British Society for Heart Failure
21st Annual Autumn Meeting

The heart failure multidisciplinary team

Fleming Room
Queen Elizabeth II Centre
London

29–30 November 2018

Programme and Abstracts
The BSH is grateful to the following for meeting-specific contributions:

**Gold Exhibitors:**
- Medtronic
- Novartis Pharmaceuticals*
- Vifor Pharma

**Silver Exhibitors:**
- Abbott Medical
- Akcea Therapeutics
- Napp Pharmaceuticals
- Novartis Pharmaceuticals
- Pharmacosmos UK

**Bronze Exhibitors:**
- Alnylam
- APC Cardiovascular
- Bayer
- Boston Scientific
- Pharma Nord
- Roche Diagnostics

**Other Contributors:**
- Alliance for Heart Failure
- British Heart Foundation
- Cardiomyopathy UK
- Heartfelt Technologies
- NICOR
- Pumping Marvellous Foundation
- UK Heart Failure Investigators Research Network

* Novartis Pharmaceuticals also has Silver Exhibition space included with this stand

The BSH also gratefully acknowledges the support provided by the **Friends of BSH:**
- Abbott Medical
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- Boston Scientific
- Medtronic
- Novartis Pharmaceuticals
- Roche Diagnostics
- Vifor Pharma

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Please note that photographic, video or audio recording of the sessions and slides of this meeting is strictly prohibited. There will be a photographer on-site to take photographs which will be used on the BSH website, in the meeting report and for future publications.

For scientific and/or technical reasons the BSH programme directors reserve the right to make any change to the programme.

The BSH cannot accept responsibility for personal accidents, or loss or damage to private properties of participants and exhibitors at the BSH Annual Autumn Meeting. Participants and exhibitors are advised to make their own arrangements if they consider it necessary.
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<td>09:20</td>
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<td>Paul Kalra (Portsmouth)</td>
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<td>Chairs: Parminder Chaggar (Truro) / Suzanna Hardman (London)</td>
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<td>09:25-10:00</td>
<td>National Confidential Enquiry into Patient Outcome and Death (NCEPOD) report</td>
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<td>10:00-10:10</td>
<td>NCEPOD: a clinician’s reply</td>
<td>Martin Cowie (London)</td>
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<td>NCEPOD: questions from audience</td>
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<td>National Heart Failure Audit: questions from audience</td>
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<td>11:25-11:45</td>
<td>Chairs: John Baxter (Sunderland) / Paul Forsyth (Glasgow)</td>
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<td>Practical assessment and management of HFpEF</td>
<td>Ian Loke (Leicester)</td>
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<td>Polypharmacy</td>
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<td>14:00-14:20</td>
<td>Palliative heart failure service delivery and multidisciplinary team communication</td>
<td>Joy Ross (London)</td>
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<td>14:20-14:40</td>
<td>Managing the psychological elements of dyspnoea</td>
<td>John Sharp (Glasgow)</td>
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<td>Chairs: Andrew Clark (Hull) / Simon Williams (Manchester)</td>
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<td>14:40-14:55</td>
<td>Simon Williams (Manchester)</td>
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<td>Heart failure research UK</td>
<td>John Cleland (Glasgow)</td>
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<td>14:55-15:02</td>
<td>Comparing echocardiography and cardiac magnetic resonance measures of ejection fraction: implications for HFmRF research</td>
<td>Dan Bromage (London)</td>
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<td>15:02-15:09</td>
<td>Genomic insights into the pathophysiology of heart failure with reduced and preserved ejection fraction</td>
<td>Ify Mordi (Dundee)</td>
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<td>Wireless LV endocardial cardiac resynchronisation therapy improves response; results from a multicentre international study</td>
<td>Ben Sieniewicz (London)</td>
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<td>15:16-15:23</td>
<td>Prevalence and prognostic significance of frailty in patients with chronic heart failure – a comparison of 3 screening versus 3 assessment tools</td>
<td>Shirley Sze (Hull)</td>
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BSH Research Fellows: updates
15:25–15:35 The RHYTHM-HF study
Simon Beggs (Glasgow)
15:35–15:45 Novel mechanisms of autonomic dysfunction in chronic heart failure – effects of iron replacement therapy on skeletal muscle metaboreflex and contribution to sympathetic nerve activation. ADMIRAL-HF
Richard Baker (Bristol)

15:45–16:15 Tea and Meet the Expert sessions

16:15–17:15 Session 5: NICE heart failure guidelines
Chair: Iain Squire (Leicester)
16:15–16:35 NICE chronic heart failure guidelines 2018
Abdallah Al-Mohammad (Sheffield)
16:35–17:15 NICE chronic heart failure guidelines 2018: question time
Panel: Abdallah Al-Mohammad (Sheffield) / Andrew Clark (Hull) / Darren Green (Salford) / Paul Kalra (Portsmouth)

17:15–18:30 Cheese and wine

Programme – Day Two FRIDAY 30 NOVEMBER 2018

08:30–08:55 BSH Annual General Meeting (BSH members only)
Chairs: Peter Cowburn (Southampton) / Paul Kalra (Portsmouth)

08:55–09:00 Introduction
Paul Kalra (Portsmouth)

09:00–09:40 Session 6: Trials update session
Chairs: Roy Gardner (Glasgow) / Chim Lang (Dundee)
09:00–09:30 Clinical trials and congress update
John McMurray (Glasgow)
09:30–09:40 Presentation of the Young Investigators’ Award
Paul Kalra (Portsmouth)

09:40–10:30 Session 7: Challenges facing Heart Failure Specialist Nurses
Chairs: Carys Barton (Hertfordshire) / Annie MacCallum (Gloucestershire)
09:40–09:45 Nurse Forum update
Jayne Masters (Southampton)
09:45–10:05 ESC Heart Failure Specialist Nurse curriculum
Jillian Riley (London)
10:05–10:30 Contemporary issues facing heart failure nurse services
Louise Clayton (Leicester)

10:30–11:00 Coffee and Meet the Expert sessions

11:00–11:40 Session 8: Challenging arrhythmias
Chairs: Stephen Pettit (Cambridge) / Carol Whelan (London)
11:00–11:20 Ventricular tachycardia ablation
Magdi Saba (London)
11:20–11:40 Atrial fibrillation and heart failure – is ablation the right option?
Anthony Chow (London)

11:40–12:10 Session 9: Living with heart failure: the patient view
Chair: Simon Williams (Manchester)
Panel: Ruth Clout (Manchester) / Nick Hartshorne-Evans (Pumping Marvellous Foundation) / Joel Rose (Cardiomyopathy UK)
11:40–11:50 Introduction of panel
Simon Williams (Manchester)
11:50–12:00 Heart failure patient’s perspective
Ruth Clout (Manchester)
12:00–12:10 Panel discussion
12:10–13:40 Lunch and Meet the Exhibitors

12:40–13:30 Satellite Symposium – ‘More life in their days’
The Heart Failure Multidisciplinary Team (MDT)
Sponsored and organised by Vifor Pharma

13:40–14:40 Session 10: Contemporary clinical issues in heart failure
Chairs: Peter Cowburn (Southampton) / Clare Taylor (Oxford)
13:40–14:00 Diabetes – old drugs versus new Chim Lang (Dundee)
14:00–14:20 When to anticoagulate Jane Cannon (Harefield)
14:20–14:40 Potassium – friend or foe? Stephen Pettit (Cambridge)

14:40–15:10 Tea and Meet the Expert sessions

15:10–16:25 Session 11: Clinical cases heart failure MDT
Chairs: Lisa Anderson (London) / Jenny Welstand (Wrexham)
Panel: Louise Clayton (Leicester) / Ian Loke (Leicester) / Theresa McDonagh (London) / Peter Savill (Southampton)
15:10–15:35 Diagnosing heart failure in primary care Clare Taylor (Oxford)
15:35–16:00 CardioMEMS – a novel approach to monitoring heart failure Andrew Flett (Southampton)
16:00–16:25 Managing renal dysfunction/AKI in patients with heart failure Joe Cuthbert (Hull) / Andrew Clark (Hull)

16:25 Closing remarks Roy Gardner (Glasgow)
16:30 Meeting close
SATELLITE SYMPOSIA

THURSDAY 29 NOVEMBER 2018, 13:00–13:50

Satellite symposium
Change is in your hands: every heartbeat counts
Sponsored and organised by Novartis Pharmaceuticals Ltd

Chair: Professor Martin Cowie (London)
Speakers: Professor Roy Gardner (Glasgow)
          Dr G Sunthar Kanaganayagam (London)
          Dr Klaus Witte (Leeds)

13:00–13:05 Welcome and introduction
13:05–13:15 Don’t waste a heartbeat
13:25–13:35 Seize the moment
13:35–13:45 Panel discussion
13:45–13:50 Summary and close

FRIDAY 30 NOVEMBER 2018, 12:40–13:30

Satellite symposium
‘More life in their days’ The Heart Failure Multidisciplinary Team (MDT)

Chair: Dr Clare Murphy (Glasgow)
Panel: Cardiologist: Dr Fozia Ahmed (Manchester)
       Pharmacist: Paul Forsyth (Glasgow)
       Nurse: Carys Barton (Hertfordshire)
       GP: Dr Clare Taylor (Oxford)
       Patient: Nick Hartshorne-Evans (Pumping Marvellous Foundation)

Key questions:
• How important are quality of life (QoL) and function for patients with heart failure?
• What are the demonstrable benefits of correcting iron deficiency on QoL?
• What does the ESC evidence based guideline recommend?

Please attend this interactive session, exploring the multidisciplinary approach to optimising holistic patient care, referencing the current evidence base and aligned to patient needs. The discussion will highlight the priorities of a number of clinicians from the perspective of their different disciplines and pressures, in conversation with a patient with heart failure.

The discussion will be followed by a question and answer session.
# MEET THE EXPERT SESSIONS

**EXHIBITION AREA I – BRITTEN ROOM**

## THURSDAY 29 NOVEMBER 2018

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<tr>
<th>Expert:</th>
<th>Dr Jen Middleton, Specialist Registrar at Northern General Hospital, Sheffield</th>
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<tr>
<td>Time:</td>
<td>10:58–11:08</td>
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<tr>
<td>Topic:</td>
<td>Personalising CRT: the difference optimisation can make</td>
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<tr>
<td>Location:</td>
<td>Abbott exhibition stand</td>
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<tr>
<th>Expert:</th>
<th>Professor Martin R Cowie, Professor of Cardiology, Imperial College London</th>
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<tbody>
<tr>
<td>Time:</td>
<td>11:10–11:20</td>
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<tr>
<td>Topic:</td>
<td>Rivaroxaban in cardiovascular protection: getting to the heart of the matter</td>
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<tr>
<td>Location:</td>
<td>Bayer exhibition stand</td>
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<th>Dr James Beattie, Visiting Senior Lecturer, King's College London</th>
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<tr>
<td>Time:</td>
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<tr>
<td>Topic:</td>
<td>Iron deficiency in heart failure: challenges and opportunities</td>
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<td>Location:</td>
<td>Vifor exhibition stand</td>
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<tr>
<th>Expert:</th>
<th>Professor Roy Gardner, Consultant Cardiologist, Golden Jubilee Hospital, Glasgow</th>
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<tr>
<td>Time:</td>
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<td>Topic:</td>
<td>NT-proBNP in monitoring heart failure</td>
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<td>Location:</td>
<td>Roche Diagnostics exhibition stand</td>
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<td>Expert</td>
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<td>Dr Patricia Campbell, Consultant Cardiologist and Heart Failure Lead, Southern Health and Social Care Trust, Northern Ireland</td>
<td>10:33–10:43</td>
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<tr>
<td>Dr Parminder Chaggar, Consultant Cardiologist, Royal Cornwall Hospitals NHS Trust, Truro</td>
<td>10:45–10:55</td>
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<tr>
<td>Dr Carol Whelan, Consultant Cardiologist, Clinical Lead for Heart Failure and Honorary Senior Lecturer at the Royal Free Hospital, UCL</td>
<td>14:43–14:53</td>
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</table>
ABSTRACTS

National Confidential Enquiry into Patient Outcome and Death (NCEPOD) report
Mark Juniper (Consultant in Respiratory and Intensive Care Medicine, Great Western Hospital, Swindon and Clinical Co-ordinator National Confidential Enquiry into Patient Outcome and Death [NCEPOD])

The National Heart Failure Audit has shown a progressive improvement in mortality rates. Care under a heart failure specialist is associated with better access to investigations, uptake of heart failure treatments and lower mortality rates. The national audit does not however include all patients admitted with heart failure. The study by the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) examined the care of patients admitted to hospital in the UK with a diagnosis of acute heart failure and who died within the first 7 days of hospital admission. The objective was to understand how further improvements in heart failure care can be made and to provide recommendations for improved practice. The presentation will outline the key findings of the study. It will focus on the principal recommendations for improved practice and the clinical data that led to these recommendations.

NCEPOD: a clinician’s reply
Martin Cowie (Professor of Cardiology, Imperial College London)

There is no abstract for this presentation.

National Heart Failure Audit
Theresa McDonagh (Consultant Cardiologist, King’s College Hospital, London)

There is no abstract for this presentation.
Practical assessment and management of HFpEF

Ian Loke (Consultant Cardiologist, Glenfield Hospital, Leicester)

Heart failure with preserved ejection fraction (HFpEF) is rapidly becoming a major challenge to 21st century doctors. It is increasing in prevalence and has major health implications for patients who are often advanced in age and multimorbid. Despite that, we have little clinical trial data to guide our management of this very sick group of patients. Because of the heterogeneity of this group of patients, making a definitive diagnosis of HFpEF can, in itself, be challenging.

The presentation today will focus on practical day to day issues of making a firm diagnosis and utilising the appropriate investigations in order to aid us. We will also look through the available data to draw insights on the potential therapeutic interventions available.

I firmly believe that managing the HFpEF patient is the single biggest challenge facing the heart failure community today. I hope that the presentation will bring greater clarity and help focus our attention on managing this complex group of patients.

Polypharmacy

Jo Bateman (Lead Cardiology Pharmacist/Deputy Pharmacy Clinical Services Manager, Countess of Chester Hospital NHS Foundation Trust, Chester)

Whilst acknowledging that there is no universal definition for polypharmacy, it is generally accepted that it includes patients on multiple medications (>5) for chronic conditions. The Kings Fund describe polypharmacy as either appropriate or problematic, but it isn’t always simple to achieve appropriate polypharmacy when managing multiple co-morbidities. Regardless of the definition, we know that people with heart failure are on multiple medicines. Following NICE and ESC heart failure guidelines alone could result in patients being on five or more medicines for heart failure without even considering any co-morbidities. Add in medicines for coronary artery disease, hypertension, as well as any non-cardiac conditions such as chronic obstructive pulmonary disease (COPD), asthma, diabetes or depression to name but a few, and patients can be on in excess of eight medications. One study of 17,285 patients registered with left ventricular systolic dysfunction (LVSD) at GP practices vs 1,404,471 of the general population showed that 52% of patients with LVSD were on more than 7 medicines compared to 6.6% of the general population and 17.7% with LVSD were on 11 or more compared to 1.6% of the general population.

Polypharmacy cannot always be avoided, but we can individualise and optimise care of people with heart failure to ensure the safest and most efficacious treatment for all co-morbidities, without compromising heart failure management and cardiovascular risk. This presentation will focus on identifying risks associated with medicines in the heart failure population and assessing how to manage risk by considering safer alternatives.

References


Further reading

COPD and cor pulmonale

Jenni Quint (Reader in Respiratory Epidemiology at the National Heart and Lung Institute (NHLI), Imperial College London)

Heart failure and chronic lung diseases including asthma, chronic obstructive pulmonary disease (COPD), bronchiectasis and interstitial lung disease commonly co-exist. Often right sided heart failure is ignored and cor pulmonale is thought of as only being important in end stage COPD. This talk will highlight what is known epidemiologically about the co-existence of COPD and cor pulmonale as well as covering clinical examples, highlighting some of the difficulties in differentiating decompensation of these co-existing diseases as well as the negative and positive impacts that treating one disease can have on the other.

Further reading


**Palliative heart failure service delivery and multidisciplinary team communication**

Joy Ross (Consultant in Palliative Medicine, St Christopher’s Hospice, London)

Dr Joy Ross will present the model and initial outcome data for a 1-year pilot study, which focused on integrating heart failure and palliative care services to assess and manage patients with end-stage heart failure who were thought to be in their last year of life.

The pilot was funded by Bromley Clinical Commissioning Group, at a time when there were no community heart failure nurse specialists and inpatient heart failure nurse specialists only saw patients with left ventricular systolic dysfunction (LVSD). Six GP practices in Bromley volunteered to participate in the pilot and we met with them to agree criteria for referral. 102 patients, thought to have end-stage heart failure, were referred over 1 year. 89 of these were accepted onto the pilot. An experienced Advanced Nurse Practitioner, with experience in heart failure and palliative care, worked closely with cardiology consultants and the heart failure/palliative care teams in the hospital setting (Princess Royal University Hospital) and Community Palliative Care Team (St Christopher’s Hospice) and primary care colleagues in the community. Following initial assessment, patients were discussed at joint multidisciplinary meetings to assess both cardiac and palliative needs. Patients referred to the pilot had a mean age 84.2±10.2 yrs. Whilst all patients accepted had a primary diagnosis (main reason for referral) of heart failure, further review showed a more complicated picture of cardiac dysfunction: 55 (61.8%) had LVSD and as such would traditionally be seen by heart failure nurses in the community setting and care would follow protocol-driven evidence-based practice, 14 (15.7%) patients had heart failure with preserved ejection fraction, 13 (14.6%) had predominately valvular dysfunction, 5 (5.6%) had right sided heart failure and 2 (2.2) did not have a cardiac diagnosis and were discharged. Many of the patients had multiple co-morbidities including mental health diagnoses (depression and dementia). 44% of patients died during the pilot. Of these, 69% died at either home or hospice (41%/28%) compared with 31% in a hospital setting. Further outcome data will be presented together with reflections on the benefits and challenges of joint working between cardiology and palliative care professionals, and discussion as to how ongoing integrated practice can be further developed locally with dissemination of good practice and joint working to other settings.

**Managing the psychological elements of dyspnoea**

John Sharp (Consultant Clinical Psychologist, Golden Jubilee National Hospital, Glasgow)

People with heart failure experience numerous physical symptoms many of which often elude medical explanation and, in turn, efficacious intervention. A variety of terms, including, but not restricted to, medically unexplained symptoms (MUS), persistent physical symptoms, and somatic symptom disorders, are used to address incidents where physical symptoms cannot be explained by medical models. According to data on healthcare utilisation, 15–30% of consultations in primary and secondary care concern patients with MUS, resulting in significantly higher healthcare utilisation in secondary care and high associated costs. This problem is particularly evident for people with heart failure who often experience a broad range of physical symptoms including dyspnoea, chest pain, and fatigue, which often have no discernible explanation and prove resistant to conventional heart failure pharmacotherapies. A number of models have been proposed to offer psychological explanations for the onset, maintenance, and exacerbation of persistent physical symptoms and interventions derived as a consequence. This talk will consider the current literature on the strength of the models and the evidence for the treatment of hitherto MUS by psychological therapy.
Heart failure research UK

John Cleland (Director of the Robertson Centre of Biostatistics and Clinical Trials, Institute of Health & Well-Being, University of Glasgow, Glasgow)

The UK Heart Failure Investigators Network was established in 2017 to promote investigator-led, multicentre clinical trials in the UK. It has an annual meeting the day before the BSH meeting – all those interested are welcome to come (contact Claire.Brunton@glasgow.ac.uk). From 2018 onwards, it will have a booth at the exhibition at the annual meeting of the British Cardiovascular Society. The Network has an ‘open-door’ policy to both health professionals and patient-participants. The Network is looking for enthusiastic innovators who want to drive the research agenda forwards. The Network will do its best to support new ideas and initiatives.

The Network has adopted several ongoing trials (REVIVED [revascularisation], IRONMAN [intravenous iron] and RESHAPE-HF2 [mitral regurgitation]), has obtained funding for its first trial (RELIEHF [Patiromer facilitated high-dose MRA [mineralocorticoid receptor antagonists] for advanced heart failure]), has two further funding applications under consideration (Q10-HF [co-enzyme Q10] and INCREDIBLE [CRT-P vs CRT-D]) and has a great idea that needs refining (the ‘any-willing-patient’ trial).

If you want to get involved, please ask. We are looking for investigators who can offer support through steering committees, endpoint adjudication and trial recruitment. We won’t know you are interested unless you ask!
Young Investigators’ Award (YIA)

The YIA was created to motivate junior doctors (and other healthcare professionals) to present their work and provide a platform via which they are able to gain experience presenting to a large audience and raise their profile amongst colleagues. It also provides an opportunity for delegates to hear about some interesting new data.

Submissions
The BSH received 14 abstract submissions for the YIA this year.

As per the abstract guidelines, these submissions were from:
- BSH members
- physicians, nurses or other professionals allied to medicine
- staff who are not in consultant posts, substantive or honorary at time of submission.

All abstracts related to contemporary data and had only been previously presented/published elsewhere in 2018.

Short listing
Entries were short listed based on the quality of the research by a panel of five current BSH Board members who were not conflicted by any of the submissions. The four best abstracts were chosen for oral presentation.

Presentation
Authors will present their abstract during Session 4 on Thursday (14:40–15:45). Each presenter will have 5 minutes for presentation.

Questions
Questions will be permitted from the audience as well as from the judging panel. If you would like to pose a question, please raise your hand and wait for a microphone to be handed to you. Before asking your question, please state whether you have any conflict of interest with any of the YIA presenters. There will be 2 minutes of questions for each presenter.

Judging panel
The panel consists of five non-conflicted independent judges:
- Dr Lisa Anderson
- Professor Roy Gardner
- Mrs Jayne Masters
- Dr Stephen Pettit
- Dr Simon Williams

The session has two chairs:
- Professor Andrew Clark*  
- Dr Simon Williams

*Professor Clark has a conflict of interest with one of the presenters and will not question any of the Investigators.

Each judge will rank the presentations from 1st to 4th place and provide the outcome confidentially to the BSH Secretariat. The BSH Secretariat will total all scores and provide details of the winning presentation to Dr Paul Kaira, who will announce the winner at 09:30 on Friday 30 November.

Winners and runners-up
All presenters will receive the following:
- certificate
- complimentary registration for the 21st BSH Annual Autumn Meeting 2018
- complimentary registration for the 11th BSH Heart Failure Day for Revalidation and Training on 26 March 2019 or the 9th BSH Heart Failure Nurse and Healthcare Professional Study Day on 27 March 2019 in Glasgow.

The winner will also receive a prize of £250.
Comparing echocardiography and cardiac magnetic resonance measures of ejection fraction: implications for HFmRF research

DI Bromage,1**, RFG Simpson,1 L Dancy,1 A McDiarmid,2 M Monaghan,1 T McDonagh,1 D Sado1
(1King’s College Hospital NHS Foundation Trust, London; 2Guy’s and St Thomas’ NHS Foundation Trust, London)

Background: Owing to high spatial resolution cine imaging, cardiovascular MRI (CMR) is the gold standard for calculation of left ventricular ejection fraction (LVEF). Echocardiography (echo) has been shown to consistently underestimate LVEF when compared to CMR. However, this has not been demonstrated for different categories of LVEF.

Purpose: We hypothesised that the reported discrepancy between echo and CMR would be consistent across subgroups of LVEF.

Methods: This was an observational study of patients with both CMR and echo studies, between May and October 2017, identified via local UK National Heart Failure Audit data or CMR records. Patients were excluded if the imaging tests were performed >60 days apart or if they had a diagnosis that would predictably change between tests, including acute myocardial infarction, cardiac amyloidosis or Takotsubo cardiomyopathy. Only tests with formal LVEF assessment were included. Where a range was given, the median was used for analysis. LVEF categories were defined according to ESC guidelines. CMR and echo were compared using paired t tests or Wilcoxon matched pairs tests for parametric and non-parametric data, respectively. Data are represented as means ± SEM. Statistical significance was reported if P<0.05.

Results: 103 cases with both imaging modalities were included. Overall, echo underestimated LVEF compared to CMR (CMR 46.5±1.8%, echo 37.3±1.4%, P<0.0001). There was no significant variation in discrepancy over time (r² 0.04). Subgroup analysis according to echo technique (Simpson’s vs 3D) and underlying diagnosis (where at least n=10 available) did not alter the overall trend. Importantly, echo underestimated LVEF compared to CMR for all categories of LVEF (<40% CMR 34.0±1.7% vs echo 26.1±1.0%, P<0.0001; 40–50% CMR 60.1±2.8% vs 40–50% echo 45.7±0.7%, P<0.0001; >50% CMR 63.7±2.1% vs echo 56.4±0.9%, P=0.0019). Using echo as the default measurement, CMR LVEF assessment would result in 36 patients (35.0%) being reclassified.

Conclusion: Echo underestimates LVEF compared to CMR across all LVEF subgroups and diagnoses, regardless of technique used. This is of interest in HFmrEF trials where, if echo is used for LVEF assessment, many included patients may have normal systolic function.

Conflicts of interest: None to declare.

*Presenting author

Figure. Echo underestimates LVEF compared to CMR across all LVEF subgroups.
Genomic insights into the pathophysiology of heart failure with reduced and preserved ejection fraction

Ify Mordi,* Colin Palmer, Ewan Pearson, Alexander Doney, Chim Lang (University of Dundee, Dundee)

**Background:** Many therapeutic strategies based on observational data suggesting benefit in heart failure with preserved ejection fraction (HFpEF) have failed to translate in randomised trials. A greater understanding of the causal risk factors in development of HFpEF might help inform future clinical trials. Mendelian Randomisation (MR) techniques using genetic risk scores (GRS) can provide information on HF causality.

**Purpose:** To use MR to determine differences in causality in risk factors associated with HFpEF compared to HFrEF.

**Methods:** We studied patients from the Genetics of Diabetes Audit and Research Tayside Scotland registry (GoDARTS), a cohort study comprising 18,306 participants (10,149 with type 2 diabetes (T2D) and 8,157 controls without). Baseline data were collected including blood for genotyping, and all patients consented to prospective electronic record linkage. We constructed GRS based on large genome-wide association studies for risk of coronary artery disease (CAD) and elevated systolic blood pressure (SBP). Competing risks regression was performed to determine the association of CAD and SBP with HFrEF and HFpEF (from electronic health records and linked echo data) after adjustment for clinical variables with death as a competing risk.

**Results:** 12,919 patients had genomic data available (mean age 63±12 years, 54.3% male). There were 1,293 HF events (752 HFrEF, 442 HFpEF and 99 unclassified). After adjustment, patients in the highest quartile of genetic risk of CAD were significantly more likely than those in the lowest quartile to develop HFrEF but not HFpEF (HFrEF: HR 1.32; 95% CI 1.08–1.61, p=0.007; HFpEF: HR 1.05; 95% CI 0.80–1.37, p=0.73). Conversely, both patients in the highest quartile of genetically-determined SBP were significantly more likely to develop both HFrEF (HR 1.59; 95% CI 1.28–1.96, p=0.007) and HFpEF (HR 1.33; 95% CI 1.01–1.74, p=0.041).

**Conclusion:** Genetically-determined risk of higher SBP was significantly associated with risk of HFrEF and HFpEF. Conversely, genetic risk of CAD was only associated with HFrEF but not HFpEF. Large-scale population genomics may provide insight into causality in HFpEF which may inform future trials.

**Conflicts of interest:** We report no conflict of interest.

*Presenting author

**Figure.** Cumulative Incidence of HFrEF and HFpEF for highest quartile (thin line) versus lowest quartile (thick line) of genetic risk of CAD and increased SBP.
Wireless LV endocardial cardiac resynchronisation therapy improves response; results from a multicentre international study

Benjamin J Sieniewicz,1,2* Timothy R Betts,3 Simon James,4 Andrew Turley,4 Christian Butter,5 Martin Seifert,5 Lucas VA Boersma,6 Sam Riahi,7 Petr Neuzig,8 Mauro Biffi,9 Igor Diemberger,9 Martin Arnold,10 David T Keane,11 Pascal Defaye,12 Jean-Claude Deharo,13 Christopher A Rinaldi1,2 (1Division of Imaging Sciences and Biomedical Engineering, King’s College London, UK; 2Cardiology Department, Guys and St Thomas’ NHS Foundation Trust, London, UK; *Oxford University Hospitals NHS Foundation Trust, Oxford, UK; 5The James Cook Hospital, South Tees Hospitals NHS Foundation Trust, Middlesbrough, UK; 6Immanuel Klinikum Bernau Herzzentrum Brandenburg, Bernau, Germany; 7St Antonius Ziekenhuis, Nieuwegein, Utrecht, Netherlands; 8Aalborg University Hospital, Aalborg, Denmark; 9Na Homolce Hospital, Prague, Czech Republic; 10Policlinico S’Orsola, Bologna, Italy; 11University Hospital Erlangen, Department of Cardiology, Erlangen, Germany; 12St. Vincent’s Univ Hospital, Dublin, Ireland; 13CHU Grenoble Alpes, Grenoble, France; 14Hopital La Timone, Marseille, France)

Background: Biventricular endocardial pacing (BiV END) is a potential therapy for heart failure patients who either cannot receive transvenous epicardial CRT or who have failed to adequately respond. BiV END CRT delivered by a new wireless LV END pacing system (WiSE-CRT System, EBR Systems, Sunnyvale, California) avoids the need for lifelong anticoagulation associated with lead based systems.

Purpose: We sought to assess the safety and efficacy of the WiSE-CRT system during real world clinical use in an international registry.

Methods: Registry of centres implanting the WiSE-CRT system as part of the WiCS Post Market Surveillance Registry (Clinical trial study number NCT02610673).

Results: 68 patients across 12 centres underwent implantation with the WiSE-CRT system. Patients were predominantly male aged 68.3±10.4 yrs, LVEF 31%±9.1 with a mean QRS duration 195.8±120ms. Ischaemic aetiology was present in 37.5% of patients. 14% of patients were non-responders to prior CRT while 71% were failed CRT upgrades. Successful implantation and chronic delivery of BiV END pacing via the WiSE-CRT system was achieved in 97% of patients. Acute (<24 hrs) and 30 day complications rates (5.9% and 23.5% respectively) were similar to those reported in the SELECT-LV validation study, including one case of cardiac tamponade (1.5%) and four arterial access complications (5.9%). Six month follow-up data were available for 39 of the 68 patients (Table). Overall, 76% of patients experienced a subjective symptomatic improvement following implantation with the device.

Conclusion: This is the largest series of the WiSE-CRT pacing system to date. In a real-world, multicentre setting, leadless LV endocardial CRT proved technically feasible with a high success rate and similar complication rate to that previously described. In addition, BiV END pacing via the WiSE CRT system led to symptomatic improvements in 76% of patients. Significant LV remodelling was observed in over half of our cohort. BiV END pacing using the WiSE CRT system is a safe and effective therapeutic option for patients who have either failed to improve following transvenous, epicardial CRT or who are unable to receive effective traditional resynchronisation pacing, whilst avoiding the need for long term anticoagulation.

Conflicts of interest: This work was supported by the Wellcome/EPSRC Centre for Medical Engineering [WT 203148/Z/16/Z]. Dr Sieniewicz is supported by a BHF Project Grant [PG/16/108/32593]. Prof Rinaldi has received speakers’ fees and honoraria from EBR systems and sits on the steering committee of the SOLVE CRT study [NCT02922036]. Dr Betts would like to acknowledge that he is supported by the Oxford Biomedical Research Centre. There are no other conflicts of interest.

*Presenting author

Table.

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Prevalence and prognostic significance of frailty in patients with chronic heart failure – a comparison of 3 screening versus 3 assessment tools

Shirley Sze,1,2* Pierpaolo Pellicori,1,3 Jufen Zhang,1,4 Joan Weston,1 Andrew L Clark1 (1Department of Cardiology, Castle Hill Hospital, Hull York Medical School (at University of Hull), Kingston upon Hull; 2Cardiovascular Research Centre, University of Leicester, Glenfield Hospital, Leicester; 3Robertson Centre for Biostatistics & Clinical Trials, University of Glasgow & National Heart & Lung Institute, Imperial College London; 4Faculty of Medical Science, Anglia Ruskin University)

Background: Frailty is common in patients with chronic heart failure (CHF) and is associated with adverse outcome, but few data exist.

Purpose: To report the prevalence of frailty, agreement and prognostic significance amongst 3 frailty assessment tools and 3 screening tools in CHF patients.

Methods: Frailty screening tools include: Clinical frailty scale (CFS); Derby frailty index & Acute frailty network frailty criteria. Frailty assessment tools include: Fried criteria; Edmonton frailty score & Deficit index. Since there is no gold standard in evaluating frailty in CHF patients, for each of the frailty tools, we used the results of the other 5 tools to produce a combined frailty index which we used as a ‘standard’ frailty tool. Subjects were defined as frail if so identified by at least 3/5 tools.

Results: 467 consecutive ambulatory CHF patients (67% male, median age 76 (IQR:69–82) years, median NTproBNP 1156 (IQR:469–2463)ng/L) and 87 controls (79% male, median age 73 (IQR:69–77 years) were studied. Prevalence of frailty was higher in CHF patients than in controls (30–52% vs 2–15%, respectively). Compared to non-frail patients, frail patients tended to be older, have worse symptoms, higher NTproBNP and more co-morbidities.

Of the screening tools, CFS had the strongest agreement with assessment tools (kappa coefficient:0.65–0.72, all p<0.001). CFS had the highest sensitivity (87%) and specificity (89%) amongst screening tools and the lowest misclassification rate (12%) amongst all 6 frailty tools in identifying frailty according to the combined frailty index.

During a median follow-up of 559 days (IQR 512–629 days), 82 (18%) patients died. 55% (N=45) of frail patients died of non-cardiovascular causes. Worsening frailty was associated with worse outcome. Amongst frailty tools: CFS and Fried criteria increased model performance for mortality prediction most compared with base model (c-statistics:0.78 to 0.80 for both). Patients who were frail according to CFS had a 9 times greater mortality risk than non-frail patients (Figure).

Conclusion: Frailty is common in CHF patients and is associated with worse outcome. CFS is a simple screening tool which identifies a similar group as lengthy assessment tools and has similar prognostic significance.

Conflicts of interest: None.

*Presenting author

Figure. Kaplan–Meier curve for all-cause mortality by CFS categories.
The RHYTHM-HF study
Simon Beggs (Research Fellow, University of Glasgow, Glasgow)

As the time to pass on the baton draws near, I am delighted to have the opportunity to reflect on my term as the BSH Research Fellow 2016–18. The support of the BSH has enabled me to design, gain funding for (including securing a £429,737 British Heart Foundation clinical study grant) and now execute the RHYTHM-HF research study, which investigates the role of arrhythmias — and cause of death — in heart failure. I look forward to sharing the progress of this research with the Society in my valedictory update!

Novel mechanisms of autonomic dysfunction in chronic heart failure – effects of iron replacement therapy on skeletal muscle metaboreflex and contribution to sympathetic nerve activation. ADIMRAL-HF
Richard Baker (Research Fellow, Bristol Heart Institute, Bristol)

Iron deficiency is a common co-morbidity in heart failure with reduced ejection fraction (HFrEF). Current guidelines recommend treatment of this deficiency with intravenous iron therapy.1 Clinical benefits have been observed with respect to improvements in 6-minute walk distance, cardiopulmonary exercise testing, reduced hospitalisations and reduced symptom burden.2,3 An ongoing large trial is investigating whether correcting iron deficiency in patients with HFrEF improves life expectancy and reduces hospitalisation.4 The physiological basis for the known and potentially beneficial effects of intravenous iron are not clearly understood.

Sympathetic overactivity of the autonomic nervous system (ANS) is a common characteristic of HFrEF.5 One sympathetic afferent reflex that contributes to this process is the metaboreflex. This reflex is activated by the accumulation of metabolites in exercising skeletal muscle. The metaboreflex contributes to the body's response to physical exertion.6 It is overactive in HFrEF.7 This is particularly evidenced by the exaggerated ventilatory, heart rate and vasoconstrictive response to exertion.8,9 Iron deficiency causes changes to skeletal muscle.10 We believe that metaboreflex activity is exaggerated in iron-deficient muscle because of these changes. This is a contributor to the detrimental increased sympathetic drive seen in HFrEF. It is hypothesised that treatment of iron deficiency will lead to a beneficial reduction in sympathetic drive.

The Bristol Cardiodynamics Group has extensive experience of both the direct and indirect assessment of activity of the ANS. We intend to assess muscle sympathetic nervous activity with microneurography.11 This will be performed before and after treatment of iron deficiency. This will be assessed in an iron-deficient group with HFrEF and a matched non-iron deficient HFrEF group. The response to post exercise circulatory occlusion following handgrip exercise will be assessed before and after treatment to identify if there has been a change in the activity of the metaboreflex.

It is hoped that by identifying a change in ANS activity after treatment with intravenous iron, a mechanistic understanding as to the benefit of iron in HFrEF will be derived.

References
The evidence base for diagnosis and management in heart failure is continuously changing, necessitating regular revisions of guidelines. Until recently, the NICE guidelines on the topic were CG108 from August 2010. Since January 2016, the guidelines committee embarked on a review informed by the current and updated evidence base, within the remit determined by the scoping exercise undertaken at the end of 2015. The draft guidelines were reported for consultation early in 2018. Helpful feedback was received from stake-holders including the BSH. This informed revision of the guidelines was signed off by the NICE editor following a peer review, and published on 12 September 2018 as NG106.

They included amendment to the nomenclature.

The past history of myocardial infarction is no longer an indication for referral to the diagnostic heart failure clinic. The latter’s port of entry is exclusively through a rise of the N-terminal pro B-type natriuretic peptide (NTproBNP) >400 ng/L.

The time limits to do trans-thoracic echocardiography and to be seen by the heart failure specialist at 2 and 6 weeks for patients with NTproBNP of >2000 ng/L and 400–2000 ng/L, respectively, were maintained.

The composition of the specialist heart failure multidisciplinary team, its duties, its communication with primary care, and the tasks of primary care in the continuing management and care of the patients with heart failure received detailed recommendations.

Dealing with the complexities of referral to palliative care, the prognostication and dealing with the issue of implantable cardioverter-defibrillators (ICDs) in this context were considered carefully and where appropriate recommendations were formulated.

The treatment algorithm was thoroughly amended for the patients with heart failure with reduced ejection fraction, with the first-line therapy with angiotensin-converting enzyme inhibitors with beta-blockers being enriched in the symptomatic patient by mineralocorticoid receptor antagonists. The second line of therapy comprises variable options depending on the clinical scenario and the severity of the heart failure and includes sacubitril–valsartan, ivabradine, the combined vasodilators of hydralazine and nitrates, and finally digoxin.

The use of cardiac resynchronisation therapy and ICDs is also considered carefully following their respective technology appraisal recommendations. Certain interventions were removed due to the emergence of new evidence questioning their validity except in certain circumstances such as fluid and salt restriction, and oxygen therapy.

The speaker will be reviewing the guidelines over a 20-minute presentation and expects to be subjected to lively questioning by the audience and a selected panel for 45 minutes!

This question time will take the form of a topical debate, chaired by Professor Iain Squire, with questions put to the panel that have been selected prior to the session from those submitted by the audience.

The panel consists of:

- Dr Abdallah Al-Mohammad
- Professor Andrew Clark
- Dr Darren Green
- Dr Paul Kalra

In your delegate pack, you will find a question card. If you would like to pose a question, please complete the question card and place it in the box on the BSH exhibition stand in the Britten Room before 13:15 on Thursday. If you would like to raise your question from the audience, please tick the relevant box and include your name and mobile number on the question card.

During lunch on Thursday (13:15–14:00), the submitted questions will be reviewed and if your question is selected, and you have indicated on your question card that you would like to raise the question yourself, you will be contacted via the mobile number you have provided. You will then be asked to raise your question from the audience during Session 5 (16:15–17:15).
Clinical trials and congress update

John McMurray (Professor of Medical Cardiology, University of Glasgow, Glasgow)

This presentation will review the late breaking trials relevant to heart failure presented in the past year at the American College of Cardiology, European Society of Cardiology and American Heart Association, as well as key publications in the same time frame.

Nurse Forum update

Jayne Masters (Lead Heart Failure Nurse, University Hospital Southampton NHS Foundation Trust, Southampton)

The website for the BSH Heart Failure Nurse Forum was launched in October 2018 (www.heartfailurenurses.org) and has been designed to not only provide educational resources and tools for best practice but also as a mechanism for connecting with other heart failure nurses and the opportunity to share ideas and concerns. I am very proud and excited to be the inaugural Chair of the BSH Heart Failure Nurse Forum and I intend to do my utmost to ensure the forum develops and meets its objectives. The members of the Steering Group are all equally keen to provide professional help and support to all the UK heart failure nurses who do such an amazing job.

ESC Heart Failure Specialist Nurse curriculum

Jillian Riley (Senior Lecturer at the National Heart and Lung Institute, Imperial College London)

An emphasis on the roles of the multidisciplinary team in improving outcome in people with heart failure has been a key feature of the organisation of heart failure services over the past couple of decades. National and international societies have supported these developments, providing guidance, education and research. The publication of the European specialist heart failure curriculum for medical staff in 2014,1 was closely followed by the development of the European heart failure nurse curriculum.2

This presentation will discuss key issues in the development of this curriculum and how the curriculum can be used to support nurses across Europe and beyond to develop their role within the multidisciplinary team.

References
Contemporary issues facing heart failure nurse services

Louise Clayton (Heart Failure Advanced Nurse Practitioner, University Hospitals of Leicester NHS Trust, Leicester)

Heart failure is complex, with increasing prevalence rates and approximately 900,000 people currently living in the UK with this condition. The impact on heart failure specialist nurse services is significant. Our population is ageing and most have multiple complex health needs. 1 million bed days a year are occupied by heart failure patients, by far the largest component of heart failure expenditure. Inequitable access to specialist services continues across the UK with some existing services being considered for decommissioning.

This session will explore some of the challenges we are facing in heart failure nursing services. Recruitment and retention, access to education, funding, and lack of clarity of the heart failure nurse role all contribute to common challenges. Reducing inequity of access to specialist services and careful consideration as to the role of the heart failure specialist nurse, caseload numbers and a more standardised approach to service provision should be made a priority.

As a community of nurse specialists we are fortunate to have a depth of evidence to highlight the benefits of our role, both to patients and the NHS as a whole. Heart failure specialist nurses have a key role in reducing hospital admissions, improving quality of life, improving uptake of medication, supporting patients with self-management and educating the wider multidisciplinary team.

Despite the multiple challenges, there continues to be many examples of contemporary approaches to seamless care provision, innovative ways of supporting primary and community healthcare teams and projects aimed at reducing inequity. Heart failure nurses continue to be at the forefront of heart failure specialist services and as such we need to work together to champion specialist services.

Ventricular tachycardia ablation

Magdi Saba (Consultant, Cardiac Electrophysiology, St George’s University Hospitals NHS Foundation Trust, London)

The abstract for this presentation was not available before going to press.

Atrial fibrillation and heart failure – is ablation the right option?

Anthony Chow (Consultant Cardiac Electrophysiologist, Barts Heart Centre, Barts Health NHS Trust, London)

The incidence atrial fibrillation (AF) is increasing worldwide and AF has a much higher prevalence in the heart failure population. AF is associated with worsening heart failure and increases mortality. Recent clinical trials of catheter ablation for AF in patients with left ventricular impairment have shown significant improvements in hard clinical outcomes in those aggressively treated compared with medical therapy. This may provide justification for a more proactive approach to treat AF in heart failure, rather than passive acceptance of the condition. We examine the current clinical evidence and guidelines for selecting and treating AF in the heart failure population.

There are no abstracts for Session 9
Chronic heart failure (CHF) and type 2 diabetes (T2D) frequently coexist and this is associated with a poor outcome. T2D and associated insulin resistance is often unrecognised in heart failure (HF) patients. Treating patients with concomitant HF and T2D can be challenging as it is difficult to outline an evidence-based diabetic treatment strategy because there have been no randomised trials that have adequately explored the risks and benefits of diabetic therapies in this population. Intensive glucose lowering does not appear to impact on HF outcomes.

Most guidelines recommend metformin as the first-line choice based largely on observational data that show that metformin is associated with lower mortality rates when compared to sulphonylureas or insulin, which are often used as second or third line agents. Thiazolidinediones are associated with a significant risk of HF progression and are best avoided in patients with CHF and T2D. The newer incretin-based therapies (glucagon-like peptide-1 [GLP] agonists and dipeptidyl peptidase 4 [DPP-4] inhibitors) are generally not associated with any HF interaction although a small increase in HF hospitalisation was observed with the DPP-4 inhibitor saxagliptin. The GLP-1 agonist liraglutide has been shown to reduce cardiovascular and all-cause mortality, yet hospitalisation for HF was not significantly reduced. The sodium-glucose co-transporter-2 (SGLT2) inhibitors, empagliflozin and canagliflozin, have both shown in recent trials (EMPA-REG OUTCOME study and CANVAS Program) to reduce HF hospitalisation in patients with established cardiovascular disease or at risk of cardiovascular disease. However, only a minority of participants (approx. 10%) in these trials had CHF. There is now much interest in the mechanisms underlying these observed benefits with several ongoing outcome trials that will examine the effectiveness and safety of SGLT2 inhibitors in patients with HF with reduced ejection fraction and HF with preserved ejection fraction in the absence of T2D.

References

When to anticoagulate

Jane Cannon (Consultant Cardiologist in Cardiac Transplantation and Mechanical Circulatory Support, Harefield Hospital, Harefield)

This is a common conundrum in everyday clinical practice. In this talk, arguments for and against the routine anticoagulation of patients with heart failure will be discussed.

Potassium – friend or foe?

Stephen Pettit (Consultant Cardiologist, Royal Papworth Hospital, Cambridge)

Potassium has a central role in heart muscle cell electrophysiology. Potassium is transported into cells during diastole, creating a difference in concentration between the inside and outside of each cell (resting transmembrane potential). Heart muscle cells are activated during systole by an ‘action potential’ which involves movement of sodium, potassium and calcium ions. Movement of potassium ions defines the shape and duration of the action potential.

Fruit and vegetables are the richest dietary sources of potassium. The western diet is relatively low in potassium but nutritional deficiency is very unusual. Excess potassium is excreted in the distal tubule of the kidney, maintaining serum potassium between 3.5 and 5.3 mmol/L. High or low serum potassium concentrations may arise during a number of disease states and there is a U-shaped relationship between serum potassium concentration and mortality in heart failure.

Heart failure results in activation of the renin–angiotensin–aldosterone system (RAAS). Aldosterone stimulates potassium excretion in the kidney and therefore patients with heart failure tend to develop hypokalaemia. Treatment with loop diuretics further increases potassium loss and can lead to profound hypokalaemia. This is a particular problem in patients with acute decompensated heart failure who are being ‘dried out’. Significant hypokalaemia causes ST segment depression, flattened T waves and U waves. Untreated, patients may develop ventricular tachyarrhythmias or high-grade atrioventricular block.

A reduction in serum potassium of 0.3 mmol/L represents a potassium deficit of around 100 mmol. Dietary intake may help but many patients are prescribed oral potassium supplements (an average banana and a single Sando K tablet both contain around 12 mmol). Pharmacological measures to encourage potassium preservation in the kidney are advisable in patients who are likely to become hypokalaemic, either with RAAS inhibitors (such as angiotensin-converting enzyme inhibitors or mineralocorticoid receptor antagonists) or amiloride.

RAAS inhibitors improve symptoms and prognosis in heart failure and are widely prescribed. They reduce potassium excretion in the kidney and tend to increase serum potassium concentration. However, RAAS inhibitors lead to hyperkalaemia in around 5% of heart failure patients and those with co-existent chronic kidney disease are at particular risk. Hyperkalaemia causes peaked T waves and broadening of the QRS complex. Untreated, severe hyperkalaemia leads to asystole and death. Hyperkalaemia is a common reason for RAAS inhibitor dose reduction or withdrawal.

Potassium levels may be reduced with intravenous glucose, nebulised salbutamol or haemofiltration but will tend to rise again unless the underlying cause is corrected. According to recent NICE guidance, heart failure patients should be advised to avoid salt substitutes that contain potassium. Novel oral potassium binders have been developed and examined in the OPAL-HK, PEARL-HF and HARMONIZE trials. Patiromer and sodium zirconium cyclosilicate may offer the opportunity to maintain a normal serum potassium level and allow heart failure patients to continue to derive prognostic benefit from RAAS inhibitors. These agents are currently being examined by NICE.

Further reading
Diagnosing heart failure in primary care
Clare J Taylor (General Practitioner and NIHR Academic Clinical Lecturer, University of Oxford, Oxford)

Patients with heart failure often present to primary care. Accurate diagnosis and early treatment initiation are important to avoid the need for hospital admission and improve outcomes for patients. In this case study we explore the challenges and opportunities for primary care in the context of current diagnostic pathways and the new NICE chronic heart failure guideline 2018.

CardioMEMS – a novel approach to monitoring heart failure
Andrew Flett (Consultant Cardiologist, University Hospital Southampton NHS Foundation Trust, Southampton)

A case based update on cardioMEMS. Using experience from enrolment in the COAST-OUS study, we will review cardioMEMS cases with learning points. A brief overview of the most up to date studies will be presented and a look to the future of this novel and promising remote monitoring technology.

Managing renal dysfunction/AKI in patients with heart failure
Joe Cuthbert (ST3 Cardiology and Honorary Lecturer, Hull York Medical School, Castle Hill Hospital, Hull)
Andrew Clark (Professor of Clinical Cardiology and Honorary Consultant Cardiologist, Hull York Medical School, Castle Hill Hospital, Hull)

Renal dysfunction in patients with heart failure is common: it is often a consequence of the disease and its treatment, but may also contribute to cardiac dysfunction itself. We present a case of chronic kidney disease and heart failure to highlight the complex interaction between the two conditions.
Dr Abdallah Al-Mohammad MD (Damascus), MD (Aberdeen), FRCP (Edin), FRCP (Lond), FESC, FHFA

Consultant Cardiologist, Sheffield Teaching Hospitals, Sheffield

Dr Al-Mohammad qualified in Damascus University’s Medical School in 1985. He came to the UK in 1987. He did his basic medical training in Birmingham, Haverfordwest and Abergavenny, before gaining the membership of the Royal College of Physician in 1990.

- 2003: Advisory group on the roles of myocardial perfusion scintigraphy on behalf of NICE.
- Regional Adviser for RCP-Edinburgh and Regional Specialty Adviser for RCP-London and the BSE.

Dr Lisa Anderson
Heart Failure Consultant, St George’s Hospital, London

Honorary Reader in Cardiovascular Medicine

Dr Anderson trained at Liverpool Medical School, completing junior doctor rotations in Liverpool and London before joining the London (SW) Cardiology SpR training scheme.

Dr Anderson was BHF Fellow at the Royal Brompton Cardiac MR Unit from 1998 to 2001, developing a method (T2*) for early detection of cardiac iron that is now the International Gold Standard and has led to a significant fall in cardiac deaths in thalassaemia.

Dr Anderson was appointed as Consultant in Heart Failure at St George’s in 2005, and has worked with GP colleagues and commissioners to build up community and hospital heart failure services. In 2016, the St George’s Heart Failure Unit opened, providing specialist nursing, therapist and cardiology care to admitted patients with heart failure. The purpose of this unit is to improve patient experience and outcomes, to better integrate acute with community care and to provide a centre of excellence in which to train heart failure nurses and fellows.

Dr Anderson was appointed as Councillor to the BSH Board from 2015 to 2017 and as Observer to the Board 2017–2019. Dr Anderson has ongoing research interests in heart failure and CMR.

Dr Richard Baker
Research Fellow, Bristol Heart Institute, Bristol

Dr Richard Baker is undertaking an MD with the University of Bristol. After initially graduating from Bristol Medical School he briefly ventured outside of the South West before returning for his medical and cardiology training. Currently out of programme in order to pursue his degree he intends to return to resume his clinical training specialising in heart failure and devices.

Mrs Carys Barton
Clinical and Operational Lead for Cardiology, Hertfordshire Community NHS Trust, Hertfordshire

Lead Nurse for Heart Failure

- BSH Observer.
- Member of BSH Nurse Forum steering group.
- Passionate in the development and education of Heart Failure Specialist Nurses.
- Special interest in palliative care in heart failure.
- Carys has worked as a Senior Cardiology Nurse in several specialist centres since 1990.

Mrs Jo Bateman
Lead Cardiology Pharmacist/Deputy Clinical Services Manager, Countess of Chester Hospital NHS Foundation Trust, Chester

Jo has worked as Lead Cardiology Pharmacist at the Countess of Chester Hospital for 14 years. Since 2012 she has worked as an independent prescribing practitioner in cardiology. Her prescribing role was initially within the heart failure team reviewing patients on the wards and in clinics. Her role subsequently developed and involves specialist initiation of sacubitril valsartan, day case IV diuretics and IV iron. Jo also works alongside the cardiologists on CCU and has recently extended her role into generalist cardiovascular review clinics to support the cardiologists.

Jo is Chair of the Pharmacist Forum for the Cardiology and Stroke North West Strategic Clinical Network (SCN) and been involved in developing several regional guidelines. She has presented at national pharmacy conferences including UKCPA autumn symposia (2012, 2013), HPE Live (2014, 2017) and presented a poster at the 2015 ESC HF conference in Seville. Jo has delivered teaching sessions for CPPE, SCN Northwest and guest lectured at Chester University and LJMU. She is a committee member of the UKCPA Heart Failure group and was involved in the Advisory Group for the NCEPOD Acute Heart Failure study and two NICE scoping consultations.

Dr John Baxter
Consultant Physician, Sunderland Royal Hospital, Sunderland

Dr John Baxter is a Consultant Geriatrician and Clinical Lead for heart failure in older persons at Sunderland Royal Hospital. He is an Observer on the Board of the BSH and is a past Treasurer of the British Geriatric Society Cardiovascular Section.
Dr Simon Beggs  
*Research Fellow, University of Glasgow, Glasgow*

Dr Simon Beggs is a Research Fellow in Glasgow, currently out of clinical training in order to pursue a PhD examining the role of arrhythmias in people with heart failure. After graduating from Edinburgh University Medical School, his early clinical training was in the West of Scotland, including a fellowship with the Scottish National Advanced Heart Failure Service based at the Golden Jubilee National Hospital. He was named as the 2015 BSH Research Fellow. Upon completion of his PhD he intends to resume clinical training, with a specialist interest in heart failure.

Dr Daniel Bromage  
*NHRI Clinical Lecturer at King’s College London  
Specialty Trainee in Cardiology at King’s College Hospital  
NHS Foundation Trust, London*

Dr Daniel Bromage is an NIHR Clinical Lecturer at King’s College London and a Specialty Trainee in cardiology at King’s College Hospital NHS Foundation Trust. He completed his MBChB with honours at the University of Bristol in 2006 and undertook postgraduate training in the South West and London. He was awarded a PhD from University College London in 2016 for research into the role of stromal derived factor-1α in cardioprotection, which was funded by a Medical Research Council Clinical Research Fellowship. His Clinical Lectureship focuses on remodelling after myocardial infarction, using both laboratory and human studies, with particular emphasis on the modulation of transcription factors implicated in inflammation. His interests include heart failure, CMR and myocarditis. He has won international prizes, published several peer-reviewed articles and is a Fellow of the Higher Education Academy.

Dr Jane Cannon  
*Consultant Cardiologist in Cardiac Transplantation and Mechanical Circulatory Support, Harefield Hospital, Harefield*

Dr Jane Cannon was named the inaugural BSH Fellow in 2013 and has completed her PhD looking at the association between heart failure and cognitive impairment at the University of Glasgow under the supervision of Professor JJV McMurray. After sub-specialising in heart failure and complex cardiac devices she gained her CCT in Cardiology in January 2018 before moving to London. She has now been appointed Locum Consultant Cardiologist in Cardiac Transplantation and Mechanical Circulatory Support at Harefield Hospital. She is an Observer to the Board of the BSH representing HF trainees and newly appointed HF consultants in the UK. She is also the UK Heart Failure Specialist of Tomorrow representative of the Heart Failure Association, within the European Society of Cardiology.

Dr Parminder Chaggar  
*Consultant Cardiologist, Royal Cornwall Hospital, Truro*

Parminder Chaggar graduated from the University of Sheffield Medical School in 2003 and after taking ‘the scenic route’ through training, gained his CCT earlier this year. He has previously served as the BSH Trainee Rep, and chaired the UK Heart Failure Trainee Network and helped develop the ESC heart failure accreditation. He is now a Consultant Cardiologist in Cornwall where he is clinical lead for heart failure and also a complex device implanter. His new heart failure team are patiently training this northerner in ‘the Cornish way’, in which he is making far better progress than with his surfing.

Dr Anthony Chow  
*Consultant Cardiac Electrophysiologist, Barts Heart Centre, Barts Health NHS Trust, London  
Clinical lead for cardiac devices at Barts  
Honorary Senior Lecturer at Queen Mary University of London*

Dr Chow works with a large team of arrhythmia and device specialists to provide tertiary services for a population of 5 million. He covers patients from east central London, Reading and Barnet hospitals. Active research interests include treating complex arrhythmias and device therapy for heart failure patients. He is the pacing and devices lead for 4 years. He is a supervisor for PhD research students and an examiner for the University of London.

Professor Andrew Clark  
*Professor of Clinical Cardiology and Honorary Consultant Cardiologist, Hull York Medical School Castle Hill Hospital, Hull  
Professor of Clinical Cardiology and Honorary Consultant Cardiologist, Hull York Medical School Castle Hill Hospital, Hull*

Professor Clark was educated at Pembroke College, Cambridge, and trained in medicine at the Westminster Medical School. He trained in cardiology at Manchester Royal Infirmary, the National Heart and Lung Institute (London) and the Western Infirmary, Glasgow. Whilst at the National Heart and Lung Institute, under the guidance of Philip Poole-Wilson and Andrew Coats, he developed an interest in exercise physiology, particularly in patients with heart failure. He became a Professor in 2009. He is responsible for running the heart failure service in Hull, and he plays an active role in the day-to-day provision of cardiology services to the population of Hull and the East Riding of Yorkshire. Professor Clark is an internationally recognised expert in heart failure, and is a frequently invited speaker to conferences of all sorts. He has published over 300 papers, principally in the field of heart failure, but including papers on primary care and even contraception.

He is Past Chair of the BSH, and is a member of the working groups for Heart Failure, and Cardiac Rehabilitation and Exercise Physiology in the European Society of Cardiology. He is also Past Chair of the Heart Failure Alliance, which led on advising the All-Party Parliamentary Group on Heart Failure in its production of its report on heart failure. He chairs steering committees for multicentre clinical trials, is on the National Audit for Heart Failure steering group, and is on the editorial boards of several national and international medical journals.

Mrs Louise Clayton  
*Heart Failure Advanced Nurse Practitioner, University Hospitals of Leicester NHS Trust, Leicester*

I began my career in nursing in 1996 and spent four years working on a cardio-renal acute medical ward in Leicester. During this time my passion to improve the lives of patients living with heart failure was ignited. The ‘revolving door’ experience of those living with heart failure was all too apparent.

In 2000 I worked alongside Professor Iain Squire in a research trial which explored the effectiveness of heart failure specialist nurse interventions. I then spent almost 14 years establishing and developing the Leicester City Community Heart Failure Nursing Service. In doing this I had the opportunity to work alongside GPs and Acute Sector Consultants to provide that important bridge between providers. I have held a number of Honorary lecturer posts, teaching across the breadth of the multidisciplinary team, including facilitating the Leicester programme of the Caledonian heart failure management course.

The last five years have been spent developing an Acute Heart Failure Service. Along with heart failure consultants the team now run a 72 hour urgent heart failure service,
have a 27-bed dedicated heart failure unit and specialist in-patient nursing team with excellent links with palliative care, rehabilitation and older person champion teams. I am a steering group member of the BSH Nurse Forum and a Board member of the BSH.

Throughout my career I have maintained my clinical focus. Seeing patients every day of the week and gaining the most satisfaction from the relationships forged during these times. Improving the lives of those affected by heart failure continues to be my passion.

**Professor John GF Cleland MD, PhD, FRCP, FACC, FESC**
*Director of the Robertson Centre for Biostatistics and Clinical Trials, Institute of Health & Well-Being, University of Glasgow, Glasgow*

Professor Cleland was appointed the Director of the Robertson Centre for Biostatistics and Clinical Trials in 2016, an internationally accredited Clinical Trials Unit offering a complete service both to academic clinicians and industry. The special area of expertise is cardiovascular disease but includes all branches of medicine and social sciences.

He qualified from the University of Glasgow and completed his training at St. Mary’s, Paddington and Hammersmith Hospitals, London, in 1989. In 1994, he was awarded a Senior Fellowship by the British Heart Foundation, moving back to Glasgow. He was appointed Professor of Cardiology at the University of Hull in 1999 and subsequently, in 2013, at the National Heart & Lung Institute, Royal Brompton and Harefield Hospitals, Imperial College London, where he retains a part-time contract.

His main area of interest is in heart failure, extending from its epidemiology and prevention, to Phase II–IV randomized trials through to the development and implementation of guidelines. Particular current interests include the influence of myocardial substrate on therapeutic response, congestion and inflammation as novel therapeutic targets, telereporting and theranostics.

He is a Past Chairman of the ESC Working Group on Heart Failure and of the BSH, founded the European Journal of Heart Failure and chairs the Academic Committee of the National Heart Failure Audit and the National Clinical Specialties Research Group on Heart Failure. He has published more than 800 papers in peer-reviewed journals and is a Thomson Reuters Highly Cited Researcher.

**Dr Peter Cowburn**
*Consultant Cardiologist, University Hospital Southampton, Southampton*

Dr Peter Cowburn is a Consultant Cardiologist with a specialist interest in heart failure at University Hospital Southampton. His MD thesis was undertaken in Glasgow studying the haemodynamic effects of endothelin and endothelin receptor antagonists in patients with chronic heart failure (CHF).

Following SpR training in the Wessex region, he completed an 18-month heart failure/device fellowship in Toronto, Canada, where he trained in cardiac resynchronisation therapy (CRT). He reported the first case series of intrathecal CRT and has an interest in the haemodynamic and renal effects of CRT. He was Deputy Chair of the BSH in 2007–9, having served as a Councillor to the Board in 2005–7. At Southampton General he helped establish a novel nurse-led inpatient heart failure service, which led to a dramatic reduction in inpatient mortality. He established an inpatient ultrafiltration programme in 2010, the first in the UK. He was a member of the working group who published guidelines for referral and assessment of adults for cardiac transplantation (Heart 2011). He was one of the document reviewers for the ESC guidelines for the diagnosis and treatment of acute and chronic heart failure 2012. He was reappointed to the BSH Board as a Councillor in 2015 and elected Treasurer in 2017. Peter continues to lead the heart failure service in Southampton which continues to develop and now offers an innovative and fully integrated community heart failure service. We also have a growing CardioMEMS programme and are currently lead recruiters to the multicentre COAST registry.

**Professor Martin Cowie**
*Professor of Cardiology, Imperial College London*
*Horary Consultant Cardiologist, Royal Brompton Hospital, London*

Martin Cowie is Professor of Cardiology at Imperial College London and Honorary Consultant Cardiologist at the Royal Brompton Hospital, London. A founding member and past-Chair of the BSH, Professor Cowie has also been a Board Member (and Chair of the Education Committee) of the Heart Failure Association of the European Society of Cardiology (ESC). From November 2016, he has been a Non-Executive Director of the NICE in England. He has advised that organisation on its heart failure guidelines and quality standards.

He sits on the Cardiovascular Round Table and the EU Affairs Committee of the ESC, and leads its work in e-health, recently being appointed as Chair of the e-health Unit at the European Heart Health Institute in Brussels. He was shortlisted for the NHS Digital Champion (Leadership) Award in 2017.

Professor Cowie’s studies and reviews have been featured in a variety of peer-reviewed journals, including The New England Journal of Medicine, The Lancet, Circulation, JAMA, European Heart Journal, British Medical Journal, and the European Journal of Heart Failure. He has contributed chapters to many books, and has written a book for patients entitled *Living with Heart Failure – A Guide for Patients*. His research interests centre on the use of new technologies to improve the outcome, efficiency and experience of care for people living with heart failure. Professor Cowie is a Fellow of the Royal College of Physicians of London, and Edinburgh, and a Fellow of the European Society of Cardiology.

**Dr Joe Cuthbert**
*ST3 Cardiology and Honorary Lecturer, Hull York Medical School, Castle Hill Hospital, Hull*

Joe Cuthbert graduated from the Hull York Medical School in 2012 and has trained and studied in the area ever since. He is currently a cardiology registrar working at Castle Hill Hospital. As a sleep-deprived father of three children under the age of 4, who will be submitting his MD thesis ("Venous congestion in humans") in the coming fortnight, he will be very grateful for a sympathetic and generous audience.

**Dr Andrew Flett**
*Consultant Cardiologist, University Hospital Southampton NHS Foundation Trust, Southampton*

Appointed at University Hospital Southampton NHS Foundation Trust in 2013, Dr Andrew Flett is a consultant cardiologist with a specialist interest in heart failure, devices and cardiovascular magnetic resonance (CMR). During his heart failure training and research at University College London Hospital he also trained in cardiomyopathy at the Heart Hospital. He has published widely in CMR and cardiomyopathy related research. University Hospital Southampton is one of the leading Cardiomems sites in the UK.
Mr Paul Forsyth  
**Lead Pharmacist – Clinical Cardiology (Primary Care) / Heart Failure Specialist, West Glasgow ACH, Glasgow**

Paul worked as a Heart Failure Pharmacist from 2004 before becoming Lead Pharmacist for Clinical Cardiology in Primary Care in 2016. He is an Observer to the Board of the BSH and co-chair of the UK Clinical Pharmacy Association (UKCPA) Heart Failure Group. In a clinical capacity, he has developed pharmacist-led clinics for post-MI patients with left ventricular systolic dysfunction across seven hospitals and adjoining primary care localities in NHS Greater Glasgow & Clyde. He is currently also rolling out this service across NHS Scotland. He has previously presented research at European Society of Cardiology, American Heart Association, BSH and the North American Primary Care Research Group meetings. He is an honorary lecturer at the University of Strathclyde Pharmacy School and teaches annually at the Heart Failure Nurse Module at Glasgow Caledonian University. Along with his UKCPA colleagues, he recently published a curriculum for pharmacists specialising in heart failure.

**Professor Roy Gardner**  
**Consultant Cardiologist and Clinical Lead, Scottish National Advanced Heart Failure, Golden Jubilee National Hospital, Glasgow**  
**Honorary Professor, University of Glasgow**

- Deputy Chair: BSH.
- Specialist interest in advanced heart failure, cardiac transplantation, mechanical circulatory support, and complex devices (ICDs and CRT).
- Author/Editor: Oxford Specialist Handbook of Heart Failure, and Oxford Textbook of Heart Failure.
- Active research profile in heart failure, complex devices, and biomarkers.
- Editorial advisory board: Biomarkers in Medicine.
- ESC: patient care committee, national heart failure societies committee, and advanced heart failure curriculum committee member.
- NICE: scientific advisor/clinical expert – interventional procedures programme (CRT/ICD, EndurAlife, and CardioMEMS), and scoping workshops (sacubitril–valsartan, TYRX and s/c furosemide).

**Dr Darren Green**  
**Consultant Nephrologist and Acute Physician, Salford Royal Hospital, Salford**  
**Honorary Senior Lecturer, University of Manchester**

Darren Green is a Consultant Nephrologist and Acute Physician at Salford Royal Hospital, and an Honorary Senior Lecturer at the University of Manchester. He has a keen clinical and academic interest in the relationship between heart failure and both chronic kidney disease (CKD) and acute kidney injury. Within this interest, he holds an MDT clinic for patients with heart failure and CKD, as well as a small ambulatory care and self-referral programme to the acute medical services. His research group explores the epidemiology of cardiovascular risk in CKD and atherosclerotic renovascular disease, his own focus being on echocardiography in these patients. Projects being explored by current Research Fellows include the interplay between heart failure and CKD leading to hospital acquired acute kidney injury, longitudinal changes in echocardiographic strain patterns in haemodialysis patients, and the eternal search for novel and clinically useful laboratory biomarkers of cardiac risk in patients with CKD. Darren and his team are always looking for new collaborations.

**Dr Suzanna Hardman**  
**Consultant Cardiologist, Whittington Hospital, London**

Dr Hardman qualified from UCL & UCLH, London, before training in cardiology. Following a PhD, which explored time-dependent heart muscle function, she won a young investigators’ prize from the BCS and then an Intermediate Fellowship from the BHF. Thereafter, she was appointed consultant/senior lecturer at the Whittington Hospital & UCL to improve cardiovascular care across primary, secondary and tertiary care. Over the ensuing 20 years Dr Hardman has developed innovative heart failure (HF) services locally, and through a diversity of national roles has contributed to the growing awareness of HF and the changes that underpin the improving HF care across the UK. Repeatedly elected to the Board of the BSH, including as Chair (2011–2013), Dr Hardman has worked closely with numerous professional societies and diverse others to improve HF care. She was a member of the NICE Guideline Development Group for Chronic Heart Failure (2010), Acute Heart Failure (2014) and related Quality Standards (2011 and 2015), and the recently published 2018 Chronic Heart Failure update, and is a member and deputy clinical lead of the Steering Committee of the National HF Audit. In Europe an FP7 grant to develop a HF summary through SemanticHealthNet has extended her work within e-Cardiology.

Dr Hardman has advised and works with the BSH, BCS, SAC, RSM and others on the HF curriculum, training and revalidation, alongside work with the HFA of the ESC in Europe.

**Mr Nick Hartshorne-Evans**  
**Chief Executive (Founder), Pumping Marvellous Foundation**

A successful entrepreneur and business owner Nick Hartshorne-Evans was diagnosed with heart failure in January 2010 at 39. His experience as a patient stimulated him into developing the only dedicated patient led heart failure charity in the UK, the Pumping Marvellous Foundation. The Pumping Marvellous Foundation manages the world’s largest online community of heart failure patients and heart failure nurses through their innovative and rich data communities on Facebook. The Foundation currently supplies 200 NHS teams with patient information.

Nick regularly engages and involves himself in both Global, European, National and Regional patient advocacy along with delivering patient led collaborative solutions at a local level.

- Patient expert with NICE on Technology Assessments (Pharma/MEDTECH).
- Patient representative for the steering committee of the NICE Chronic Heart Failure Guidelines 2018.
- GM and East Cheshire Cardiac Network Community Heart Failure Project committee member.
- Pan London Heart Failure steering group member.
- Member of the Scottish Heart Failure Hub.
- Observer – National Advisory Committee for Heart Disease – Scotland.
- Patient expert for several high profile NIHR funded research studies and programmes.
- Board Advisor to the Canadian HeartLife Foundation.
- Worked with European Society of Cardiology’s Heart Failure Association as a patient expert, BSH amongst others.
Nick is regularly consulted on the “patient opinion” both by key stakeholders and at conferences. His peers and partners across the health channels see him as a “Global Patient Opinion Leader” and an “over the horizon thinker.”

**Dr Rosie Heath**  
*Cardiology GPSI, North East and West Devon CCG, Plymouth*  
After graduating from University College Hospital London I chose a career in general practice. My lifelong interest in coronary prevention led me to become the Vascular Lead for Devon CCG where I worked on reducing inequalities in service provision and service re-design of the stroke, cardiac rehabilitation and heart failure pathways. Following training as a Cardiac GPSI, I established a community cardiology service in Plymouth which chiefly specialises in the diagnosis and management of heart failure but also sees patients with simple rhythm problems and intermediate risk chest pain. I have also developed cardiology referral guidelines for primary care and triage of all cardiology referrals into Derriford Hospital. I am actively involved in teaching for the Peninsula Medical School and cardiology education for primary care clinicians in the South West.

**Dr Mark Juniper**  
*Consultant in Respiratory and Intensive Care Medicine, Great Western Hospital, Swindon*  
Clinical Co-ordinator National Confidential Enquiry into Patient Outcome and Death (NCEPOD)  
Dr Juniper qualified from St Bartholomew’s Hospital, London in 1989. He undertook training posts in London, Leeds and Oxford, and was appointed to his current post in 2000. He is trust lead for quality. He has worked as clinical co-ordinator at NCEPOD since 2012. He co-ordinated the NCEPOD study of acute heart failure admissions and will present the key findings at the meeting.

**Dr Paul Kalra**  
*Consultant Cardiologist, Portsmouth Hospitals NHS Trust, Portsmouth*  
Paul Kalra is a consultant cardiologist with specialist interest in heart failure at Portsmouth NHS Trust. He has championed local heart failure services, developing an integrated team of heart failure nurse specialists across primary and secondary care and initiating local ICD and CRT implantation. He has developed and leads a cardiovascular research programme in Portsmouth. Paul has been on the BSH Board since 2009, and was appointed as Chair in November 2017. He co-founded the Cardiorenal Forum, which held its 12th annual meeting in October 2017. Paul Kalra is Chief Investigator for the British Heart Foundation funded ‘IRONMAN’ study. This is a UK interventional study of intravenous iron in chronic heart failure that will recruit 1300 patients across 70 sites.

**Professor Chim Lang**  
*MD, FRCP (Lond), FRCP (Edin), FACC*  
*Consultant Cardiologist, Clinical Pharmacologist and Professor of Cardiology at University of Dundee, Dundee*  
Professor Lang is a Consultant Cardiologist and Clinical Pharmacologist and Professor of Cardiology at University of Dundee. He trained in both cardiology and clinical pharmacology in the UK and in the USA, where he was a Merck Fellow at Vanderbilt University, Nashville, and a Fulbright Scholar at Columbia University, New York. His patient-oriented research takes a multidisciplinary approach to the understanding of the pathophysiology of heart failure and cardio-metabolic diseases. He leads an integrated cardiovascular research laboratory dedicated to translational research and in the development of biomarkers and novel treatment strategies in patients with cardiovascular diseases. A wide range of funding bodies including the British Heart Foundation, MRC, Chief Scientist Office, Chest Heart and Stroke Scotland, Tenovus and the European Commission funds his research. He is and has been involved in the editorial boards of several scientific journals including *Cardiovascular Therapeutics* (Joint Editor-in-Chief), *Heart* (Associate Editor), *Clinical Science* (Associate Editor) and *Current Clinical Pharmacology*. He is Chair of the Heart Failure Working Group of NHS Tayside.

**Dr Ian Loke**  
*Consultant Cardiologist, Glenfield Hospital, Leicester*  
Dr Ian Loke is a Consultant Cardiologist at Glenfield Hospital in Leicester and has close to 15 years’ clinical experience in cardiology. He is the local trust lead for the heart failure service and is also the regional network lead for heart failure. Dr Loke has a keen interest in evolving the provision of patient care, highlighted by his establishment of the heart failure unit in Glenfield Hospital with both a dedicated inpatient ward and a 72hr access heart failure clinic. This has led to major improvements in patient care since its inception. He is actively involved in clinical trials involving both novel drugs as well as implantable cardiac devices. His commitment to advancing care is further evidenced by his continued involvement in educational initiatives across primary and secondary care.

In addition to his active participation in clinical research and education, Dr Loke has co-authored a number of articles with a focus on the screening and diagnosis of patients with left ventricular systolic dysfunction and heart failure, culminating in a thesis awarded with distinction. The value of his research has seen him present his findings at key medical congresses, including the European Society of Cardiology Congress. Outside of work, he is a chauffeur to his two children and, when he finds the time, runs (or plods) to forget about work.

**Mrs Annie MacCallum**  
*Former Head of Specialist Services, Gloucestershire Care Services NHS Trust, Gloucestershire*  
As an experienced heart failure nurse specialist, Annie continues to promote the key role of the nurse specialist in line with the latest evidence in heart failure management and national guidance in the development of services. Following her retirement from the NHS, Annie continues to support specialist nurses providing clinical supervision and career coaching. Annie is a past member of the Board of the BSH and the British Association for Prevention and Cardiac Rehabilitation.
Mrs Jayne Masters  
Lead Heart Failure Nurse, University Hospital Southampton  
NHS Foundation Trust, Southampton

- 32 years working as a trained nurse, 13 years as a heart failure specialist nurse.
- One of the original BHF funded community heart failure nurses.
- In 2008 appointed to develop an inpatient heart failure service in Southampton which was one of the first in the country.
- Has been a member of the Board of the BSH for the past 7 years.
- Member of the Guideline Development Group for the NICE Acute Heart Failure Guidelines.
- 2014 awarded a doctoral fellowship with CLARHIC Wessex.
- Research interests: specialist multidisciplinary teams and factors that influence heart failure management.
- Mantra “right care, in the right place by the right person”.

Professor Theresa McDonagh  
Consultant Cardiologist, King’s College Hospital, London

Theresa McDonagh is a Consultant Cardiologist and Clinical Lead for Heart Failure at King’s College Hospital, London.

Her research interests are in clinical heart failure, in particular the epidemiology of heart failure and left ventricular dysfunction, and the role of biomarkers in both the diagnosis and prognosis of heart failure, and in the delivery of heart failure care. She is the Clinical Lead for the National Heart Failure Audit.

Professor John McMurray MB ChB (Hons), MD, FRCP, FESC, FACC, FAHA, FRSE, FMedSci  
Professor of Medical Cardiology, University of Glasgow  
Deputy Director (Clinical) of the Institute of Cardiovascular and Medical Sciences at the University of Glasgow  
Honorary Consultant Cardiologist at the Queen Elizabeth University Hospital, Glasgow

John McMurray is Professor of Medical Cardiology and Deputy Director (Clinical) of the Institute of Cardiovascular and Medical Sciences at the University of Glasgow and Honorary Consultant Cardiologist at the Queen Elizabeth University Hospital, Glasgow.

Dr Ify Mordi  
Clinical Lecturer and Specialty Registrar in Cardiology, University of Dundee, Dundee

Dr Ify Mordi is an NHS Education for Scotland/Chief Scientist Office Clinical Lecturer in Cardiology at the University of Dundee. He obtained his MD on the ‘Clinical Utility of Cardiovascular Magnetic Resonance’ at the University of Glasgow for which he was awarded the Bellahouston Medal in 2015 for the best doctoral thesis in Medicine. He obtained a Scottish Clinical Research Excellence Development (SCREDS) clinical academic training post in Dundee, before obtaining an externally-funded NES/CSO Postdoctoral Lectureship through national competitive application in 2017.

His research interests focus on the application of clinical data such as imaging and genomics in heart failure. He has had recognition of his research including awards from the European Society of Cardiology and the British Cardiovascular Society. As well as his research interests, Dr Mordi has sub-specialty clinical interests in heart failure and multi-modality imaging.

Dr Stephen Pettit  
Consultant Cardiologist, Royal Papworth Hospital, Cambridge

Dr Stephen Pettit studied medicine at the University of Newcastle upon Tyne. He trained in Cardiology in Glasgow, Liverpool and Cambridge. He has worked as a Consultant Cardiologist at Papworth Hospital since 2014. He is involved in the assessment of patients with advanced heart failure for transplantation and mechanical circulatory support, and in the care of these patients after surgery. In addition, he is involved with implantation, optimisation and follow-up of patients with complex pacemakers and defibrillators. He is interested in communicating clearly and honestly with patients, carers and colleagues. He is also interested in escaping hospital to spend time climbing and cycling. He can be followed on Twitter @drstephenpettit.

Dr Jennifer Quint MSc, PhD, FHEA, FRCP  
Reader in Respiratory Epidemiology at the National Heart and Lung Institute (NHLI), Imperial College London  
Honorary Consultant at the Royal Brompton Hospital, London

Dr Quint received her BSc MBBS degrees from the University of London, UK, before going on to gain a PhD from University College London and an MSc in Epidemiology from the London School of Hygiene and Tropical Medicine, UoL. Dr Quint is currently a Reader in Respiratory Epidemiology at the National Heart and Lung Institute (NHLI), Imperial College London and an Honorary Consultant at the Royal Brompton Hospital in addition to being a Fellow of the Higher Education Academy and Royal College of Physicians. Furthermore, she leads a clinical epidemiology research group covering various areas of respiratory and cardiovascular disease. Her work centres largely on the use of electronic health records to study COPD and other chronic respiratory diseases, including bronchiectasis and asthma. The majority of this work has been on exploring both the effect of COPD exacerbations on vascular outcomes and the relationship between environmental factors and exacerbations of COPD. She partners with the Royal College of Physicians and is Analysis Lead for the National Asthma and COPD Audit Programme. Dr Quint was awarded a COPD Rising Star award at COPD10 in 2016 as well as being “Highly Commended” at the BMA Medical Book Awards for co-authoring the Eureka: Respiratory Medicine textbook. She currently serves as an associate editor for Thorax, is secretary of the Epidemiology group of the European Respiratory Society and the Information Governance Trustee for the British Thoracic Society.

Dr Jillian Riley PhD, RN, RM  
Senior Lecturer at the National Heart and Lung Institute, Imperial College London

Dr Jillian Riley is a Senior Lecturer at the National Heart and Lung Institute, Imperial College London, where she has developed an MSc programme in Cardiovascular & Respiratory healthcare.

Jill trained as a nurse in London and gained clinical experience in the UK and North America. Her PhD was in innovative patient-centered monitoring for patients with heart failure. With a particular interest in supporting the delivery of cardiac care, Dr Riley was instrumental in the development of the British Association for Nursing in Cardiac Care (BANCC) and past President of the association. More recently Jill sat on the Executive Committee of the board of the European Heart Failure Association of the ESC.

Dr Riley successfully led the development of the European Heart Failure Nurse Curriculum (https://doi.org/10.1002/ejhf.568).
Dr Joel Rose  
Chief Executive, Cardiomyopathy UK  

Joel Rose is Chief Executive of Cardiomyopathy UK (www.cardiomyopathy.org) the national charity for people affected by cardiomyopathy and myocarditis. The charity provides a range of support services including a nurse lead helpline, peer support groups, information events and materials. The charity also delivers clinical education events, raises awareness amongst the general public, supports research and works with other organisations to improve access to quality treatment.  

Joel co-chairs the Alliance for Heart Failure, a coalition of charities, patient groups, professional bodies and healthcare companies working together to raise the profile of heart failure in Government, the NHS and the media. He also participates in European and international patient lead heart failure initiatives.  

Joel is a charity professional and volunteer with over 20 years’ experience in the charitable sector, working and volunteering with a range of patient organisations providing support and advocating for people struggling with physical and mental health issues.

Dr Joy Ross  
Consultant in Palliative Medicine, St Christopher’s Hospice, London  

Dr Joy Ross in a consultant in Palliative Medicine at St Christopher’s Hospice, London. She trained at Guys and St Thomas’ NHS Foundation Trust and obtained a PhD in clinical genomics at Imperial College London. She previously work as palliative care consultant for the Royal Marsden and Royal Brompton Palliative Care Service. Her clinical role at St Christopher’s Hospice is predominately with the community palliative care team, including a service for frail elderly patients. As part of this work, she was clinical lead for an integrated pilot service between palliative care and cardiology for patients with end-stage heart failure.

Dr Magdi Saba  
Consultant, Cardiac Electrophysiology, St George’s University Hospitals NHS Foundation Trust, London  

This biography was not available before going to press.

Dr Peter Savill  
GPSI Cardiology, Mid Hampshire Healthcare, Solent NHS Trust and University Hospital Southampton  

Peter studied medicine in London, trained in anaesthesia and intensive care and then moved to Hampshire to train as a GP where he has worked as a GP principal until earlier this year. Over the past 14 years he has been instrumental in the development of community cardiology services in the Wessex region and now having left general practice spends his time working as a community cardiology specialist in both Mid Hampshire and Southampton. His main interests are in echocardiography, including stress echo, heart failure, valvular heart disease and the development of community cardiology services. He is an accredited member of the British Society of Echocardiography and writes regularly on cardiology topics for The Practitioner journal.

Dr John Sharp  
Consultant Clinical Psychologist, Golden Jubilee National Hospital, Glasgow  

John completed both his undergraduate Psychology degree and Doctorate in Clinical Psychology at the University of Glasgow where he is an honorary research fellow following some not-especially-noteworthy forays into academia and clinical teaching. He has worked as a clinical psychologist within cardiac settings since qualifying in 2004. He is a Consultant Clinical Psychologist within the Scottish National Advanced Heart Failure Service at the Golden Jubilee National Hospital and is enthusiastic if not always effective in his efforts to improve psychological care for people with heart failure. He desperately, and somewhat pathetically, attempts to deny his advancing years by running more miles than can ever be healthy and racing marathons that he can’t ever win. He struggles to take writing profiles about himself seriously.

Dr Ben Sieniewicz  
Research Fellow, King’s College London  
Wessex Cardiology Registrar  

Dr Ben Sieniewicz was awarded a Wessex Cardiology NTN in 2012 after graduating from Sheffield University in 2008. He undertook Foundation and CMT training in the Severn Deanery. After completing his core cardiology training he applied to enter a period of research at King’s College London and is (gradually) writing a PhD under the supervision of Professor CA Rinaldi evaluating optimal LV pacing site selection. He was awarded a British Heart Failure Project Grant in 2016. Dr Sieniewicz will return to the Wessex Cardiology rotation in January 2019 and will take up the Heart Failure Fellowship post at Queen Alexandra Hospital, Portsmouth.

Professor Iain Squire  
Consultant Physician at the University Hospitals of Leicester (UHL) NHS Trust, Leicester  
Professor of Cardiovascular Medicine, University of Leicester  

Iain Squire qualified in Medicine from Glasgow University, UK, in 1987. His early training took place in Glasgow, where he held position as Lecturer, and completed MD studies into the haemodynamic and neurohumoral response to initiation of ACE inhibition in patients with heart failure. Professor Squire was appointed as Lecturer in Medicine at the University of Leicester in 1995, and as Senior Lecturer in 1998. A personal Professorial Chair was awarded in 2009. Professor Squire is Consultant Physician at the University Hospitals of Leicester (UHL) NHS Trust where his clinical responsibilities include a 19-bed coronary care unit at Glenfield General Hospital, a busy tertiary cardiology centre. With colleagues, Professor Squire runs an outpatient heart failure service, which includes an urgent heart failure service; a nurse-led clinic; and an inpatient service, which includes a 27-bed heart failure unit and seven specialist nurses led by an advanced nurse practitioner. Professor Squire was a Councillor to the BSH from 2001 to 2003, Treasurer from 2009 to 2011, Deputy Chair from 2011 to 2013 and Chair of the Society from 2015 to 2017. Professor Squire is also Vice-Chair of the NICE Technology Appraisal Committee A.

His research interests include: natriuretic peptides and other cardiac biomarkers; the epidemiology of heart failure; prognostic markers in heart failure and acute coronary syndromes; and the influence of glycaemia and diabetes on prognosis in coronary artery disease. Iain has authored over 190 scientific papers in peer-reviewed journals, and several book chapters.

Dr John Sharp  
Consultant Clinical Psychologist, Golden Jubilee National Hospital, Glasgow  

John completed both his undergraduate Psychology degree and Doctorate in Clinical Psychology at the University of Glasgow where he is an honorary research fellow following some not-especially-noteworthy forays into academia and clinical teaching. He has worked as a clinical psychologist within cardiac settings since qualifying in 2004. He is a Consultant Clinical Psychologist within the Scottish National Advanced Heart Failure Service at the Golden Jubilee National Hospital and is enthusiastic if not always effective in his efforts to improve psychological care for people with heart failure. He desperately, and somewhat pathetically, attempts to deny his advancing years by running more miles than can ever be healthy and racing marathons that he can’t ever win. He struggles to take writing profiles about himself seriously.

Dr Ben Sieniewicz  
Research Fellow, King’s College London  
Wessex Cardiology Registrar  

Dr Ben Sieniewicz was awarded a Wessex Cardiology NTN in 2012 after graduating from Sheffield University in 2008. He undertook Foundation and CMT training in the Severn Deanery. After completing his core cardiology training he applied to enter a period of research at King’s College London and is (gradually) writing a PhD under the supervision of Professor CA Rinaldi evaluating optimal LV pacing site selection. He was awarded a British Heart Failure Project Grant in 2016. Dr Sieniewicz will return to the Wessex Cardiology rotation in January 2019 and will take up the Heart Failure Fellowship post at Queen Alexandra Hospital, Portsmouth.

Professor Iain Squire  
Consultant Physician at the University Hospitals of Leicester (UHL) NHS Trust, Leicester  
Professor of Cardiovascular Medicine, University of Leicester  

Iain Squire qualified in Medicine from Glasgow University, UK, in 1987. His early training took place in Glasgow, where he held position as Lecturer, and completed MD studies into the haemodynamic and neurohumoral response to initiation of ACE inhibition in patients with heart failure. Professor Squire was appointed as Lecturer in Medicine at the University of Leicester in 1995, and as Senior Lecturer in 1998. A personal Professorial Chair was awarded in 2009. Professor Squire is Consultant Physician at the University Hospitals of Leicester (UHL) NHS Trust where his clinical responsibilities include a 19-bed coronary care unit at Glenfield General Hospital, a busy tertiary cardiology centre. With colleagues, Professor Squire runs an outpatient heart failure service, which includes an urgent heart failure service; a nurse-led clinic; and an inpatient service, which includes a 27-bed heart failure unit and seven specialist nurses led by an advanced nurse practitioner. Professor Squire was a Councillor to the BSH from 2001 to 2003, Treasurer from 2009 to 2011, Deputy Chair from 2011 to 2013 and Chair of the Society from 2015 to 2017. Professor Squire is also Vice-Chair of the NICE Technology Appraisal Committee A.

His research interests include: natriuretic peptides and other cardiac biomarkers; the epidemiology of heart failure; prognostic markers in heart failure and acute coronary syndromes; and the influence of glycaemia and diabetes on prognosis in coronary artery disease. Iain has authored over 190 scientific papers in peer-reviewed journals, and several book chapters.
Dr Shirley Sze MBBS
Academic Clinical Fellow in Cardiology, Cardiovascular Research Centre, University of Leicester, Glenfield Hospital, Leicester

My name is Dr Shirley Sze. I am an academic clinical fellow in cardiology, I am currently based at the Cardiovascular Research Centre, University of Leicester, Glenfield Hospital. Before taking up the job, I took time out of training programme to pursue an MD in cardiology sponsored by the Hull York Medical School, under the supervision of Professor Andrew Clark and Dr Pierpaolo Pellicori. My research interest is frailty and malnutrition in heart failure.

Dr Clare Taylor MBE
General Practitioner and NIHR Academic Clinical Lecturer, University of Oxford, Oxford

Dr Taylor graduated from the University of Cambridge then trained in hospital medicine gaining Membership of the Royal College of Physicians, London, before undertaking further training in academic general practice and public health. She is now an academic general practitioner combining clinical practice with teaching and research at the University of Oxford. Clare’s PhD explored the clinical pathway for patients diagnosed with heart failure in primary care. She has also been trial clinician on randomised controlled trials, diagnostic accuracy and screening studies. This research has been published in high impact journals, including the British Medical Journal, European Journal of Heart Failure and the British Journal of General Practice, and presented at international conferences. Clare has been lead or co-applicant on successful research fellowships and grants from the National Institute for Health Research, British Heart Foundation and the Wellcome Trust totalling over £2m. Clare is one of two GP members of the NICE chronic heart failure guideline committee.

Dr Jenny Welstand
Lead Heart Failure Nurse Specialist, Betsi Cadwaladr University Health Board, Wrexham

Jenny Welstand undertook her nurse training in London qualifying in 1986. In 1990 she joined the cardiac unit in Oxford and developed roles in surgical pre-assessment, as a cardiology nurse practitioner, and established a community cardiac rehabilitation service.

Moving to North East Wales in 2002 she established an integrated heart failure service working between primary and secondary care. This service has substantially reduced readmissions and length of stay. The service focuses on helping patients to make sense of their diagnosis and supporting them with the effects of living with a disabling condition.

Jenny was awarded a Doctorate in 2013, winning the Lord Jones prize for best thesis and defensive at viva at Glyndwr University. Her thesis investigated the patient’s experience of living with heart failure. Jenny is currently undertaking a feasibility study about integrating heart failure and specialist palliative care at Nightingale House Hospice in Wrexham, with a grant they were awarded from Hospice UK to improve hospice enabled-care.

Jenny has served as a council member on the British Council of Cardiovascular Nursing and as an Observer on the Board of the BSH (Nurse Observer) 2015–17.

Dr Carol Whelan
Consultant Cardiologist and Clinical Lead for Heart Failure, Royal Free Hospital, London

Dr Carol Whelan was appointed in October 2009 as Consultant Cardiologist at the Royal Free Hospital, London, with an interest in imaging, heart failure and, in particular, cardiac amyloidosis. She was appointed as Honorary Senior Lecturer at UCL in recognition for her work at the National Amyloidosis Centre. She became the hospital clinical lead for Heart Failure in 2011 and is now Trust lead.

She has an interest in transthoracic echocardiography as well as TOE and stress (exercise and dobutamine) echocardiography. She is actively involved in teaching and is joint clinical lead for the medical student teaching programme in cardiology.

She thoroughly enjoyed her period of relaxin research with Professor John McMurray at Glasgow University before commencing SpR training in North West London. She has published these and other research findings and presented at national and international meetings. She has also written book chapters and reviews on secondary prevention of myocardial infarction and current management of heart failure, and has published widely on cardiac amyloidosis.

Dr Simon Williams
Consultant Cardiologist and Clinical Lead for Heart Failure, Withenshawe Hospital, Manchester

• Specialises in all aspects of heart failure: from community heart failure and general inpatient/outpatient management to acute heart failure treatment/cardiac transplantation.
• Current Chair-Elect BSH (2017–2019).
• Writes a few articles in leading magazines with his mates from time to time in his role as Senior Lecturer at the University of Manchester.
• Likes running, supporting Altrincham AFC and watching Coronation Street.
EXHIBITORS AND CONTRIBUTORS

ABBOTT MEDICAL UK
Abbott is a world leader in medical devices with a broad portfolio of products designed to improve outcomes for patients and help people live their healthiest, fullest lives. For more than 125 years, we have been creating more possibilities for more people at all stages of life. Visit www.abbott.co.uk

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AKCEA THERAPEUTICS
Akcea Therapeutics, an affiliate of Ionis Pharmaceuticals, was established in early 2015. Akcea’s mission is to develop transformative treatments to address the unmet needs and complex medical challenges of patients living with serious, genetic, rare and ultra-rare disorders.

Akcea has a robust pipeline of development & licensed drugs covering multiple targets and diseases using our advanced RNA-targeted antisense oligonucleotide (ASOs) technology.

Akcea was listed on the NASDAQ stock exchange in July 2017 under the symbol “AKCA.” Akcea is a global company headquartered in Cambridge, Massachusetts with offices in Carlsbad, California and across the EU and Canada.

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ALLIANCE FOR HEART FAILURE
The Alliance for Heart Failure is a coalition of charities, patient groups, professional bodies and healthcare companies working together to raise the profile of heart failure in Government, the NHS and media, and improve outcomes for people with heart failure.

Members of the Alliance collaborate on overarching policy issues in the aim of securing prioritisation of heart failure and improving access to care, treatment and services for people with heart failure. Members remain independent, but the shared mission to deliver timely diagnosis and improve access to the right care and support is strengthened by joining forces.

Alliance member organisations are: Bayer; British Association for Cardiovascular Prevention and Rehabilitation; British Association for Nursing in Cardiovascular Care; British Society for Echocardiography; British Society for Heart Failure; Cardiomyopathy UK; Cardiovascular Care Partnerships; Medtronic UK; National Heart & Lung Institute; Novartis Pharmaceuticals UK Ltd; Pumping Marvellous Foundation; Roche Diagnostics Ltd; South East Clinical Networks; UK Heart Failure Pharmacy Forum.

The Alliance for Heart Failure is supported and funded by Bayer, Medtronic UK, Novartis Pharmaceuticals UK Ltd, and Roche Diagnostics Ltd.

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ALNYLAM UK
Alnylam is leading the translation of RNA interference (RNAi) into a new class of medicines for people afflicted with rare genetic, cardio-metabolic, and hepatic infectious diseases. Based on Nobel Prize-winning science, RNAi therapeutics represent a powerful and clinically validated approach for the treatment of a wide range of severe and debilitating diseases. Alnylam employs over 750 people in the U.S. and Europe, with headquarters in Cambridge, MA.

For more please visit www.alnylam.com.

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APC CARDIOVASCULAR
Formed in 1989 APC Cardiovascular has earned a reputation as a successful and well-respected healthcare sales and distribution company. We offer direct sales and support for numerous cardiovascular and cardiology product ranges, supplying hospitals, clinics and health-centres worldwide.

APC Cardiovascular is committed to providing a range of high quality products, incorporating the latest technological advances, backed by the highest level of customer service and support. Visit our stand to discuss non-diuretic fluid removal therapy and patient monitoring in your congestive heart failure patients:

Aquadex FlexFlow®: Designed to safely, effectively, and predictably remove excess fluid from patients suffering from fluid overload who have failed diuretic therapy.

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Physioflow™: Using thoracic electrical bioimpedance, the Physioflow™ incorporates unique and patented signal waveform morphology analysis algorithm to measure cardiac output and other hemodynamic parameters including Ventricular Ejection Time (VET), Ejection Fraction (EF) and Thoracic Fluid Content (TFC) useful in managing patient fluid levels.

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BOSTON SCIENTIFIC
Boston Scientific is dedicated to transforming lives through innovative medical solutions that improve the health of patients around the world. We provide solutions for treating irregular heart rhythms and heart failure, and protecting against sudden cardiac arrest.

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BRITISH HEART FOUNDATION
Heart and circulatory diseases are the world’s biggest killers. That’s why we fund over £100 million of research each year into conditions like heart attacks and heart failure, stroke, vascular dementia and their risk factors like diabetes and high blood pressure.

We’ve used the research we have funded to develop best practice programmes that have transformed the care of people affected by heart and circulatory diseases, so we can end the heartbreak these conditions cause.

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BAYER
Science for a better life
For over 120 years, Bayer has been researching and developing innovative medications and new therapeutic approaches that help make a difference to people’s lives.

Bayer is working in a wide range of therapeutic areas on new treatment approaches for heart, vascular, lung and kidney diseases with a focus on processes and signalling pathways relevant to diseases of the cardiovascular system.

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BRITISH SOCIETY FOR HEART FAILURE (BSH)
The BSH is a multidisciplinary society and membership is open to all healthcare professionals involved with the diagnosis, treatment and management of heart failure, and research in this area.

The aims of the BSH are as follows:
• to increase knowledge and promote research about the diagnosis, causes, management and consequences of heart failure amongst healthcare professionals, with the intention of delaying or preventing the onset of heart failure and improving care for patients with heart failure
• to provide expert advice to healthcare professionals, patient or government organisations, including the National Health Service, when appropriate and as requested.

At present the BSH has nearly 1,200 members and nine companies that are Friends of the BSH. The BSH Board consists of the following members: Dr Paul Kalra (Chair), Professor Iain Squire (Past Chair), Dr Simon Williams (Chair-Elect), Professor Roy Gardner (Deputy Chair), Dr Peter Cowburn (Treasurer), Mrs Louise Clayton, Mrs Jayne Masters and Dr Stephen Pettit as Councillors.

The Observers to the Board are as follows: Dr Lisa Anderson, Mrs Carys Barton, Dr John Baxter, Dr Jane Cannon, Mr Paul Forsyth, Dr Rosie Heath and Dr Carol Whelan.

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CARDIOMYOPATHY UK
Our vision is for everyone affected by cardiomyopathy and myocarditis to lead long and fulfilling lives.

We are the specialist national charity for people affected by cardiomyopathy and myocarditis. We provide support and information services, work to raise awareness of the condition, campaign for better access to quality treatment and promote research.

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HEARTFELT TECHNOLOGIES
Heartfelt Technologies exists to help patients, their families, carers and doctors, to reduce hospital re-admission rates from congestive heart failure de-compensation.

This is a big problem: heart failure costs the NHS about two billion pounds per year, and statistics show that one in five people will suffer from heart failure (it is the most common cause of hospitalisation for those aged over 65), and half of those affected will have multiple hospital emergency visits as a result. However, it is thought that many of these repeat emergency admissions could be avoided.

We are developing a device to monitor heart failure in the home, whilst fitting naturally around the patient’s lifestyle.

What this means for the patient and their carers is one less thing to worry about with their often complex drug and monitoring routines; for the doctor this means consistently collected data to help patients to live longer, healthier lives.

Our technology is specifically designed to work for patients who are currently not compliant (not weighing themselves regularly, not reporting breathlessness, etc…). Our device is a camera system, which automatically captures cardiovascular information (volume of the lower leg/foot) whenever the patient simply walks past the monitor. The data are then transmitted to ‘the cloud’ for further processing and flagging of high-risk patients. Once flagged, our data feed into existing telemedicine monitoring systems allowing carers and medical professionals to take prompt action.

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MEDTRONIC
As a global leader in medical technology, services and solutions, Medtronic improves the health and lives of millions of people each year. We believe our deep clinical, therapeutic and economic expertise can help address the complex challenges – such as rising costs, ageing populations, and the burden of chronic disease – faced by families and healthcare systems today. But, we can’t do it alone. That’s why we’re committed to partnering in new ways and developing powerful solutions that deliver better patient outcomes.

Founded in 1949 as a medical repair company, we’re now among the world’s largest medical technology, services and solutions companies, employing more than 85,000 people worldwide, serving physicians, hospitals and patients in more than 160 countries. Join us in our commitment to take healthcare Further, Together. Learn more at www.medtronic.com.

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NAPP PHARMACEUTICALS
Napp Pharmaceuticals Limited is a UK healthcare company with a strong track record in bringing high-quality, innovative medicines to UK health professionals and their patients. We believe in excellence and delivering on our promises to the NHS, patients, our business partners and each other. We strive to offer new medicines and initiatives that meet genuine needs, make a positive difference to patients’ lives and support the NHS in delivering effective, high-quality, sustainable healthcare.

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NATIONAL INSTITUTE FOR CARDIOVASCULAR OUTCOMES RESEARCH (NICOR)
The National Institute for Cardiovascular Outcomes Research (NICOR) collects clinical information from UK hospitals into secure registries established by the cardiovascular specialist societies. We help the NHS, the government and regulatory bodies improve quality of care by checking that the care received by heart disease patients meets good practice standards. We do this by conducting clinical audit and by comparing patient outcomes, such as casemix-adjusted survival and readmission rates.

Our reports and online public portals help hospitals and health improvement bodies to monitor practice, inform patient choices about their place of care, and build public confidence in NHS cardiac care.

From 1 July 2017 Barts Health NHS Trust has hosted NICOR to manage the National Cardiac Audit Programme after being awarded the contract by the Healthcare Quality Improvement Partnership (HQIP) following a European Union tender process. The new NCAP programme will combine the six separate audits previously hosted by University College London (UCL), including the National Heart Failure Audit, into one cardiac audit with six clinical domains.

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NOVARTIS PHARMACEUTICALS
Novartis provides innovative healthcare solutions that address the evolving needs of patients and societies. Headquartered in Basel, Switzerland, Novartis offers a diversified portfolio to best meet these needs: innovative medicines, cost-saving generic and biosimilar pharmaceuticals and eye care. Novartis has leading positions globally in each of these areas. In 2017, the Group achieved net sales of USD 49.1 billion, while R&D throughout the Group amounted to approximately USD 9.0 billion. Novartis Group companies employ approximately 124,000 full-time-equivalent associates. Novartis products are sold in approximately 155 countries around the world. For more information, please visit http://www.novartis.com.

In the UK, Novartis develops, manufactures and markets innovative medicines, devices and diagnostic tests which help improve patient outcomes. Based on four sites across the north and south of England, we employ approximately 1,500 people to serve healthcare needs across the whole of the UK, as well as supporting the global operations of Novartis by manufacturing the active pharmaceutical ingredients used worldwide in many medicines. In 2017 Novartis invested almost £30million in R&D and is a leading sponsor of clinical trials in the UK. For more information, please visit www.novartis.co.uk.

Novartis UK is on Twitter. Sign up to follow @NovartisUK at https://twitter.com/novartisuk
For Novartis multimedia content, please visit https://www.novartis.co.uk/news/media-library

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PHARMACOSMOS UK
Pharmacosmos are specialists in iron therapy. Globally we develop, manufacture and market medicines for iron deficiency anaemia in humans and animals.

In the UK and Ireland, Pharmacosmos focuses on treatment of Iron Deficiency Anaemia in humans, supporting patients and healthcare professionals with a range of iron therapies, tools and resources.

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PHARMA NORD (UK)
Pharma Nord is one of Europe’s leading manufacturers of dietary supplements and natural preventative medicines. The company develops, manufactures and markets its products, which are produced to pharmaceutical standards, with emphasis on documented bioavailability, efficacy and safety. Pharma Nord has sponsored a number of randomised controlled clinical trials of relevance to cardiovascular disorders, most notably the recent Q-SYMBIO and KISEL-10 studies. In the Q-SYMBIO study, long term daily supplementation with coenzyme Q10 (in addition to conventional medication) reduced cardiovascular mortality in patients with heart failure (NYHA class III or IV) by more than 40%. In the KISEL-10 study, long term supplementation with coenzyme Q10 and selenium reduced the risk of cardiovascular mortality in the normal elderly population by more than 50%, as well as significantly reducing the frequency of hospital admissions and improving quality of life. These studies demonstrate the importance of Pharma Nord product quality and bioavailability, which other supplement manufacturers cannot match. Pharma Nord coenzyme Q10 is available within the EU as the licensed medicine Myoquinon®.

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PUMPING MARVELLOUS FOUNDATION
The Pumping Marvellous Foundation was founded to demonstrate leadership around the patient voice working in partnership with all stakeholders to ensure the patient and their families have the best quality of life that is achievable.

PMF has four primary goals that act as a cohesive multidisciplinary approach to heart failure care.
1. To support patients, carers and their families on how to self-manage the psychological, socio-economic, and physical, impacts on their lives that the condition imposes.
2. To improve timescales to diagnose heart failure at primary care gateways.
3. To increase the number of patients receiving specialist heart failure care and support.
4. To influence government, regulators and the pharmaceutical industry policies to reflect patient needs.

PMF carries out the following activities to achieve these goals
a) Working in partnership with clinicians, commissioners and a range of associated agencies to create patient-driven initiatives.
b) Acting as a catalyst to facilitate the progression of heart failure care.
c) Providing advocacy services to beneficiaries via a network of regional volunteers.
d) Lobbying MPs and government officers to gain their support to increase awareness of heart failure.
e) Using peer-to-peer coaching and support of patients to promote self-care, self-education and self-intervention.

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**ROCHE DIAGNOSTICS**
Roche Diagnostics serves customers spanning the entire healthcare spectrum – from research institutions, hospitals and commercial laboratories to clinicians and patients. Performed on blood, tissue or other patient samples, in vitro diagnostics are a critical source of objective information for improved disease management and patient care.

Roche Diagnostics offers the industry’s broadest range of diagnostic tests. Our pioneering technologies and solutions not only help ensure an accurate diagnosis, they can detect the risk of disease, predict how a disease may progress, and enable the right treatment decision at the outset.

We help patients gain control over chronic conditions by enabling both physicians and patients to monitor treatment progress. And, through our successful collaboration with laboratories, we provide the fast and reliable results needed for life-changing decisions.

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**VIFOR PHARMA UK**
Vifor Pharma UK, affiliated to Vifor Pharma: a world leader in the discovery, development, manufacturing and marketing of pharmaceutical products for the treatment of ion imbalances such as iron deficiency and elevated potassium, is based in Bagshot, Surrey.

Established in 2010, Vifor Pharma UK has grown in size, commands a market leading position in the intravenous (IV) iron therapy market and has recently introduced a medicine for the treatment of hyperkalaemia, which has a key role in the optimisation of RAASI therapy in heart failure.

Vifor Pharma UK is committed to investing in the education of health care professionals and in responsible public awareness initiatives.

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**UK HEART FAILURE INVESTIGATORS RESEARCH NETWORK**
The UK Heart Failure Investigators Research Network was established in 2017 to promote investigator-led, multicentre clinical trials in the UK. The Network hosts an annual meeting one day prior to the BSH Annual Autumn Meeting and all interested parties are welcome to attend. The Network also hosts an exhibition booth at the Annual Meeting of the British Cardiovascular Society. We have an open-door policy to both health professionals and patient participants. The Network will do its best to support new ideas and initiatives - we are looking for enthusiastic innovators who want to drive the research agenda forward.

The Network has adopted several ongoing trials (REVIVED – revascularisation, IRONMAN – intravenous iron, and RESHAPE-HF2 – mitral reguragitation), obtained funding for its first trial (RELIEHF – Patiromer-facilitated high-dose MRA for advanced heart failure), has two further funding applications under consideration (Q10-HF – co-enzyme Q10, and INCREDIBLE – CRT-P v CRT-D) and has a great idea that needs refining (the ‘any-willing-patient’ trial).

If you wish to be involved, please contact us (claire.brunton@glasgow.ac.uk for all enquiries). We are looking for investigators who can offer support through steering committees, endpoint adjudication and trial recruitment. We won’t know you are interested unless you ask!

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Advance notice

For more information about the events below please visit the BSH desks in Exhibition Area I or www.bsh.org.uk

11th BSH Heart Failure Day for Revalidation and Training
26 March 2019 – Golden Jubilee Conference Centre, Glasgow
This programme has been designed by Dr John Baxter, Dr Jane Cannon, Dr Peter Cowburn and Professor Roy Gardner to meet the educational needs of the heart failure component of the core curriculum in cardiovascular medicine, as well as the needs for advanced training in heart failure and revalidation. It will provide an in-depth discussion around particularly challenging and often controversial management issues that will be relevant to consultants and trainees in cardiology, internal medicine, care of the elderly specialists, nurses and GPs with a special interest in heart failure. The day has been structured to provide a balance of carefully selected talks and interactive case-based sessions.

9th BSH Heart Failure Nurse and Healthcare Professional Study Day
27 March 2019 – Golden Jubilee Conference Centre, Glasgow
The programme has been designed by Mrs Carys Barton, Mrs Louise Clayton and Mrs Jayne Masters. The day aims to provide evidence-based knowledge from leading UK specialists in heart failure management and in-depth discussion around particularly challenging and controversial management issues facing nurses and other healthcare professionals caring for patients with heart failure. It is designed to educate and interest heart failure nurses, and will be of interest to nurses, both early in their role and those with more experience, as well as other healthcare professionals.

European Heart Failure Awareness Week
May 2019 (date to be confirmed)
European Heart Failure Awareness Week is designed to raise awareness of heart failure, including possible symptoms, the importance of an early and accurate diagnosis, and the need for optimal treatment. This Europe-wide initiative was developed through the combined efforts of National Societies of Heart Failure across Europe, as part of the European Society of Cardiology (ESC)/Heart Failure Association (HFA) activities. More details are available on our website (www.bsh.org.uk/resources/heart-failure-awareness/).

British Cardiovascular Society Annual Conference
3–5 June 2019 – Manchester Central, Manchester
The BSH will be involved with a number of heart failure-related sessions at this conference. A programme for these sessions will be available on the BSH website in the spring.

New Consultants’ Meeting
Top tips for the transition to heart failure consultant
June 2019 (date and venue tbc)
This full day meeting will provide opportunities for new and recently appointed Heart Failure Consultants (typically within their first 2–3 years) to network with others at a similar stage of their career and gain insights and practical advice from those with experience in this role. We expect around 25–30 newly appointed consultants to attend. The programme and registration form will be available on the BSH website in the coming weeks and will be circulated to members via e-mail when available.

22nd BSH Annual Autumn Meeting
28–29 November 2019, Queen Elizabeth II Centre, London
Queen Elizabeth II Centre, London
Exhibition Area I – Britten Room; Exhibition Area II – Whittle Room
21st BSH Annual Autumn Meeting, 29–30 November 2018
Exhibition Plan
Entresto (sacubitril/valsartan) Important note: Before prescribing, consult Summary of Product Characteristics (SmPC). Presentation: Film-coated tablets of 14 mg/15 mg, 28 mg/30 mg and 57 mg/100 mg of sacubitril and valsartan respectively. (sacubitril/valsartan solution will complicate interpretation of treatment response in patients for heart failure with reduced ejection fraction (HF-REF)). Treatment for heart failure with reduced ejection fraction (HF-REF) contains a combination of sacubitril and valsartan to provide a complete blockade of the renin-angiotensin-aldosterone system (RAAS) and to provide a complete blockade of the RAAS for the first time, the combination of sacubitril and valsartan may increase the systemic exposure of LBQ657 or valsartan. Appropriate care should be exercised. Co-administration of Entresto with metformin reduced both Cmax and AUC of metformin by 23%. When initiating therapy with Entresto in patients receiving metformin, the clinical status of the patient should be evaluated. Fertility, pregnancy and lactation: The use of Entresto is not recommended during the first trimester of pregnancy and is contraindicated during the second and third trimesters of pregnancy. The use of Entresto is not known whether Entresto is excreted in human milk, but components were excreted in the milk of rats. Entresto is not recommended during breastfeeding. A decision should be made whether to abstain from breastfeeding or to discontinue Entresto while breastfeeding, taking into account the importance of Entresto to the mother. Undesirable effects: Very common (≥1/10). Hypotension, hypotension, renal impairment. Common (≥1/100 to <1/10). Anaemia, hypokalaemia, hypoglycaemia, diarrhoea, headache, syncope, ventricular fibrillation, cough, diarrhoea, nausea, gastritis, renal failure, acute renal failure, fatigue, anaphylaxis. Uncommon (<1/1000). Hypersensitivity reactions, postural dizziness, pruritus, rash, angioedema. Packs and price: Entresto 24 mg/26 mg £45.78 per 28 tablet pack. Entresto 49 mg/51 mg £45.78 per 28 tablet pack. Entresto 97 mg/103 mg £51.56 per 56 tablet pack. Legal classification: POM. Marketing Authorisation Holder: Novartis Europharm Ltd, Finsbury Business Park, Camden, London, NW1 3BJ. Marketing Authorisation Numbers: Entresto 24 mg/26 mg film coated tablets EUL/15/058/001, Entresto 49 mg/51 mg film coated tablets EUL/15/058/002, Entresto 97 mg/103 mg film coated tablets EUL/15/058/003, Date of last revision of prescribing information: September 2017. Full Prescribing Information available from: Novartis Pharmaceuticals UK Ltd, Finsbury Business Park, Finsbury, London, EC1A 2FB. Tel: 01276 692508. Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard. Adverse events should also be reported to Novartis via uk.patiented@novartis.com or online through the Patient Safety Information tool at https://psit.novartis.com.

If you have a question about the product, please contact Medical Information on 01276 698370 or by email at medical.uk@novartis.com.

ACEI, angiotensin-converting enzyme inhibitor. ARB, absolute risk reduction. CI, confidence interval. CV, cardiovascular. HF, heart failure. HR, hazard ratio

Entresto™ (sacubitril/valsartan) is indicated in adult patients for treatment of symptomatic chronic heart failure with reduced ejection fraction.

*Composite primary endpoint: Events: 914 (21.8%) vs. 1,117 (26.5%); ARR: 4.7%; HR (95% CI): 0.80 (0.73–0.87); p < 0.001

Help your patients get back to what matters

Ferinject® in chronic heart failure:

- The only IV iron named in ESC and SIGN guidelines\(^1,2\)
- Oral iron showed no benefit over placebo for patients with chronic heart failure and iron deficiency\(^3\)
- Significant improvement in exercise capacity for chronic heart failure patients with iron deficiency\(^4\)
- Reduced re-hospitalisations due to worsening heart failure\(^4\)

Ferric carboxymaltose

For full prescribing information refer to the Summary of Product Characteristics (SmPC)

Active ingredient: Ferric carboxymaltose (50mg/mL)

Presentation: Solution for injection/infusion. Available as a 2mL vial (as 1000mg of iron), 10mL vial (as 5000mg of iron) and 20mL vial (as 10000mg of iron).

Indication: Treatment of iron deficiency

Dosage and Administration: For doses >200mg to 500mg, Ferinject should be administered at a rate of 100mg iron/min. For doses >500mg to 1,000mg, the minimum administration time is 15 mins. Ferinject must be diluted in 0.9% m/v NaCl but not diluted to concentrations less than 2 mg iron/mL. For doses >1,000mg, the minimum administration time is 15 mins. Ferinject administration should be preceded by careful risk/benefit assessment. Careful monitoring of iron status is recommended to avoid iron overload. There is no safety data on the use of single doses of more than 200mg iron in haemodialysis-dependent chronic kidney disease patients. Parenteral iron must be used with caution in case of acute or chronic infection, asthma, eczema or other atopic allergy. It is recommended that treatment with Ferinject is stopped in patients with ongoing bacteraemia. In patients with chronic infection a benefit/risk evaluation has to be performed. Caution should be exercised to avoid paravenous leakage when administering Ferinject.

Special populations: The use of Ferinject has not been studied in children. A careful risk/benefit evaluation is required before use during pregnancy. Ferinject should not be used during pregnancy unless clearly necessary and should be confined to the second and third trimester. Undesirable effects: Common (≥1/10 to <1/100): Hypersensitivity to Ferinject or any of its excipients. Known serious hypersensitivity to other parenteral iron products. Anaemia not attributed to iron deficiency. Iron overload or disturbances in utilisation of iron. Special warnings and precautions: Parenteral administered iron preparations can cause potentially fatal anaphylactic/anaphylactoid reactions. The risk is enhanced for patients with known allergies, a history of severe asthma, eczema or other atopic allergy, and patients with immune or inflammatory conditions. Ferinject should only be administered in the presence of staff trained to manage anaphylactic reactions where full resuscitation facilities are available (including 1:1000 adrenaline solution). Each patient should be observed for 30 minutes following administration. If hypersensitivity reactions or signs of intolerance occur during administration, the treatment must be stopped immediately. In patients with liver dysfunction, parenteral iron should only be administered after careful risk/benefit assessment. Careful monitoring of iron status is recommended to avoid iron overload.

Undesirable effects:

- Hypersensitivity: hypotension, flushing, hypertension, nausea, injection/infusion site reactions.
- Common: Hypophosphataemia, headache, dizziness, flushing, hypotension, nausea, injection/infusion site reactions. Please consult the SmPC in relation to other undesirable effects.

Legal category: POM

Price:

- Pack of 5 x 10ml = £81.18
- Pack of 5 x 20ml = £154.23
- Pack of 1 x 50ml = £309.88
- Pack of 1 x 100ml = £614.23

Holder: Vifor Pharma UK Limited, The Old Stables, Bagshot Park, Bagshot, Surrey, GU19 5PJ

Job bag number: UK/FER/16/0188(1)

Date of preparation: October 2018

Exports:

- MA Number: 15240/0002
- Date of Authorisation: 19.07.2007
- MA Holder: Vifor France, 101-107 Timassi Bollucki, Tour Franklin La Défense 8, 92424 Paris La Défense Cedex, France

Further details available from Vifor Pharma UK Limited, The Old Stables, Bagshot Park, Bagshot, Surrey, GU19 5PJ

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www.ferinject.co.uk

Adverse events should also be reported to Vifor Pharma UK Ltd. Tel: +44 1276 853633