasian (71.4%, $p = 0.134$) males (63.8%, $p < 0.001$), who graduated, on average, in 1993 +/- 9.29. There was a difference in leadership positions between gender ($p = 0.664$) and race ($p = 0.271$) that did not change over time (Figure 1B and C). Additionally, neither gender nor race was predictive of any leadership position during any year. Conclusion Addressing disparities in medicine starts with roles of considerable influence and leadership within the field itself. Our analysis suggests more efforts are needed to increase diversity within leadership societies themselves. Formula presented]Copyright © 2024 American College of Cardiology Foundation

Recruiting a Diverse Cardiology Physician Workforce Abstract only*

Item Type: Journal Article

Authors: Snow, Sarah C.;Alhanti, Brooke and Douglas, Pamela S.

Publication Date: 2024

Journal: JAMA Cardiology 9(3), pp. 290–294

[US]

Abstract: Importance: Understanding trends in the representation of women and individuals from underrepresented racial and ethnic populations in cardiovascular disease and cardiovascular subspecialty fellowships is essential to improving the diversity of the cardiology workforce., Objective: To examine changes in the representation of women and underrepresented individuals in cardiovascular disease and cardiovascular subspecialty fellowships over time., Design, Setting, and Participants: This cross-sectional study of trainee sex and race and ethnicity in various training programs from 2008 to 2022 used data from the Accreditation Council for Graduate Medical Education's publicly available online source. Participants included all residents, internal medicine residents, general surgery residents, and fellows in cardiovascular disease and cardiovascular subspecialty fellowships., Main Outcomes and Measures: Percentages of women and Black and Hispanic trainees in these programs were calculated for each year. Mann-Kendall tests were used to determine if changes over the years represented a significant trend., Results: Among the 3320 cardiovascular disease trainees in 2022, 848 (25.5%) were women, and 459 (13.8%) were Black or Hispanic, less than the representation among internal medicine trainees at 43.8% and 15.6%, respectively. However, the percentage of women trainees in cardiovascular disease significantly increased from 17.6% in 2008 ($P = .001$ for time trend) and also increased for interventional cardiology fellowships (from 6.3% in 2008 to 20.1% in 2022; $P = .002$). Over the same period, the proportion of women in general surgery increased from 27.4% to 45.2% ($P < .001$). The percentage of Black and Hispanic trainees in internal medicine significantly increased from 8.6% in 2012 ($P < .001$) while increases in general surgery were not statistically significant (9.7% to 16.1%; $P = .35$). There were also important increases in the percentages of Black and Hispanic trainees in cardiovascular disease (from 8.3% in 2012; $P = .09$) and interventional cardiology (3.8% to 13.4%; $P = .12$)., Conclusions

and Relevance: In this study, the representation of women in cardiovascular fellowships, including interventional cardiology, increased over recent years. While representation of Black and Hispanic individuals is low in all residencies, including cardiovascular fellowships, recent positive trends are important to recognize and provide hope to drive future efforts.

[Moving toward gender equity in the cardiology and cardiovascular research workforce in Germany: a report from the German Cardiac Society](#)

Item Type: Journal Article

Authors: Lerchenmuller, Carolin;Zelarayan, Laura;Streckfuss-Bomeke, Katrin;Gimenez, Maria Rubini;Schnabel, Renate;Hashemi, Djawid;Baldus, Stephan;Rudolph, Tanja K. and Morbach, Caroline

Publication Date: 2023

Journal: European Heart Journal Open 3(2), pp. oead034 [Australia]

Abstract: Aims: Although the share of women in cardiology in Germany is growing steadily, this does not translate into leadership positions. Medical societies play a crucial role in shaping the national and international medical and scientific environment. The German Cardiac Society (DGK) aims to serve the public discourse on gender-equity by systematic analysis of data on gender representation within the society and in Germany., Methods and results: We present gender disaggregated data collection of members, official organs, working groups, scientific meetings, as well as awards of the DGK based on anonymized exports from the DGK office as well as on data gathered from the DGK web page. From 2000 to 2020, the overall number of DGK members as well as the share of women increased (12.5% to 25.3%). In 2021, the share of women ranged from 40% to 50% in earlier career stages but was substantially lower at senior levels (23.9% of consulting/attending physicians, 7.1% of physicians-in-chief,

3.4% of directors). The share of women serving in DGK working groups had gained overall proportionality, but nuclei and speaker positions were largely held by men. Boards and project groups were predominantly represented by men as well. At the DGK-led scientific meetings, women contributed more often in junior relative to (invited) senior roles., Conclusion: Increasing numbers of women in cardiology and in the DGK over the past 20 years did not translate into the respective increase in representation of women in leadership positions. There is an urgent need to identify and, more importantly, to overcome barriers towards gender equity. Transparent presentation of society-related data is the first step for future targeted actions in this regard. Copyright © The Author(s) 2023. Published by Oxford University Press on behalf of the European Society of Cardiology.

[Implementing LGBTQ-inclusive policies for cardiology practice and the workforce](#) Full text available with NHS OpenAthens account*

Item Type: Journal Article

Authors: Poteat, Tonia and Toribio, Mabel

Publication Date: 2023

Journal: Nature Reviews.Cardiology 20(6), pp. 365–366

[US]

Establishing and enforcing LGBTQ-inclusive policies at the national, state and institutional level are essential for advancing health equity and ensuring the highest quality cardiology workforce.

[Representation of Women in Internal Medicine Specialties in North America, the United Kingdom, and Australasia: Cardiology's Outlier Status and the Importance of Diversity](#)

Abstract only*

Author(s): Zaman et al.

Source: The American Journal of Cardiology 185 pp. 122-128

Publication date: December 2022

[US, UK, Australasia]

Decades of research demonstrate the value of workplace diversity. Reports from individual countries show that women are underrepresented in internal medicine workforces. However, large pooled international studies are not available. This study investigates the current representation of women in the internal medicine workforce internationally and identifies specialties in which underrepresentation is evident. Peer-reviewed studies, government reports, and medical association reports were used to determine proportions of specialists and doctors training in internal medical specialties and in comparator surgical specialties. Data were available from Australia, Canada, England, New Zealand, the United States, Wales, Scotland, and Northern Ireland. A total of 380,263 doctors were studied, including 268,822 practicing specialist physicians (also known as attendings or consultants) and 53,226 doctors in internal medicine specialty training programs (also known as residents, fellows, advanced trainees, or specialist registrar trainees). Among practicing physician specialists, the rate of representation of women was 35% (95,195/268,822, $p < 0.001$). Among trainees, the rate of representation of women was 43% (22,728/53,226, $p < 0.001$). Among physician specialties evaluated, cardiology (15%, 4,152 of 27,328), gastroenterology (20%, 3,765 of 18,893), and respiratory/critical care (24%, 5,255 of 21,870) had the lowest representations of women compared with men ($p < 0.001$ for all). Cardiology and particularly the subspecialty of interventional cardiology were clear outliers as the internal medicine specialties with the lowest representation of women at practicing specialist and trainee levels. In conclusion, this study is the largest international study of women in internal medicine specialties. It found that cardiology, gastroenterology, and respiratory/critical care specialties have the most substantial underrepresentation of women. These data are a global call to action to establish

more successful strategies to provide a diverse and representative cardiology workforce.

[Women in procedural leadership roles in cardiology: The Women In Local Leadership \(WILL\) observational study](#) Abstract only*

Author(s): Coylewright et al.

Source: Heart Rhythm 19(4) pp. 623-629

Publication date: April 2022

[US]

Background: Although 50% of U.S. medical students are women, this percentage fails to translate to cardiology. Gender disparities are striking in interventional cardiology (IC) and electrophysiology (EP) and in leadership. Left atrial appendage closure with the WATCHMAN device, as a novel procedure, is a lens into inequities. Objective: The purpose of this study was to identify the characteristics and prevalence of women (1) as early WATCHMAN implanters and (2) in related leadership. Methods: Data were collected on WATCHMAN implanters and hospitals from January 2017 to December 2018. The gender of physicians in leadership positions was identified via survey as Director of IC, Director of EP, and Chief of Cardiology. The Firth logistic model controlling for covariates modeled the rare event of a woman implanter. Results: Data were obtained for 100% of the cohort. Men comprised 97% of implanters (860/886). No differences in subspecialty or implants by gender were observed. There were 414 hospitals performing WATCHMAN: 24% academic, 97% urban, and most medium/large size (94%). EP made up 61% of implanters. Only 4.8% of hospitals had women in selected leadership roles. Women represented <1% of Directors of IC and only 2.6% of both Directors of EP and Chiefs of Cardiology. Hospitals with a woman in leadership had a 4 times greater odds of a woman implanter (odds ratio 4.24; 95% confidence interval 1.16–15.41; $P = .028$). Conclusion: Women are underrepresented in [cardiology](#) procedural subspecialties in the use of novel

technology and in key leadership roles. There was a greater odds of women early implanters of WATCHMAN if a woman led locally. Increasing women in leadership may improve gender diversity through visibility of role models.

[Gender, racial, and ethnic representation of cardiology fellows in the United States, 2014-2020: An underwhelming pace of diversification worsened by the COVID-19 pandemic](#) Abstract only*

only*

Item Type: Journal Article

Authors: Aoun, Mariam;Dekhou, Antonio;Jahshan, Anna and Chinnaiyan, Kavitha

Publication Date: 2022

Journal: Journal of the National Medical Association 114(4), pp. 451–455

[US]

Abstract: INTRODUCTION: Cardiologists serve a diverse population of patients, yet the lack of diversity within the cardiology workforce has continued to persist and does not represent the composition of the patient population in the United States. Although medical schools and internal medicine residency programs have witnessed major improvements in diversity, the field of cardiology has not emulated these patterns., METHODS: Gender, race, and ethnicity data from the graduate medical education supplements published annually in the Journal of the American Medical Association from 2014 through 2020 were analyzed. The effect of the COVID-19 pandemic on the recruitment of female trainees in cardiology was also investigated., RESULTS AND DISCUSSION: Women represented 24.6% of cardiology trainees in the year 2020, which is a minor increase from 21.2% in 2014. The percentage of Hispanic trainees has slightly decreased from 6.90% in 2014 to 6.26% in 2020, while the percentage of Black trainees has only increased from 5.45% in 2014 to 5.50% in 2020. The data demonstrate a clear disparity and a desperate need for

diversification of the cardiology trainee workforce. The COVID-19 pandemic may also exacerbate this lack of diversity in upcoming years due to the reemergence of inequities in social responsibilities between male and female trainees.,
IMPLICATIONS: Strong action must be taken on an institutional level to shift the culture in cardiology to one that is more appealing to women and underrepresented minorities in order to better serve an increasingly diverse population. Copyright © 2022 National Medical Association. Published by Elsevier Inc. All rights reserved.

Women in Cardiology: Role of Social Media in Advocacy

Author(s): Patel and Volgman

Source: Cardiology Reviews 17(2) pp. 144-149

Publication date: March 2021

[US]

Digital and social media have transformed the field of medicine. They are powerful tools that academic and non-academic physicians and healthcare providers are using to influence others, promote ideas, obtain knowledge, disseminate research and communicate with others. The history of advocacy for women in medicine and the role of social media in influencing the choice of women to choose Cardiology as a career and its role in advocacy for Women in Cardiology (WIC) have been reviewed. It has changed the way cardiologists learn, educate, and interact with each other. Social media has proven especially useful in advocating for WIC, but whether it can help improve the numbers of female doctors going into Cardiology remains to be seen. In addition to encouraging women to pursue cardiology, social media has drawn attention to key women's rights issues affecting practicing female cardiologists.

Racism and Cardiology: A Global Call to Action

Author(s): Banerjee et al.

Source: CJC Open 3(12)

Publication date: December 2021

[Canada; UK; UK]

Racism and racial bias influence the lives and cardiovascular health of minority individuals. The fact that minority groups tend to have a higher burden of cardiovascular disease risk factors is often a result of racist policies that restrict opportunities to live in healthy neighbourhoods and have access to high-quality education and healthcare. The fact that minorities tend to have the worst outcomes when cardiovascular disease develops is often a result of institutional or individual racial bias encountered when they interact with the healthcare system. In this review, we discuss bias, discrimination, and structural racism from the viewpoints of cardiologists in Canada, the United Kingdom, and the US, and how racial bias impacts cardiovascular care. Finally, we discuss proposals to mitigate the impact of racism in our specialty.

Lack of Equity in the Cardiology Physician Workforce: A Narrative Review and Analysis of the Literature

Author(s): Keir et al.

Source: CJC Open 3(12)

Publication date: December 2021

The gender and racial diversity in the cardiology workforce in Canada does not reflect that of the population we serve. As social awareness of the principles of equity, diversity, and inclusion rises, our profession must rise to meet the challenges they present. We detail contemporary examples of publication bias in the cardiac sciences literature and describe the factors that led to oversight in the peer-review process. We performed a narrative review to summarize the published literature on equity and diversity among cardiac physicians. We also summarize the challenges faced by women and racial-minority physicians when pursuing and thriving in a career in cardiology, and the systemic barriers to their success. In the past decade, social justice movements have advanced. Professionalism standards are

changing, and awareness and understanding of these advances in terminology is imperative for all physicians. In this review, we summarize key language and concepts, with cardiology-specific examples, and propose a new paradigm of professionalism.

[Gender and career in cardiology—a cross-sectional study](#) Full text available with NHS OpenAthens account*

Author(s): Dettmer et al.

Source: Herz 46(2)

Publication date: March 2021

[Germany and Switzerland]

Background Careers in university medicine are the subject of increasingly critical public discussion in relation to both their overall appeal and gender-related equality of opportunity in this field. Demands by a range of stakeholders to make the general conditions of the German academic system more attractive and fairer [1–3] are supported by numerous academic studies that clearly show action is needed [4–7]. This also applies in particular to clinical cardiology [8, 9]. In addition, the proportion of women as doctors in cardiology has stagnated for many years at approx. 18% although the total proportion of women in human medicine has grown continuously, reaching 58.3% [10] in 2018. Overall, students and graduates of medicine in Germany show a somewhat decreasing interest in a career in research and academia. This is reflected, for example, in the reduced numbers of experimental doctoral theses [11, 12] and in cardiology, in particular, in the numbers of experimental abstracts submitted to the annual German Cardiac Society (DGK) conferences. The most widely discussed factors influencing the interest and (further) pursuit of an academic career relate to structures in the academic system. To date, only a few studies in Germany have more closely examined academic careers in medicine or academic interest on the part of young doctors, and none of them examine the field of cardiology. This study aimed to analyze the core career development of doctors in cardiology and to

illuminate the more fundamental causes for the “cooling out” phenomenon, particularly in relation to women in the profession during their careers [13, 14]. Our findings are aimed at establishing recommendations for promoting the professional career development of doctors in cardiology.

[Sexism experienced by consultant cardiologists in the United Kingdom](#)

Author(s): Jaijee et al.

Source: Heart 107(11)

Publication date: 2021

[UK]

Objectives: The aims were to compare the frequency with which male and female cardiologists experience sexism and to explore the types of sexism experienced in cardiology. Methods: A validated questionnaire measuring experiences of sexism and sexual harassment was distributed online to 890 UK consultant cardiologists between March and May 2018. χ^2 tests and pairwise comparisons with a Bonferroni correction for multiple analyses compared the experiences of male and female cardiologists. Results: 174 cardiologists completed the survey (24% female; 76% male). The survey showed that 61.9% of female cardiologists have experienced discrimination of any kind, mostly related to gender and parenting, compared with 19.7% of male cardiologists. 35.7% of female cardiologists experienced unwanted sexual comments, attention or advances from a superior or colleague, compared with 6.1% of male cardiologists. Sexual harassment affected the professional confidence of female cardiologists more than it affected the confidence of male cardiologists (42.9% vs 3.0%), including confidence with colleagues (38% vs 10.6%) and patients (23.9% vs 4.6%). 33.3% of female cardiologists felt that sexism hampered opportunities for professional advancement, compared with 2.3% of male cardiologists. Conclusion: Female cardiologists in the UK experience more sexism and sexual harassment than male

cardiologists. Sexism impacts the career progression and professional confidence of female cardiologists more, including their confidence when working with patients and colleagues. Future research is urgently needed to test interventions against sexism in cardiology and to protect the welfare of female cardiologists at work.

Leadership

Synergizing Success: The Power of Dyad Leadership in Cardiology

Item Type: Journal Article

Authors: Biga, C.

Publication Date: 2024

Journal: Journal of the American College of Cardiology 83(21), pp. 2128–2129

[US]

The traditional hierarchical approach to leadership in health care is giving way to the more dynamic and synergistic structure of dyad leadership that typically allows for a physician and a nonphysician administrator to share responsibility for strategic and operational oversight. In the context of cardiovascular care, where the stakes are high and interdisciplinary collaboration is para-mount, dyad leadership provides a promising frame-work for enhanced decision-making, improved patient outcomes, and organizational excellence. This Leadership Page delves into the multifaceted landscape of dyad leadership in cardiovascular care, exploring its top benefits, challenges, and opportunities for the future.

Conference abstract: Collaborative leadership in ambulatory heart failure management Abstract all available

Author(s): Ruth Lithgow

Source: BMJ Leader 8(Suppl 1)

Publication date: 2024

[UK]

Introduction: Ambulatory management of heart failure has reduced the number of inpatient admissions and the cost of management. However, the practice of frequent clinical reviews (2–3 times per week) in the Acute General Medicine (AGM) – led Same Day Emergency Care (SDEC) unit had become burdensome for a patient cohort that tends to be frail and multimorbid. Additionally, the shared care between AGM and the Heart Failure Team (HF team) led to uncertainty regarding who would review and be responsible for patients attending the SDEC with heart failure. Evidence suggests that hospital-initiated case management helps to reduce unplanned admissions for heart failure. This project intends to streamline the delivery of ambulatory heart failure management and improve the interface between AGM and the HF team through the implementation of a collaboratively led multidisciplinary team (MDT) meeting. Aims and objectives of the research project or activity: The aim of this quality improvement project was to restructure our heart failure service and implement a weekly MDT meeting to review the progress and care of patients under the ambulatory pathway. The purpose of this MDT is to reduce the need for patients to return to the SDEC for clinical reviews; thereby increasing the delivery of treatment and clinical reviews at home. For patients who do require further face-to-face encounters, the MDT meeting provides an opportunity to clarify the purposes of that encounter. This allows for appropriate clinical and logistical planning to take place, thereby reducing the number of additional encounters and the amount of time that patients spend on the unit. Secondary aims included improving patient experience, understanding the interface between AGM and the HF team and fostering good communication between the various stakeholders managing heart failure patients. Method or approach: A weekly MDT meeting was introduced from October 2022. At minimum, the MDT consisted of a Heart Failure Advanced Nurse Practitioner (ANP), a pharmacist, an AGM doctor and the SDEC Charge

Nurse. The patient list would be compiled and presented by the Heart Failure ANP. The patients' progress would be reviewed from the Hospital at Home (H@H) documentation or telephonically if the documentation was not available or further clarification was necessary. The metrics reviewed would be the patient's symptomatology, vital signs, weight, level of oedema and renal function. The patient's current diuretic regimen and prognostic medications would be reviewed and any necessary adjustments made during the meeting. The pharmacist would then dispense any new medications which would be delivered at the next home visit or via a courier. Should a return encounter have been deemed necessary, plans for transport, investigations, management and consultations were co-ordinated by the MDT. Findings: Between October 2022 and November 2023, 58 MDT meetings have been conducted and 179 patients who were under 3 different H@H teams have been discussed. Each week, the MDT have reviewed up to 12 patient cases. Since November 2021, the Oxford-based H@H team have administered 2537 doses of Furosemide intravenously for 332 patients. The total amount of diuretic administrations per quarter in 2023 are consistently higher than in 2022. This data is a reflection on both the growth of the service and a shift in practice towards treating heart failure in a predominantly non-clinical setting. It shows that we are increasing our delivery of diuretics at home. A review of cases discussed in the MDT over the course of one month revealed that 64% of the patients had active medical issues (in addition to a diagnosis of heart failure) that required the input of a general medical doctor. This confirmed the need for the service to be delivered by AGM with specialist consultation services provided by the HF Team. Data gathering is still underway to evaluate the broader impact of this project including calculating the number of return visits to the SDEC. Key messages: Introduction of the MDT has been a collaborative, multidisciplinary solution to streamline the delivery of ambulatory heart failure management while continuing to

ensure the delivery of safe ambulatory care. The model has transitioned through various iterations while developing an understanding of what each of the members' roles should be and what could be achieved. It provides an opportunity for shared decision making and has improved the interface between AGM and the HF Team. Patients with decompensated HF require regular monitoring during treatment and these encounters would have otherwise occurred as inpatients or in urgent specialist outpatient clinics; both of which are limited resources. The MDT provides cohesive oversight for heart failure management across both clinical and non-clinical settings and is working to encourage the move towards delivering management in a predominantly non-clinical setting.

[Women in procedural leadership roles in cardiology: The Women In Local Leadership \(WILL\) observational study](#) Abstract only*

Item Type: Journal Article

Authors: Coylewright, Megan;Dodge, Shayne E.;Bachour, Kinan;Hossain, Sharmin;Zeitler, Emily P.;Kearing, Stephen;Douglas, Pamela S.;Holmes, David;Reddy, Vivek Y. and Nair, Devi

Publication Date: 2022

Journal: Heart Rhythm 19(4), pp. 623–629

[US]

Abstract: BACKGROUND: Although 50% of U.S. medical students are women, this percentage fails to translate to cardiology. Gender disparities are striking in interventional cardiology (IC) and electrophysiology (EP) and in leadership. Left atrial appendage closure with the WATCHMAN device, as a novel procedure, is a lens into inequities., OBJECTIVE: The purpose of this study was to identify the characteristics and prevalence of women (1) as early WATCHMAN implanters and (2) in related leadership., METHODS: Data were collected on WATCHMAN implanters and hospitals from January 2017 to December 2018. The gender of physicians in leadership

positions was identified via survey as Director of IC, Director of EP, and Chief of Cardiology. The Firth logistic model controlling for covariates modeled the rare event of a woman implanter., RESULTS: Data were obtained for 100% of the cohort. Men comprised 97% of implanters (860/886). No differences in subspecialty or implants by gender were observed. There were 414 hospitals performing WATCHMAN: 24% academic, 97% urban, and most medium/large size (94%). EP made up 61% of implanters. Only 4.8% of hospitals had women in selected leadership roles. Women represented <1% of Directors of IC and only 2.6% of both Directors of EP and Chiefs of Cardiology. Hospitals with a woman in leadership had a 4 times greater odds of a woman implanter (odds ratio 4.24; 95% confidence interval 1.16-15.41; P = .028)., CONCLUSION: Women are underrepresented in cardiology procedural subspecialties in the use of novel technology and in key leadership roles. There was a greater odds of women early implanters of WATCHMAN if a woman led locally. Increasing women in leadership may improve gender diversity through visibility of role models. Copyright © 2022. Published by Elsevier Inc.

Women and Leadership of Cardiology and Oncology Clinical Trials-Swimming Against the Tide

Item Type: Journal Article

Authors: Moin, Emily E. and Reza, Nosheen

Publication Date: 2022

Journal: JAMA Network Open 5(2), pp. e220050

[US]

Women are underrepresented in medicine across numerous specialties, both as authors of scholarly work and in positions of leadership.¹ Growing interest in sex and gender representation in medicine has led to deeper scrutiny of these disparities, demonstrating the near-universality of the dearth of women in these roles and the lack of change in recent years. This inequity extends to clinical trial leadership, which is concerning, as

clinical trials play a critical role in generating high-quality evidence to guide clinical practice. The benefits of increasing diversity in clinical trial leadership extend broadly to professionals and patients.² Perhaps most importantly, multiple investigations have demonstrated that clinical trials with women lead authors enroll greater proportions of women participants.²⁻⁴ Thus, achieving commensurate representation of women in clinical trial leadership is a goal with both ideological and practical underpinnings: we seek to achieve equity in medicine on its own merits, as well as for its potential to propagate further benefits throughout society.

Learning from Covid-19

The Changing face of medical education in the aftermath of Covid-19: the true digital era begins

Author(s): Haldar et al.

Source: Journal of European CME 11

Publication date: 2022

[UK]

Introduction: The current COVID-19 pandemic has led to significant disruptions to medical training. As a result, the need for education to be delivered in novel, non-face-to-face methods has been unprecedented. All educational bodies from local, regional, and national have been learning to adapt and provide innovative new ways of learning whilst maintaining engagement, relevance and delivering the highest quality content. The British Cardiovascular Society (BCS) has been proactive and agile in their response to the pandemic and undertaken a significant amount of transformational work to deliver continuing medical education (CME) and continuing professional development (CPD) to health professionals with an interest in cardiovascular disease. Here, we detail the evolution of these changes and provide a blueprint for the future of medical education.

The impact of Covid-19 on cardiology training

Author(s): Conway et al.

Source: British Journal of Cardiology 28

Publication date: 2021

[UK]

The coronavirus disease 2019 (COVID-19) pandemic has produced a dramatic shift in how we practise medicine, with changes in working patterns, clinical commitments and training. Cardiology trainees in the UK have experienced a significant loss in training opportunities due to the loss of specialist outpatient clinics and reduction in procedural work, with those on subspecialty fellowships perhaps losing out the most. Training days, courses and conferences have also been cancelled or postponed. Many trainees have been redeployed during the crisis, and routes of career progression have been greatly affected, prompting concerns about extensions in training time, along with effects on mental health.

The impact of the Covid-19 pandemic on cardiology services

Author(s): Fersia et al.

Source: openheart 7

Publication date: 2020

[UK]

Objective The COVID-19 pandemic resulted in prioritisation of National Health Service (NHS) resources to cope with the surge in infected patients. However, there have been no studies in the UK looking at the effect of the COVID-19 work pattern on the provision of cardiology services. We aimed to assess the impact of the pandemic on cardiology services and clinical activity. **Methods** We analysed key performance indicators in cardiology services in a single centre in the UK in the periods prior to and during lockdown to assess reduction or changes in service provision. **Results** There has been a greater than 50% drop in the number of patients presenting to cardiology and those diagnosed with myocardial infarction. All areas of cardiology

service provision sustained significant reductions, which included outpatient clinics, investigations, procedures and cardiology community services such as heart failure and cardiac rehabilitation. **Conclusions** As ischaemic heart disease continues to be the leading cause of death nationally and globally, cardiology services need to prepare for a significant increase in workload in the recovery phase and develop new pathways to urgently help those adversely affected by the changes in service provision.

Multidisciplinary Teams (MDTs)

The heart failure multidisciplinary team: reconnecting in the real world

Author(s): Tiffany Kemp

Source: The British Journal of Cardiology

Publication date: 2022

[UK]

One of the most difficult challenges presented to healthcare professionals during the COVID-19 pandemic has been maintaining standards of care in non-COVID related chronic illness. Many members of our heart failure multidisciplinary (MDT) teams were redeployed and, while many have returned to their original positions, the impact of COVID-19 will be felt for years. It was, therefore, particularly poignant that in its 25th year, the British Society of Heart Failure (BSH) hosted a two-day immersive programme focusing on the heart failure MDT. Held at the Golden Jubilee Conference Hotel in Glasgow, on 12th May 2022, the meeting gave heart failure enthusiasts the opportunity to 'reconnect in the real world'. Dr Tiffany Kemp reports on the highlights of the meeting.

Getting the best from the Heart Team: guidance for cardiac multidisciplinary meetings

Author(s): Archbold et al.

Source: Heart 108

Publication date: 2022

[UK]

The purpose of this document is to update the existing joint British Societies recommendations on multidisciplinary meetings (MDMs) published in 2015 to reflect changes in practice. We aim to provide guidance on the structure and function of MDMs which should be taking place in every cardiac surgical centre. Out of scope are MDMs that do not require the routine presence of a cardiac surgeon such as electrophysiology MDMs and those which are not provided in every centre, such as complex aortic surgery.

New ways of working

Leadership and change management in advancing hybrid operating rooms into interventional cardiology in hospitals within the National Health Service

Author(s): Ahmed Alsunbuli

Source: Future Healthcare Journal 7(Suppl 1)

Publication date: February 2020

[UK]

Hybrid operating rooms (HORs) constitute a new advancement in cardiology where endovascular surgeons join cardiologists to perform more complex operations in an integrated care system.¹ The adoption of this advancement is in line with the 10-year plan of the NHS where more funding is being provided for measurable improvement and commitment for enhanced service.¹ Cardiac diseases continue to pose a challenge to the NHS where increased survival of chronically managed conditions continues to be more prevalent.²

Nursing

Impact of a heart failure nurse practitioner service on rehospitalizations, emergency presentations, and survival in patients hospitalized with acute heart failure Abstract only*

Item Type: Journal Article

Authors: Driscoll, A.;Meagher, S.;Kennedy, R.;Hare, D. L.;Johnson, D. F.;Asker, K.;Farouque, O.;Romaniuk, H. and Orellana, L.

Publication Date: 2023

Journal: European Journal of Cardiovascular Nursing 22(7), pp. 701–708

[Australia]

Abstract: Aims Heart failure nurse practitioners (HF NPs) are an emerging component of the heart failure (HF) specialist workforce but their impact in an inpatient setting is untested. The aim of this paper is to explore the impact of an inpatient HF NP service on 12-month all-cause rehospitalizations, emergency department (ED) presentations, and mortality in patients hospitalized with HF compared with usual hospital care. Methods and results Retrospective, two-group comparative design involving patients (n= 408) admitted via ED with acute HF to a metropolitan quaternary hospital between January 2013 and August 2017. Doubly robust estimation with augmented inverse probability weighting (DR-AIPW) was used to account for the non-random allocation of patients to usual hospital care or the HF NP service in addition to usual in-hospital care. Among 408 patients (186 usual care and 222 HF NP service) admitted with acute HF, the mean age was 76.5 standard deviation (SD) 12.0] years and 56.4% (n=230) were male. After IPW adjustment, patients seen by the HF NP service had a lower risk of 12-month rehospitalization (61.3 vs. 78.3% usual care; difference -16.9%, 95% CI: -26.4%, -6.6%) and ED presentations (12.6 vs. 22.0%; difference -9.4%, 95% CI: -17.3%, -1.4%) with no difference in 6- or 12-month mortality. The HF NP service improved referrals to a

home visiting programme that was available to HF patients (64.4 vs. 45.4%; difference 19%, 95% CI: 8.8%, 28.8%). Conclusion Additional support by an inpatient HF NP service has the potential to significantly reduce rehospitalizations and ED presentations over 12 months. Further evidence from a multicentre randomized control trial is warranted. Copyright © The Author(s) 2022.

Primary Care

[A study of role expansion: a new GP role in cardiology care](#)

Item Type: Journal Article

Authors: Pollard, Lorraine; Rogers, Stephen; Shribman, Jonathan; Spriggs, David and Sinfield, Paul

Publication Date: 2014

Journal: BMC Health Services Research 14(205)

[UK]

Abstract: BACKGROUND: The National Health Service is reconfiguring health care services in order to meet the increasing challenge of providing care for people with long-term conditions and to reduce the demand on specialised outpatient hospital services by enhancing primary care. A review of cardiology referrals to specialised care and the literature on referral management inspired the development of a new GP role in Cardiology. This new extended role was developed to enable GPs to diagnose and manage patients with mild to moderate heart failure or atrial fibrillation and to use a range of diagnostics effectively in primary care. This entailed GPs participating in a four-session short course with on-going clinical supervision. The new role was piloted in a small number of GP practices in one county in England for four months. This study explores the impact of piloting the Extended Cardiology role on the GP's role, patients' experience, service delivery and quality. METHODS: A mixed methods approach was employed including semi-structured interviews with GPs, a patient experience survey, a

quality review of case notes, and analysis on activity and referral data. RESULTS: The participating GPs perceived the extended GP role as a professional development opportunity that had the potential to reduce healthcare utilisation and costs, through a reduction in referrals, whilst meeting the patient's wishes for the provision of care closer to home. Patient experience of the new GP service was positive. The standard of clinical practice was judged acceptable. There was a fall in referrals during the study period. CONCLUSION: This new role in cardiology was broadly welcomed as a model of care by the participating GPs and by patients, because of the potential to improve the quality of care for patients in primary care and reduce costs. As this was a pilot study further development and continuing evaluation of the model is recommended. Abstract]

Researchers

[A roadmap of strategies to support cardiovascular researchers: from policy to practice](#)

Author(s): Chapman et al.

Source: Nature Reviews Cardiology 19 pp. 765-777

Publication date: 2022

[Australia]

Cardiovascular disease remains the leading cause of death worldwide. Cardiovascular research has therefore never been more crucial. Cardiovascular researchers must be provided with a research environment that enables them to perform at their highest level, maximizing their opportunities to work effectively with key stakeholders to address this global issue. At present, cardiovascular researchers face a range of challenges and barriers, including a decline in funding, job insecurity and a lack of diversity at senior leadership levels. Indeed, many cardiovascular researchers, particularly women, have considered leaving the sector, highlighting a crucial need to develop strategies to support and retain researchers working in the

cardiovascular field. In this Roadmap article, we present solutions to problems relevant to cardiovascular researchers worldwide that are broadly classified across three key areas: capacity building, research funding and fostering diversity and equity. This Roadmap provides opportunities for research institutions, as well as governments and funding bodies, to implement changes from policy to practice, to address the most important factors restricting the career progression of cardiovascular researchers.

Shared Decision Making

[Shared decision making in cardiology: a systematic review and meta-analysis](#)

Autor(s): Mitropoulou et al.

Source: Heart 109(1)

Publication date: 2023

Objectives To evaluate the effectiveness of interventions to improve shared decision making (SDM) in cardiology with particular focus on patient-centred outcomes such as decisional conflict. **Methods** We searched Embase (OVID), the Cochrane library, PubMed and Web of Science electronic databases from inception to January 2021 for randomised controlled trials that investigated the effects of interventions to increase SDM in cardiology. The primary outcomes were decisional conflict, decisional anxiety, decisional satisfaction or decisional regret; a secondary outcome was knowledge gained by the patients. **Results** Eighteen studies which reported on at least one outcome measure were identified, including a total of 4419 patients. Interventions to increase SDM had a significant effect on reducing decisional conflict (standardised mean difference (SMD) -0.211 , 95% CI -0.316 to -0.107) and increasing patient knowledge (SMD 0.476 , 95% CI 0.351 to 0.600) compared with standard care. **Conclusions** Interventions to increase SDM are effective in reducing decisional conflict and increasing patient

knowledge in the field of cardiology. Such interventions are helpful in supporting patient-centred healthcare and should be implemented in wider cardiology practice.

Supply

[Heart Failure Training for the Internist: A Potential Solution for the Heart Failure Workforce Shortage](#) Abstract only*

Item Type: Journal Article

Authors: Gorodeski, Eiran Z.;Lenneman, Andrew J. and Sperry, Brett W.

Publication Date: 2024

Journal: JACC.Heart Failure 12(5), pp. 954–957

[US]

There are insufficient numbers of trained clinicians to meet the demands of the heart failure (HF) epidemic in the United States. Although multiple strategies are being evaluated to meet these needs, we focus on an underappreciated but growing pathway to obtain HF training: the HF internist.

Technology

[Novel Artificial Intelligence Applications in Cardiology: Current Landscape, Limitations, and the Road to Real-World Applications](#) Abstract only*

Author(s): Langlais et al.

Source: Journal of Cardiovascular Translational Research 16 pp. 513-525

Publication date: 2023

[Canada]

Cardiovascular diseases are the leading cause of death globally and contribute significantly to the cost of healthcare. Artificial intelligence (AI) is poised to reshape cardiology. Using supervised and unsupervised learning, the two main branches of AI, several applications have been developed in recent years to

improve risk prediction, allow large-scale analysis of medical data, and phenotype patients for personalized medicine. In this review, we examine the key advances in AI in cardiology and its limitations regarding bias in the data, standardization in reporting, data access, and model trust and accountability in cases of error. Finally, we discuss implementation methods to unleash AI's potential in making healthcare more accurate and efficient.

'The Digital Cardiologist': How technology is changing the paradigm of cardiology training

Author(s): Vandermolen et al.

Source: Current Problems in Cardiology 47(12)

Publication date: December 2022

[UK]

In the same way that the practice of cardiology has evolved over the years, so too has the way cardiology fellows in training (FITs) are trained. Propelled by recent advances in technology—catalyzed by COVID-19—and the requirement to adapt age-old methods of both teaching and health care delivery, many aspects, or 'domains', of learning have changed. These include the environments in which FITs work (outpatient clinics, 'on-call' inpatient service) and procedures in which they need clinical competency. Further advances in virtual reality are also changing the way FITs learn and interact. The proliferation of technology into the cardiology curriculum has led to some describing the need for FITs to develop into 'digital cardiologists', namely those who comfortably use digital tools to aid clinical practice, teaching, and training whilst, at the same time, retain the ability for human analysis and nuanced assessment so important to patient-centred training and clinical care.

Artificial Intelligence in Cardiology—A Narrative Review of Current Status

Author(s): Koulaouzidis et al.

Source: Journal of Clinical Medicine 11

Publication date: 2022

Artificial intelligence (AI) is an integral part of clinical decision support systems (CDSS), offering methods to approximate human reasoning and computationally infer decisions. Such methods are generally based on medical knowledge, either directly encoded with rules or automatically extracted from medical data using machine learning (ML). ML techniques, such as Artificial Neural Networks (ANNs) and support vector machines (SVMs), are based on mathematical models with parameters that can be optimally tuned using appropriate algorithms. The ever-increasing computational capacity of today's computer systems enables more complex ML systems with millions of parameters, bringing AI closer to human intelligence. With this objective, the term deep learning (DL) has been introduced to characterize ML based on deep ANN (DNN) architectures with multiple layers of artificial neurons. Despite all of these promises, the impact of AI in current clinical practice is still limited. However, this could change shortly, as the significantly increased papers in AI, machine learning and deep learning in cardiology show. We highlight the significant achievements of recent years in nearly all areas of cardiology and underscore the mounting evidence suggesting how AI will take a central stage in the field.

Applications of Machine Learning in Cardiology

Author(s): Seetharam et al.

Source: Cardiology and Therapy 11 pp. 355-368

Publication date: 2022

[US]

In this digital era, artificial intelligence (AI) is establishing a strong foothold in commercial industry and the field of

technology. These effects are trickling into the healthcare industry, especially in the clinical arena of cardiology. Machine learning (ML) algorithms are making substantial progress in various subspecialties of cardiology. This will have a positive impact on patient care and move the field towards precision medicine. In this review article, we explore the progress of ML in cardiovascular imaging, electrophysiology, heart failure, and interventional cardiology.

Current and future applications of virtual reality technology for cardiac interventions

Author(s): Mahtab and Egorova

Source: Nature Reviews Cardiology 19 pp. 779-780

Publication date: October 2022

[The Netherlands]

Virtual reality is a fast-evolving technology that already has several promising applications in medicine. In this Clinical Outlook, we discuss the current evidence and the future challenges for virtual reality applications in cardiac interventions. The incorporation of virtual reality in daily practice will inevitably make clinical care more robust, patient-centred and safe.

How Technology Is Changing Interventional Cardiology Abstract only*

Author(s): Steitieh et al.

Source: Current Cardiovascular Risk Reports 16

Publication date: 2022

[US]

Purpose of Review: In this review, we will highlight some of the essential advances in interventional cardiology in recent years, as well as the technological advances on the horizon. In particular, we will delve into the advances in percutaneous coronary intervention and structural heart disease, the use of imaging for complex cases, and the anticipated changes that this new technology will bring with it. Recent Findings: Recent

advances include the use of bioresorbable vascular scaffolds for coronary stenting, advanced 3D imaging for complex coronary and structural disease, and advances in our ability to treat structural heart disease through transcatheter aortic valve replacement (TAVR), transcatheter pulmonary valve replacement (TPVR), transcatheter mitral valve repair (TMVR), and tricuspid valve coaptation devices. Summary: Technological advances in the past several years have allowed us to help a wider range of patients with complex cardiac and coronary anatomy. We are now able to treat more complex coronary anatomy through novel devices as well as advanced imaging, and we are also able to intervene upon valvular disease in patients who have more comorbidities than prior. These advances in interventional cardiology will continue to shape our practice in the years to come, and their widespread availability to sicker patients will be of paramount importance.

Patient-initiated cardiovascular monitoring with commercially available devices: How useful is it in a cardiology outpatient setting? Mixed methods, observational study

Author(s): A'Court et al.

Source: MBC Cardiovascular Disorders 22:428

Publication date: 2022

[UK]

Background: The availability, affordability and utilisation of commercially available self-monitoring devices is increasing, but their impact on routine clinical decision-making remains little explored. We sought to examine how patient-generated cardiovascular data influenced clinical evaluation in UK cardiology outpatient clinics and to understand clinical attitudes and experiences with using data from commercially available self-monitoring devices. Methods: Mixed methods study combining: a) quantitative and qualitative content analysis of 1373 community cardiology clinic letters, recording consultations between January–September 2020 including periods with

different Covid-19 related restrictions, and b) semi-structured qualitative interviews and group discussions with 20 cardiology-affiliated clinicians at the same NHS Trust. Results: Patient-generated cardiovascular data were described in 185/1373 (13.5%) clinic letters overall, with the proportion doubling following onset of the first Covid-19 lockdown in England, from 8.3% to 16.6% ($p < 0.001$). In 127/185 (69%) cases self-monitored data were found to: provide or facilitate cardiac diagnoses (34/127); assist management of previously diagnosed cardiac conditions (55/127); be deployed for cardiovascular prevention (16/127); or be recommended for heart rhythm evaluation (10/127). In 58/185 (31%) cases clinicians did not put the self-monitored data to any evident use and in 12/185 (6.5%) cases patient-generated data prompted an unnecessary referral. In interviews and discussions, clinicians expressed mixed views on patient-generated data but foresaw a need to embrace and plan for this information flow, and proactively address challenges with integration into traditional care pathways. onclusions: This study suggests patient-generated data are being used for clinical decision-making in ad hoc and opportunistic ways. Given shifts towards remote monitoring in clinical care, accelerated by the pandemic, there is a need to consider how best to incorporate patient-generated data in clinical processes, introduce relevant training, pathways and governance frameworks, and manage associated risks.

[The changing role of patients, and nursing and medical professionals as a result of digitalization of health and heart failure care](#)

Item Type: Journal Article

Authors: Boyne, Josiane J.;Ski, Chantal F.;Fitzsimons, Donna;Amin, Hesam;Hill, Loreena and Thompson, David R.

Publication Date: 2022

Journal: Journal of Nursing Management 30(8), pp. 3847–3852

[The Netherlands and UK]

Abstract: AIM: The aim of the study is to discuss the changing role of patients, nurses and doctors in an era of digital health and heart failure care., BACKGROUND: With a growing demand for heart failure care and a shortage of health care professionals to meet it, digital technologies offer a potential solution to overcoming these challenges., EVALUATION: In reviewing pertinent research evidence and drawing on our collective clinical and research experiences, including the co-design and development of an autonomous remote system, DoctorME, we offer some reflections and propose some practical suggestions for nurturing truly collaborative heart failure care., KEY ISSUES: Digital health offers real opportunities to deliver heart failure care, but patients and health care professionals will require digital skills training and appropriate health services technological infrastructure., CONCLUSIONS: Heart failure care is being transformed by digital technologies, and innovations such as DoctorME have profound implications for patients, nurses and doctors. These include major cultural change and health service transformation., IMPLICATIONS FOR NURSING MANAGEMENT: Nurse managers should create inclusive and supportive working environments where collaborative working and digital technologies in heart failure care are embraced. Nurse managers need to recognize, value and communicate the importance of digital health in heart failure care, ensuring that staff have appropriate digital skills training. Copyright © 2022 The Authors. Journal of Nursing Management published by John Wiley & Sons Ltd.

Workforce

Child Health Needs and the Pediatric Cardiology Workforce: 2020-2040 Abstract only*

Author(s): Frank et al.

Source: Pediatrics 1;153 (Suppl 2)

Publication date: February 2024

[US]

This article evaluates the pediatric cardiology (PC) workforce and forecasts its future supply. Produced as part of a supplement in Pediatrics, this effort represents a collaboration among the American Board of Pediatrics Foundation, the University of North Carolina at Chapel Hill's Carolina Health Workforce Research Center, the Strategic Modeling and Analysis Ltd., and members of the pediatric subspecialty community. PC is a complex subspecialty including care from fetal life through adulthood and in practice settings that range from the outpatient clinic to procedural settings to the cardiac ICU. Complex subdisciplines include imaging, electrophysiology, heart failure, and interventional and critical care. Using American Board of Pediatrics data, US Census Bureau data, and data from the modeling project, projections were created to model the subspecialty workforce through 2040. Across all modeling scenarios considered, there is considerable projected growth in the supply of pediatric cardiologists by 2040. However, there is significant regional variation in the projected supply of trainees relative to demand in terms of local population growth, with evidence of a likely mismatch between areas surrounding training centers versus areas of greatest workforce need. In addition, this article highlights areas for future focus, including efforts to attract more residents to the subspecialty in general, particularly underrepresented minority members; increased support, more part-time career options, and improved academic career advancement for women in PC; and the development of

better "real-time" workforce data to guide trainees and training programs in decisions regarding sub-subspecialty job availability.

Markets, Messaging, and Mastery: Reframing the Conversation Around the Heart Failure Physician Workforce Abstract only*

Item Type: Journal Article

Authors: Chuzi, Sarah;Colvin, Monica;Mohammed, Selma F.;Wilcox, Jane and Sweitzer, Nancy K.

Publication Date: 2023

Journal: Circulation.Heart Failure 16(8), pp. e010908

[US]

The heart failure (HF) community saw tremendous scientific advances in the year 2022, highlighted by a new set of guidelines, multiple practice-changing trials, and continued technological innovation. In the wake of this exciting year, the number of applications to advanced heart failure and transplant cardiology (AHFTC) training programs remained stagnant—with a significant portion of programs and positions going unfilled. Perplexed by the apparent lack of interest in such a vibrant field, ripe for application of new technology and with increasing treatment options for patients, the AHFTC community has mobilized to take action. Concerned about ensuring a stable physician workforce, stakeholders proposed potential explanations for these trends and sought to identify solutions. The Heart Failure Society of America also convened a task force to investigate this issue.¹ In a recent presentation summarizing some of the Heart Failure Society of America Board of Directors' deliberations on the subject, Heart Failure Society of America President Mark Drazner astutely asked, "Is [the plateau in AHFTC applications] a concern that needs intervention or just appropriate market forces?" We would argue—it's both.

[The Supply and Demand of the Cardiovascular Workforce](#)

Author(s): Narang et al.

Source: Journal of the American College of Cardiology 68(15)
pp. 1680-1689

Publication date: October 2016

[US]

As the burden of cardiovascular disease in the United States continues to increase, uncertainty remains on how well-equipped the cardiovascular workforce is to meet the challenges that lie ahead. In a time when health care is rapidly shifting, numerous factors affect the supply and demand of the cardiovascular workforce. This Council Commentary critically examines several factors that influence the cardiovascular workforce. These include current workforce demographics and projections, evolving health care and practice environments, and the increasing burden of cardiovascular disease. Finally, we propose 3 strategies to optimize the workforce. These focus on cardiovascular disease prevention, the effective utilization of the cardiovascular care team, and alterations to the training pathway for cardiologists.

Competency Frameworks

[Arrhythmia Nurse Specialist Competency Framework](#)

Source: North London Cardiac Operational Delivery Network

Publication date: 2023

The aim of this document is to provide an Arrhythmia Nurses Competency framework to support the development of Arrhythmia Nurse Specialists working in cardiology.

[Heart Disease Training Directory: A guide to career frameworks and education offers](#)

Source: NHS England

Publication date: 2023

We recommend when reading through the 'Career Competency Frameworks' and 'Higher Education Resources', to start at 'All Healthcare Professionals' before moving onto other subsections for further specialities.

[The Core Curriculum for Cardiovascular Nurses and Allied Professionals](#)

Source: European Society of Cardiology

Publication date: 2023

- This presents an entirely revised core curriculum for cardiovascular nurses and allied professions.
- This is an introductory curriculum intended to support the development of core clinical skills with a focus on patient-centred care.
- This curriculum is designed to enhance student engagement, promote active learning, and prepare students to meet new challenges and opportunities in the field of cardiovascular care.

[Lipid Management Competency Framework](#)

Source: Soar Beyond Limited

Publication date: 2023

This document lists the competencies for the National Lipids Programme Workforce Support Programme. The competencies have been developed based on the Summary of National Guidance for Lipid Management for Primary and Secondary Prevention of cardiovascular disease (CVD).

[Curriculum for Cardiology Training](#)

Source: Royal College of Physicians

Publication date: 2022 (for implementation August 2022)

The purpose of the Cardiology curriculum is to produce doctors with the generic professional and specialty specific capabilities needed to manage adult patients presenting with the full range of acute and chronic cardiovascular symptoms and conditions. If they have completed training satisfactorily they will be eligible for

a CCT (or CESR CP) and can be recommended to the GMC for inclusion on the specialist register. At this stage they will be regarded as capable of independent unsupervised practice and will be eligible for appointment as an NHS consultant.

[An international e-Delphi study to identify core competencies for Italian cardiac nurses](#)

Author(s): Bagnasco et al.

Source: European Journal of Cardiovascular Nursing 20(7) pp. 684-691

Publication date: October 2021

Aims: The management of cardiovascular patients requires increasingly competent nursing professionals. In Italy, there are no specific postgraduate courses focused on specialist cardiac skills development for nurses. To develop such courses, content incorporating appropriate competencies is required and this study was designed to meet this. To delineate a set of core competencies to develop national educational interventions to ensure cardiac nurses in Italy achieve international standards. Methods and results: A three-round e-Delphi study including a panel of 32 expert cardiac nurses from the UK, Canada, Australia, New Zealand, and Italy was conducted; 26 respondents completed all three rounds. The first round sought a list of five competencies from each participant which they were asked to prioritize in Round 2. In Round 3, they were asked to prioritize again with the knowledge of the priorities identified in Round 2. The final list of competencies was those achieving 70% agreement among participants. We identified 14 core competencies spanning a range of areas of competence including technical, interpersonal, health promotion, use of evidence, and management. Only minor differences were evident between the Italian and the international panel regarding the priority given to some core competences, such a leadership and taking patient history. Conclusion: This is the first study in Italy to delineate cardiac nurses' core competencies. As such, it

provides a foundation for the development of postgraduate educational programmes for cardiac nurses including competencies that are congruent with international standards.

[Heart Failure Specialist Nurse Competency Framework](#)

Source: British Society for Heart Failure

Publication date: 2021

The competency framework serves to guide Heart Failure Specialist Nurses' (HFSNs) to develop the knowledge and clinical consultation skills required to work safely, competently and effectively manage adults with heart failure. The HFSN is the named professional co-ordinating the patient's care plan in partnership with the patient and is involved in collaborative care planning across all relevant health and social care sectors where appropriate.

[A competency framework for clinical pharmacists and heart failure](#)

Author(s): Forsyth et al.

Source: International Journal of Pharmacy Practice 27(5)

Publication date: October 2019

Objectives: Heart failure is an escalating 'pandemic' with malignant outcomes. Clinical pharmacist heart failure services have been developing for the past two decades. However, little clarity is available on the additional advanced knowledge, skills and experience needed for pharmacists to practice safely and competently. We aimed to provide an expert consensus on the minimum competencies necessary for clinical pharmacists to deliver appropriate care to patients with heart failure. Methods: There were four methodological parts; (1) establishing a project group from experts in the field; (2) review of the literature, including existing pharmacy competency frameworks in other specialities and previous heart failure curricula from other professions; (3) consensus building, including developing, reviewing and adapting the contents of the framework; and (4)

write-up and dissemination to widen the impact of the project. Key findings: The final framework defines minimum competencies relevant to heart failure for four different potential levels of specialism: all pharmacists regardless of role (Stage 1); all patient-facing clinical pharmacists (Stage 2); clinical pharmacists with specific planned roles in the care of heart failure patients (Stage 3); and regionally/nationally/internationally recognised expert pharmacists with a direct specialism in heart failure (Stage 4). Conclusions: The framework delivers the vital first step needed to help standardise care, give pharmacists a blueprint for career progression and continuing professional development and bring clarity to the role of the pharmacist. Future collaboration between professional bodies and training providers is needed to develop structured programmes to align with the framework and facilitate training and resultant accreditation.

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