

British Society for Heart Failure  
13th Annual Autumn Meeting 2010

**Practical issues across the lifetime of heart failure**

Queen Elizabeth II Conference Centre, London

25–26 November 2010

Programme and abstract book

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*This conference is accredited by the Royal College of Nursing Accreditation Unit. It has been awarded 12 study hours and the event reference is 4702.*

*This conference has been awarded 10 credits for CPD and the event code is 59756.*

*Please note that photography, video and audio recording of the sessions and slides of this meeting is strictly prohibited.*

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# **Advance notice**

## **BSH Medical Training Meeting**

9 February 2011, National Heart and Lung Institute, London

This training day programme has been designed by Dr Paul Kalra and Professor Iain Squire 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. It will provide an in-depth discussion around particularly challenging and often controversial management issues that will be relevant to trainees in internal medicine, care of the elderly and GPs. We also believe that the meeting will be of value to many heart failure nurse specialists. The day has been structured to provide a balance of carefully selected talks and interactive case based sessions.

## **BSH Heart Failure Nurse Study Day**

10 February 2011, National Heart and Lung Institute, London

This study day programme has been created by Mrs Jane Butler and Mrs Annie MacCallum to educate and interest heart failure nurses and will be of interest to nurses early in their role and those with more experience. 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 caring for patients with heart failure.

## **Heart Failure Awareness Day**

6 May 2011

This is a Europe-wide day to raise the awareness of heart failure. The initiative is led by the European Society of Cardiology (ESC)/Heart Failure Association (HFA) and is supported by the BSH. More details will be available shortly and we would be pleased to hear of the activities you might be planning locally.

## **British Cardiovascular Society Annual Conference & Exhibition**

13–15 June 2011, Manchester Central, Manchester

The BSH will, as usual, be involved with sessions at this conference.

## **14th BSH Annual Autumn Meeting 2011**

24–25 November 2011, Queen Elizabeth II Conference Centre,  
London

**For more information about the above events, including detailed programmes/registration forms, please visit the BSH desks in the exhibition area or [www.bsh.org.uk](http://www.bsh.org.uk)**

# Programme

# Programme – Day One THURSDAY 25 NOVEMBER 2010

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**Programme directors: Iain Squire (Leicester) / Paul Kalra (Portsmouth)**

- 09:00            *Registration and Tea / Coffee*
- 09:30–10:45    Session 1: Getting the diagnosis right: the NICE 2010 partial update – diagnosis**
- Chairs:         Martin Cowie (London) / Theresa McDonagh (London)**
- 09:30–09:50    The NICE 2010 partial update: diagnosis  
*Abdallah Al-Mohammad (Sheffield)*
- 09:50–10:05    The NICE partial update – natriuretic peptides in practice  
*Allan Struthers (Dundee)*
- 10:05–10:25    Echocardiography – beyond ejection fraction?  
*Antoinette Kenny (Newcastle upon Tyne)*
- 10:25–10:45    Discussion (Panel and audience)
- 10:45–11:10    *Coffee*
- 11:10–12:20    Session 2: Rational management of heart failure**
- Chairs:         Jane Butler (London) / Ahmet Fuat (Darlington)**
- 11:10–11:35    Why we give drugs – the pathophysiology of heart failure  
*Iain Squire (Leicester)*
- 11:35–12:00    Success and failure in heart failure trials – what works and what doesn't?  
*Henry Dargie (Glasgow)*
- 12:00–12:20    Pitfalls and problems in the interpretation of clinical trials  
*Andrew Clark (Hull)*
- 12:20–13:50    *Lunch and Meet the Experts Sessions*  
*(please see page 32 for programme)*
- 13:50–15:20    Session 3: Management of heart failure – what's new?**  
*(session supported by an educational grant from Alere)*
- Chairs:         Andrew Clark (Hull) / Ahmet Fuat (Darlington)**
- 13:50–14:10    Telemonitoring – what is the current state of play?  
*Martin Cowie (London)*
- 14:10–14:30    National Heart Failure Audit  
*Theresa McDonagh (London)*
- 14:30–15:00    Update on clinical trials  
*John Cleland (Hull)*
- 15:00–15:20    Biomarkers in practice: what is the clinical point?  
*Naveed Sattar (Glasgow)*
- 15:20–15:50    *Coffee*

- 15:50–17:20    Session 4: Assessment of prognosis/identification of high-risk patients**  
*(session supported by an educational grant from GE Healthcare)*
- Chairs:        Paul Kalra (Portsmouth) / Simon Williams (Manchester)**
- 15:50–16:10    Imaging for prognosis in heart failure  
*Simon Woldman (London)*
- 16:10–16:40    Renal dysfunction and adverse cardiovascular outcomes/sudden cardiac death in chronic kidney disease  
*Kevin Damman (Groningen, The Netherlands)*
- 16:40–17:00    ACS guidelines: implications for identification of post-MI LVSD  
*Martin Cowie (London)*
- 17:00–17:20    Cardiopulmonary exercise testing  
*Klaus Witte (Leeds)*
- 17:20–18:30    *Wine and cheese reception*

## **Programme – Day Two** FRIDAY 26 NOVEMBER 2010

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- 09:00–09:25    BSH Annual General Meeting (BSH members only)**  
**Chairs:        Theresa McDonagh (London) / Iain Squire (Leicester)**
- 09:30–10:40    Session 5: Getting treatment right – the NICE 2010 partial update**  
**Chairs:        Annie MacCallum (Gloucestershire) / Iain Squire (Leicester)**
- 09:30–09:45    What is the evidence for:  
 (a) Aldosterone blockers *Henry Dargie (Glasgow)*  
 (b) Angiotensin receptor blockers *Hugh McIntyre (Hastings)*  
 (c) Isosorbide dinitrate/hydralazine combination  
*Abdallah Al-Mohammad (Sheffield)*
- 09:45–10.00    The NICE 2010 partial update: treatment  
*Suzanna Hardman (London)*
- 10:00–10:10    The NICE partial update – the view from primary care  
*Jim Moore (Cheltenham)*
- 10:10–10:20    The NICE partial update – the view from secondary care  
*Simon Woldman (London)*
- 10:20–10:40    Discussion (Panel and audience)
- 10:40–11:10    *Coffee*

- 11:10–12:40      Session 6: Patient’s unmet needs**  
**Chairs:            John Baxter (Sunderland) / Jane Butler (London)**
- 11:10–11:30      Cardiac rehabilitation – practicalities of meeting NICE guidance  
*John Buckley (Chester)*
- 11:30–11:50      Advanced care planning (including national audit)  
*Simon Conroy (Leicester)*
- 11:50–12:10      Withdrawal of therapy (case based; simple issues such as reduction/  
withdrawal of BB or ACEI etc., through to withdrawal of drugs/device  
therapy in late-stage disease)  
*Jim Beattie (Birmingham)*
- 12:10–12:30      What do patients want?  
*Steve Oxberry (Huddersfield)*
- 12:30–12:40      Discussion (Panel and audience)
- 12:40–14:00      *Lunch and Meet the Experts Sessions*  
*(please see page 32 for programme)*
- 14:00–15:30      Session 7: Case studies in heart failure**  
**Chair:                Suzanna Hardman (London) / Henry Dargie (Glasgow)**
- 14:00–14:20      *Damien Cullington*  
*(on behalf of Andrew Clark [Hull])*
- 14:20–14:40      *Robin Weir*  
*(on behalf of Derek Connelly [Glasgow])*
- 14:40–15:00      *Donah Zachariah*  
*(on behalf of Paul Kalra [Portsmouth])*
- 15:00–15:20      *Dominic Kelly*  
*(on behalf of Peter Cowburn [Southampton])*
- 15:20–15:30      Discussion
- 15:30–16:00      *Coffee*
- 16:00–16:30      Session 8**  
**Debate: This house believes that chronic coronary artery disease**  
**should be treated in patients with heart failure**
- Chair:                John Baxter (Sunderland)**
- For:                 *Mark de Belder (Middlesbrough)*
- Against:           *Andrew Clark (Hull)*
- 16:30                Meeting close**

# Abstracts

# The NICE 2010 partial update: diagnosis

*Abdallah Al-Mohammad*

Sheffield Teaching Hospitals NHS Foundation Trust

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One of the major advances in the partial update of the National Institute for Health and Clinical Excellence (NICE) guideline on chronic heart failure was the diagnostic algorithm. Several prominent changes have been made to the previous algorithm. These include: the recognition of the importance of making a positive diagnosis of heart failure with preserved left ventricular ejection fraction, the integral role of the natriuretic peptides in the diagnostic cascade, the recognition of the importance of prior myocardial infarction in increasing the chance of heart failure, and combining echocardiography with a specialist clinical opinion. The specialist will take into account all the above before reaching a diagnosis, considering the aetiology, assessing the severity and then devising a management plan. All these will have to be delivered according to a time-sensitive schedule that takes into consideration the risks to the patients caused by delayed diagnosis and treatment. Some of these advances will create controversy. These and the basis upon which the changes are justified will constitute the presentation.

## **Further reading**

National Institute for Health and Clinical Excellence. *Chronic Heart Failure: Management of Chronic Heart Failure in Adults in Primary and Secondary Care*. Clinical Guideline 5, 2003.

National Institute for Health and Clinical Excellence. *Chronic Heart Failure: Management of Chronic Heart Failure in Adults in Primary and Secondary Care*. Clinical Guideline 108, 2010.

# The NICE partial update – natriuretic peptides in practice

*Allan D Struthers*

Ninewells Hospital & Medical School, Dundee

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It was away back in 1993 that B-type natriuretic peptide (BNP) was first shown in two *Lancet* papers to be a feasible way of identifying which patients had left ventricular systolic dysfunction (LVSD). A wealth of further data has confirmed this over the past 17 years. In particular, it was found that BNP was a good “rule out” test, although it performed much less well as a “rule in” test because so many pathologies other than LVSD can increase BNP.

Guidelines naturally began to embrace BNP as a “rule out” test, meaning that if BNP was normal, an echocardiogram was unnecessary in a patient suspected of having heart failure. Other causes for their symptoms should be considered instead.

Another test that was able to act as a “rule out” test was the electrocardiogram (ECG), whereby a normal ECG virtually excluded heart failure as a diagnosis. The problem with the ECG was that many health professionals including GPs felt that they were not sufficiently skilled at ECG analysis to reliably assess whether an ECG was truly normal or not. Because of that skills factor, BNP was embraced more by guidelines as the “rule out” test rather than the ECG.

Therefore, many guidelines suggest, in different formats, that BNP should be used in general practice, and that only those patients with elevated BNP levels should go on to echocardiography.

The most recent National Institute for Health and Clinical Excellence (NICE) guidelines develop this concept further in two ways. First, they suggest that BNP is used for this purpose only in patients who have not previously suffered a myocardial infarction (MI). The concept behind this is that if a patient has had a previous MI and now has suspected heart failure, then they are quite likely to have heart failure and that they deserve an echocardiogram (and specialist assessment) without any interim “screening” test such as BNP. This is reasonable, since a previous MI is a strong predictor of LVSD and an interim BNP would not only take time but would also cost money.

The second twist is to use the level of elevation in BNP to decide the level of urgency of the referral. For example, patients with a BNP >400 pg/ml or an N-terminal-pro-BNP >2000 pg/ml should be referred urgently for echocardiography and specialist assessment within 2 weeks. Again, this is reasonable since prognosis is closely linked to the height of BNP elevation.

# Echocardiography – beyond ejection fraction?

*Antoinette Kenny*

Freeman Hospital, Newcastle upon Tyne

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Up to one-half of patients with heart failure have “normal” systolic function, as assessed by ejection fraction, and are thought to have impairment of diastolic function. Assessment of suspected heart failure by echocardiography should incorporate measurements of diastolic function.

The clinical importance of diastolic function assessment relates to the elevation of left ventricular (LV) filling pressure, with a “restrictive” filling pattern being an independent predictor of mortality. Developments in echocardiographic imaging, however, demonstrate that these patients do not have pure “diastolic heart failure”.

It is recognised that radial LV contraction, produced by fibres sited in the middle layers of the left ventricle, is the main contributor to ejection fraction. LV systolic function also comprises an expansion and contraction from base to apex due to fibres running longitudinally in the subendocardial layers. These fibres are believed to be more vulnerable to damage from ischaemia, fibrosis and other LV stresses than radial fibres. Developments in echocardiographic tissue Doppler imaging (TDI) allow the measurement of long-axis LV function, both systolic and diastolic.

Measurement of long-axis velocities by TDI appears a more sensitive measure of LV systolic function than ejection fraction. Reduced TDI long-axis systolic velocities in patients with heart failure, preserved ejection fraction and diastolic dysfunction suggest that these patients have early systolic dysfunction rather than isolated diastolic heart failure. Echocardiography in heart failure patients should include TDI of long-axis function as an integral component of systolic and diastolic assessments.

In addition to the measurement of LV systolic and diastolic function, echocardiography has a key role in identifying other structural abnormalities and their haemodynamic consequences in patients with heart failure symptoms.

# Why we give drugs – the pathophysiology of heart failure

*Iain Squire*

Glenfield Hospital, Leicester

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Chronic heart failure (CHF) is a complex condition that may arise as the end result of a number of cardiac pathologies. Irrespective of the original insult, the pathophysiological response is very similar, and results not only in changes in the heart that are evident at a macroscopic level, but also changes that are evident only under the microscope. Moreover, CHF is characterised by extensive alteration in the activity of a wide variety of pathophysiological pathways, which as well as being a result of the initial cardiac insult also contribute to the progression of the condition which is CHF.

At the most basic level, CHF is a disorder characterised by reduced cardiac output and the relative underperfusion, and/or congestion, of body organs. This may manifest itself in a number of ways, such as inadequate CNS perfusion (postural hypotension) or as liver congestion. Other more subtle abnormalities, such as gastrointestinal oedema, may contribute to the CHF syndrome by contributing to systemic inflammation.

However, the most common and clinically evident manifestation of this process is the involvement in CHF of the kidney, and of progressive renal impairment. Reduced renal perfusion resulting from reduced cardiac output leads to activation of the renin–angiotensin–aldosterone system (RAAS); it was recognised many years ago that measures of the extent of RAAS activation, such as plasma renin activity, correlate directly with the severity of heart failure and inversely with prognosis. Similarly, the role of RAAS activation in CHF is central to our understanding of the natural history, and to our basic pharmacological management, of the condition. RAAS activation results in peripheral vasoconstriction, which in turn leads to increased cardiac preload, further reducing cardiac output. We now have a situation where the heart's ability to perfuse vital organs is further impaired, and further RAAS activation is the outcome. At the same time, and as part of this cycle, sympathetic nervous system activation occurs, further contributing to vasoconstriction and to renin release.

Central to our management of the progressive nature of CHF is our ability to interrupt these processes pharmacologically. Angiotensin-converting enzyme (ACE) inhibitors prevent the production of the potent vasoconstrictor, angiotensin II, and the downstream result of angiotensin II activity on its type 2 receptor, namely aldosterone. The importance of these pathways to the progression of CHF can be appreciated when we consider the impact on both quality of life and life expectancy of agents interrupting RAAS, and indeed sympathetic, activation. ACE inhibition, angiotensin-receptor blockade, aldosterone antagonism and beta-blockade each impacts favourably on survival in patients with CHF. Indeed, the clear, consistent benefits of these agents can be contrasted with the relative lack of benefit of agents directed at other, more recently recognised, markers of neurohumoral activation. For example, agents directed at antagonising the effects of endothelin or of tumour necrosis factor have shown no survival benefit, despite there being biologically plausible reasons why these agents might have been expected to do so.

While the benefits of RAAS antagonist agents in CHF are clear, there are well-recognised barriers to their application in clinical practice, the most common of which is their perceived adverse effect on renal function. However, there is clear evidence that the patients who have most to gain from RAAS inhibition are those with a poorer prognosis; renal impairment is one of the strongest markers of poor prognosis, and data are emerging to indicate that the survival benefit from RAAS blockade may be confined to, or at the very least be greatest in, patients with evidence of poor prognosis as indicated by renal impairment or elevated plasma natriuretic peptide levels.

# Success and failure in heart failure trials – what works and what doesn't?

*Henry Dargie*

University of Glasgow

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Not received at time of going to press.

## Pitfalls and problems in the interpretation of clinical trials

*Andrew Clark*

Castle Hill Hospital, Kingston upon Hull

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Clinical trials are vital for the progress of clinical medicine. We have passed from anecdote-based practice to the era of evidence-based medicine. In the days of the anecdote, William Withering might make a towering contribution based on a handful of cases, but charlatans (and the naive) might hold up progress by stating as truths findings that do not stand up to scrutiny.

Evidence-based heart failure therapy is one of the towering medical achievements of the past 40 years, but the progress from the evidence base to clinical practice can be fraught. Everything hinges on the proper interpretation of data, and many people have a vested interest in seeing data interpreted in particular ways, from the commercial to the venal pursuit of fame!

Being interested in statistics and the interpretation of data may seem to be a minority sport, but should be part of every healthcare professional's mental armament. The purpose of today's talk is to suggest ways of approaching data from trials in a disinterested<sup>1</sup> manner and to help the audience cultivate a proper scepticism.

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<sup>1</sup>Disinterested: free from self-serving motive or self-interest; unbiased.

# Telemonitoring – what is the current state of play?

*Martin Cowie*

National Heart & Lung Institute, Imperial College & Royal Brompton Hospital, London

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There is increasing evidence that remote monitoring of heart failure patients using information technology can help improve the outcome and experience of care. A recent Cochrane meta-analysis of randomised trials has reported a 34% reduction in mortality and a 21% reduction in hospitalisation due to heart failure compared with usual care. Integrating telemonitoring into existing healthcare practice is challenging, not least because of the change in working practice for healthcare professionals. The monitoring technology varies from simple to complex, but data transmission to the healthcare team is straightforward. The best method of displaying the data to ensure the most appropriate decision making is yet to be determined, as is the best combination of variables to monitor. Patient acceptability is rarely a problem. This talk will review the current state of play regarding this important aspect of e-health.

## **Further reading**

Inglis SC, Clark RA, McAlister FA et al. Structured telephone support or telemonitoring programmes for patients with chronic heart failure. *Cochrane Database of Reviews* 2010; 8:CD007228.

# National Heart Failure Audit

*Theresa McDonagh*

Royal Brompton Hospital, London

on behalf of Project Board: Professor JC Cleland and Professor HJ Dargie

The National Heart Failure audit is run jointly by The NHS Information Centre and the British Society for Heart Failure, and is funded by the Healthcare Quality Improvement Partnership (HQIP). The audit focuses on the care and treatment of all patients with an unscheduled admission to hospital with heart failure. The main purposes of the audit are to measure quality of care and clinical outcomes, enabling comparisons between Trusts, and to bring about improvement where necessary.

The national audit consists of 36 core data items that reflect national guidance on the care and treatment of patients with heart failure. The heart failure database provides users with immediate feedback on data quality.

This report summarises key findings from the second 12 months of the national roll out of the audit between April 2009 and March 2010.

## Summary of key findings and main recommendations

*As of June 2010:*

- 141 of 163 (86.5%) Trusts had registered with the audit. Of the trusts registered, 130 (92%) submitted data for the period April 2009–March 2010, totalling 21,294 patients for the year.
- Nationally this represents approximately 42% of all patients discharged from hospital with a primary discharge diagnosis of heart failure and is a vast improvement in case ascertainment from the 6190 patients in the 2008/09 audit.
- Data completeness achieved similar rates to 2008/09 despite much improved participation.
- Patients with heart failure enrolled in the audit were mostly admitted under either cardiology (46%) or general medicine (42%).
- Echocardiography, a key investigation for heart failure, was performed in 79% of cases.
- On average, men and women with a home address in the most deprived quintile are admitted for heart failure 5.3 years and 4.6 years earlier, respectively, than those in the most affluent.
- Specialist services (inpatient and outpatient) are associated with better prescribing and better outcomes.
- Beta-blockers are underused.
- Lack of use of target doses may reflect work in progress. Patients might be titrated to target after discharge. This requires more follow-up data.
- The prognosis of heart failure remains poor, even for patients aged under 75 years, despite current therapy. The scientific evidence is substantial that more might be done.
- Many patients with heart failure are elderly and with multiple co-morbidities. The impact of existing conventional therapies may be limited.
- Prognosis of heart failure due to valve disease and in those with left ventricular ejection fraction (LVEF) >40% requiring admission to hospital is as bad, if not worse, than that of patients with LVEF <40%.
- Other surveys suggest a higher proportion of patients with heart failure and LVEF >40%. It may be that there is more scepticism over this diagnosis in the UK or it may be less likely to be coded in the first position.

## Recommendations

- All secondary care Trusts that treat patients with heart failure must participate in the audit.
- Trusts must continue to submit at least 20 cases per month (or the maximum number if that is less than 20). As a move towards fuller participation, all secondary care Trusts should be encouraged to submit every patient discharged with a primary diagnosis of heart failure.
- Strategic Health Authorities to recommend the inclusion of heart failure related Indicators for Quality Improvement in quality accounts.
- All secondary care service providers to streamline the heart failure care pathway to ensure all patients, regardless of admission ward, have access to recommended medication, in line with National Institute for Health and Clinical Excellence (NICE) guidelines, and that treatment is managed by specialist staff.
- Commissioners to use evidence of participation in the National Heart Failure Audit within the effective commissioning process to ensure that all patients with a confirmed diagnosis of heart failure have access to evidence-based treatment as recommended by NICE.
- Consideration should be given to collecting survival (and if possible re-hospitalisation) data for future years. A median follow-up of just 133 days from discharge (partly explained by the high mortality) is inadequate to describe the full impact of heart failure on survival.

# Update on clinical trials

*John Cleland*

University of Hull

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**ASCEND-HF:** Acute Study of Clinical Effectiveness of Nesiritide in Decompensated Heart Failure Trial

**EMPHASIS:** The Effect of Eplerenone versus Placebo on Cardiovascular Mortality or Heart Failure Hospitalization in Subjects with NYHA Class II Chronic Systolic Heart Failure. Emphasis-HF

**SHIFT:** Systolic Heart Failure Treatment with If Inhibitor Ivabradine Trial

**PEARL-HF:** A Multicenter, Randomized, Double-blind, Placebo-controlled, Parallel-Group, Multiple-Dose Study to Evaluate the Effects of RLY5016 in Heart Failure Patients

**ROCKET-AF:** Stroke Prevention Using the Oral Direct Factor Xa inhibitor Rivaroxaban Compared with Warfarin in Patients with Nonvalvular Atrial Fibrillation

**RAFT:** The Resynchronization/Defibrillation for Ambulatory Heart Failure Trial

**SMART AV:** A Randomized Trial Comparing Empiric, Echocardiographic Guided and Algorithmic AV Delay Programming in Cardiac Resynchronization Therapy (CRT)

**TIM-HF:** Telemedical Interventional Monitoring in Heart Failure, a Randomized, Controlled Intervention Trial Investigating the Impact of Telemedicine on Mortality in Ambulatory Patients with Chronic Heart Failure

**ADVANCE:** Evaluation of the HeartWare® HVAD Left Ventricular Assist Device System for the Treatment of Advanced Heart Failure: Bridge to Transplant Trial

## Biomarkers in practice: what is the clinical point?

*Naveed Sattar*

University of Glasgow

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There is wide interest in biomarkers to improve prediction of cardiovascular disease risk and determine prognosis in patients with existing disease, as well as to help better tailor therapies. The biomarker scope has recently expanded in the heart failure arena with new measures beyond the traditional markers such as brain natriuretic peptide and inflammatory parameters. This talk will give a view of the benchmarks that biomarkers must overcome (i.e. they must add meaningful gains beyond simpler or more routinely measured parameters) based on experience in other areas. More importantly, the talk will critically appraise recent advances in biomarkers and the congestive heart failure field, drawing on recent papers on novel markers of interest.

# Imaging for prognosis in heart failure

*Simon Woldman*

The Heart Hospital, London

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Imaging is playing an increasing role in the prognostic assessment of patients. The most easily available prognostic variable in patients with impaired left ventricular systolic function remains the ejection fraction. However, there is no single measure that accurately predicts death or hospitalisation in patients with heart failure.

Thus, there have been many attempts at using new imaging variables to look at prognosis. The extent of the defect on perfusion imaging and response to dobutamine stress imaging are independent risk variables, as is heart rate variability. More recently, MIBG (metaiodobenzylguanidine) imaging has been shown to predict the risk of death and, more interestingly, arrhythmic death.

This presentation will identify these imaging variables, their strengths and weaknesses, and consider which patients might benefit from their use.

# Renal dysfunction and adverse cardiovascular outcomes/sudden cardiac death in chronic kidney disease

*Kevin Damman*

University of Groningen, The Netherlands

Renal dysfunction is prevalent and the most important prognostic factor in patients with both acute and chronic heart failure (HF). When present, patients with renal dysfunction may have an up to three times higher mortality risk compared with patients with a normal glomerular filtration rate (GFR).

In HF, the pathophysiology of renal impairment is multifactorial and, therefore, complex. However, the most important driving force of a reduction in GFR is probably impaired haemodynamics. Reduced cardiac output is the strongest determinant of a reduced GFR, as it induces a decrease in renal perfusion. However, recent studies also suggest that increased venous congestion/pressure affects renal function.

Not only does decreased GFR appear prevalent in HF, but increased albumin excretion is also common. While reduced GFR mirrors the filtration ability of the kidney, albuminuria represents increased glomerular permeability and glomerular damage. Also, albuminuria has now been confirmed as an important marker for mortality in HF, even in the absence of reduced GFR.

Finally, new pathophysiological processes, and therefore new renal markers, have been proposed in HF. In parallel to renal disease, HF patients do not only frequently suffer from decreased GFR and albuminuria – they also experience tubulo-interstitial damage and fibrosis. This can be measured using specific urinary and plasma markers, which show elevated levels in chronic and acute HF. Interestingly, these markers not only serve as indicators of tubular damage and prognosis, but may also predict the occurrence of acute kidney injury and worsening renal function long before any change in serum creatinine is observed.

In summary, renal impairment in HF encompasses decreased GFR, increased albumin excretion and tubulo-interstitial damage, all of which independently predict outcome. New, promising markers may help guide therapy to preserve renal function, and thereby, prognosis in patients with HF.

## Further reading

Damman K, Navis G, Smilde TD et al. Decreased cardiac output, venous congestion and the association with renal impairment in patients with cardiac dysfunction. *Eur J Heart Fail* 2007;9:872–8.

Damman K, van Deursen VM, Navis G et al. Increased central venous pressure is associated with impaired renal function and mortality in a broad spectrum of patients with cardiovascular disease. *J Am Coll Cardiol* 2009;53:582–8.

Damman K, van Veldhuisen DJ, Navis G et al. Tubular damage in chronic systolic heart failure is associated with reduced survival independent of glomerular filtration rate. *Heart* 2010;96:1297–302.

Hillege HL, Girbes AR, de Kam PJ et al. Renal function, neurohormonal activation, and survival in patients with chronic heart failure. *Circulation* 2000;102:203–10.

Jackson CE, Solomon SD, Gerstein HC et al. Albuminuria in chronic heart failure: prevalence and prognostic importance. *Lancet* 2009;374:543–50.

Masson S, Latini R, Milani V et al. Prevalence and prognostic value of elevated urinary albumin excretion in patients with chronic heart failure: data from the GISSI-Heart Failure trial. *Circ Heart Fail* 2010;3:65–72.

Smilde TD, Damman K, van der Harst P et al. Differential associations between renal function and "modifiable" risk factors in patients with chronic heart failure. *Clin Res Cardiol* 2009;98:121–9.

# ACS guidelines: implications for identification of post-MI LVSD

*Martin Cowie*

National Heart & Lung Institute, Imperial College & Royal Brompton Hospital, London

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In March 2010, NICE issued new guidance on the early management of unstable angina and non-ST segment elevation MI. The key priorities for implementation included: 1) a formal assessment of individual risk of future adverse CV events using a risk scoring system such as that derived from the GRACE Registry; 2) coronary angiography (with follow-on PCT if indicated) within 96 hours of first admission to hospital in patients who have an intermediate or higher risk of adverse cardiovascular events if they have no contraindications; angiography as soon as possible for patients who are clinically unstable or at high ischaemic risk; 3) discussion by a multidisciplinary team regarding the most appropriate revascularisation strategy for the patient; 4) quantification of inducible ischaemia before discharge in patients whose condition has been managed conservatively and who have not had coronary angiography; 5) pre-discharge advice and information about the diagnosis and follow-up arrangements, cardiac rehabilitation, management of cardiovascular risk factors and drug therapy for secondary prevention, and lifestyle changes.

The guideline does mention the need for screening for left ventricular systolic dysfunction (LVSD), but as this is not specifically flagged up in the key priorities, this may be overlooked. The recommendations are quite specific, namely: 1) LV function should be assessed in all patients who have had an MI; 2) LV function assessment should be considered in all patients with unstable angina; and 3) the measures of LV function should be recorded in the patient's notes and in the correspondence between the primary healthcare team and the patient. It is likely that it will fall to the rehabilitation service or the primary care team to check that such assessment has taken place, and that appropriate drug therapy, reassessment and follow-up occurs. A checklist approach in the coronary care unit or in the ACS care pathway document may help ensure that LVSD is not overlooked: such dysfunction is one of the leading causes of death with longer-term follow-up.

## **Further reading**

National Institute for Health and Clinical Excellence. *Unstable Angina and NSTEMI*. Clinical Guideline 94, 2010. Available at <http://guidance.nice.org.uk/CG94/NICEGuidance/doc/English>.

# Cardiopulmonary exercise testing

*Klaus Witte*

University of Leeds and Leeds General Infirmary

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Although the syndrome of chronic heart failure (CHF) combines multiple features – cardiac dysfunction, neurohormonal activation, renal dysfunction and weight loss with skeletal muscle wasting, all of which provide heart failure doctors with their own challenges – the most important feature for patients is exercise intolerance. This can be due to fatigue or breathlessness or both, and is what initially drives patients to their family physician.

The underlying pathophysiology of exercise intolerance in CHF is multifactorial, involving skeletal muscle ultrastructure and metabolism, lung function, cardiac function and the peripheral vasculature. For example, exercise capacity is poorly related to resting cardiac function; acutely improving left ventricular function does not immediately improve objective markers of exercise capacity, although patients seem to feel better for the same level of work. This multifactorial origin is probably the reason that impaired or deteriorating peak exercise tolerance is so accurately predictive of a poor outcome. Cardiopulmonary exercise testing remains the backbone of the assessment and follow-up of patients with CHF.

# What is the evidence for: aldosterone blockers

*Henry Dargie*

University of Glasgow

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Not received at time of going to press.

# What is the evidence for: angiotensin receptor blockers?

*Hugh McIntyre*

Conquest Hospital, Hastings

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Angiotensin-converting enzyme (ACE) inhibitors were introduced at a time when background treatment consisted predominantly of diuretics and digoxin. The results of later studies of angiotensin receptor blockers (ARBs) were against the proven benefit of ACE inhibitors (and the increasing use of beta blockade and aldosterone antagonists). The primary endpoints of studies changed from all-cause mortality to the composite of cardiovascular (CV) mortality and hospitalisation in the CHARM studies. Reliable comparison of studies to guide therapy choices is thus difficult. Although controversial, it is possible to compare the consistently reported “hard” endpoint of all-cause mortality and measures of safety. The recommendations in the National Institute for Health and Clinical Excellence (NICE) guideline update (CG108) are based on meta-analysis of the relevant studies and the following considerations:

**Placebo-based studies of ACE inhibitors in left ventricular systolic dysfunction (LVSD):**

Compared with placebo, ACE inhibitors significantly increased life expectancy and reduced the risk of hospitalisation for heart failure (CONSENSUS,<sup>1</sup> SAVE,<sup>2</sup> SOLVD<sup>3</sup>). Hyperkalaemia, raised creatinine and hypotension were significantly more common with ACE inhibitors than with placebo (SOLVD<sup>3</sup>).

**Placebo-based studies of ARBs in LVSD:** Compared with placebo, ARBs significantly reduced hospitalisation for heart failure and the composite outcome of CV mortality and heart failure hospitalisation. There was a non-significant reduction in all-cause mortality (CHARM-Alternative<sup>4</sup>). Hyperkalaemia, raised creatinine and hypotension were significantly more common compared with placebo.

**Comparison of ACE inhibitors and ARBs in LVSD:** Compared with ACE inhibitors, ARBs non-significantly increased all-cause mortality and significantly increased CV death (ELITE II<sup>5</sup>).

**Addition of ARB to ACE inhibitor and beta-blocker in LVSD:** Compared with placebo, the addition of an ARB to background therapy with an ACE inhibitor and beta-blocker significantly reduced hospitalisation for heart failure and the composite outcome of CV mortality and heart failure hospitalisation. There was no effect on all-cause mortality. Hypotension, hyperkalaemia and raised serum creatinine were significantly more common with ARBs (CHARM-Added,<sup>6</sup> Val-HeFT<sup>7</sup>). In one study of patients with heart failure following myocardial infarction there was a trend towards increased mortality (OPTIMAAL<sup>8</sup>).

**Placebo-based studies of ACE inhibitors and ARBs in heart failure with preserved ejection fraction (HFpEF):** Compared with placebo, angiotensin-II receptor antagonists had no effect on all-cause mortality, CV mortality or heart failure hospitalisation (CHARM-Preserved<sup>9</sup>, I-PRESERVE<sup>10</sup>). Hypotension (one study) and hyperkalaemia were significantly more common with ARBs.

**NICE (CG108) recommendations for ARBs licensed for heart failure (in patients with LVSD):**

- Consider as an alternative to an ACE inhibitor for patients who have intolerable side effects with ACE inhibitors.
- Seek specialist advice and consider as an option for second-line treatment, especially in mild-to-moderate heart failure.
- Monitor serum urea, electrolytes, creatinine and estimated glomerular filtration rate for signs of renal impairment and hyperkalaemia.

There are no recommendations for the use of ARBs in HFpEF.

## References

1. The CONSENSUS Trial Study Group. Effects of enalapril on mortality in severe congestive heart failure. Results of the Cooperative North Scandinavian Enalapril Survival Study (CONSENSUS). *N Engl J Med* 1987;316:1429–35.
2. Pfeffer MA, Braunwald E, Moyé LA et al. Effect of captopril on mortality and morbidity in patients with left ventricular dysfunction after myocardial infarction. Results of the survival and ventricular enlargement trial. The SAVE Investigators. *N Engl J Med* 1992; 327:669–77.
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5. Pitt B, Poole-Wilson PA, Segal R et al. Effect of losartan compared with captopril on mortality in patients with symptomatic heart failure: randomised trial – the Losartan Heart Failure Survival Study ELITE II. *Lancet* 2000;355:1582–7.
6. McMurray JJ, Ostergren J, Swedberg K et al. Effects of candesartan in patients with chronic heart failure and reduced left-ventricular systolic function taking angiotensin-converting-enzyme inhibitors: the CHARM-Added trial. *Lancet* 2003;362:767–71.
7. Krum H, Carson P, Farsang C et al. Effect of valsartan added to background ACE inhibitor therapy in patients with heart failure: results from Val-HeFT. *Eur J Heart Fail* 2004;6:937–45.
8. Dickstein K, Kjekshus J; OPTIMAAL Steering Committee of the OPTIMAAL Study Group. Effects of losartan and captopril on mortality and morbidity in high-risk patients after acute myocardial infarction: the OPTIMAAL randomised trial. *Lancet* 2002;360:752–60.
9. Yusuf S, Pfeffer MA, Swedberg K et al. Effects of candesartan in patients with chronic heart failure and preserved left-ventricular ejection fraction: the CHARM-Preserved Trial. *Lancet* 2003;362:777–81.
10. Massie BM, Carson PE, McMurray JJ et al. Irbesartan in patients with heart failure and preserved ejection fraction. *Lancet* 2008; 359:2456–67.

# What is the evidence for: isosorbide dinitrate/hydralazine combination?

*Abdallah Al-Mohammad*

Sheffield Teaching Hospitals NHS Foundation Trust

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In 1986, a combination of isosorbide dinitrate and hydralazine was the first medical therapy found to reduce both the morbidity and mortality of heart failure caused by left ventricular systolic dysfunction. Although eclipsed by the dawn of the angiotensin-converting enzyme (ACE) inhibitor the following year, and then dwarfed in a direct comparison in 1991, isosorbide dinitrate/hydralazine combination continued to attract the attention of a few enthusiasts, particularly in situations where ACE inhibitors and angiotensin-receptor blockers could not be given. Scientific interest in the combination was renewed with the realization that certain ethnic groups do not derive the same benefit from ACE inhibitors as do the majority of patients. The publication of the African-American Heart Failure Trial (AHeFT) 6 years ago brought the combination back from the brink!

## Further reading

Carson P, Ziesche S, Johnson G et al. Racial differences in response to therapy for heart failure: Analysis of the Vasodilator-Heart Failure Trials. *J Card Fail* 1999;5:178–87.

Cohn JN, Archibald DG, Francis GS et al. Veterans Administration Cooperative Study on Vasodilator Therapy of Heart Failure: influence of prerandomization variables on the reduction of mortality by treatment with hydralazine and isosorbide dinitrate. *Circulation* 1987;75(5 II Suppl):IV49–54.

Johnson G, Carson P, Francis GS et al. Influence of prerandomization (baseline) variables on mortality and on the reduction of mortality by enalapril. Veterans Affairs Cooperative Study on Vasodilator Therapy of Heart Failure (V-HeFT II). V-HeFT VA Cooperative Studies Group. *Circulation* 1993;87(6:Suppl):VI32–9.

Taylor AL, Ziesche S, Yancy C et al. Combination of isosorbide dinitrate and hydralazine in blacks with heart failure. *N Engl J Med* 2004;351:2049–57.

# The NICE 2010 partial update: treatment

*Suzanna Hardman*

Whittington Hospital, London

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Dr Hardman will address important aspects of the treatment of chronic heart failure with reference to the 2010 National Institute for Health and Clinical Excellence (NICE) guidance.

# The NICE partial update – the view from primary care

*Jim Moore*

Stoke Road Surgery, Bishops Cleeve, Cheltenham

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National Institute for Health and Clinical Excellence (NICE) clinical guideline 108 – *Chronic Heart Failure* is an interesting mix of the old and the new! Heart failure has a poor prognosis, similar to that of many cancers, and therefore timely assessment and early treatment are important. The use of natriuretic peptides, whilst optional in previous guidance, is now central to the initial assessment of patients with suspected heart failure and, along with a past history of myocardial infarction, will be used to identify patients at highest risk requiring specialist assessment and echocardiography within 2 weeks. In many areas this will involve the introduction of natriuretic peptide testing and, along with the provision of early specialist assessment, will have significant implications for those commissioning and providing heart failure services.

The drug treatment of left ventricular systolic dysfunction, as outlined in the guidance, may seem familiar, though there are subtle yet significant changes within. For example, the important role of beta-blockers is reinforced by their positioning alongside angiotensin-converting enzyme inhibitors as first-line therapy. We are encouraged to be more inclusive in the use of beta-blockers, particularly in those patients with comorbidities such as chronic obstructive pulmonary disease for whom, unjustifiably, we may have denied this treatment in the past.

The term “heart failure with preserved ejection fraction (HFPEF)” will be new to many in primary care. Some may be familiar with alternative terms, such as diastolic dysfunction, but few are likely to have experience in managing HFPEF and will therefore require education and support regarding this.

Lastly, the central role of the specialist multidisciplinary heart failure team in both assessing those with suspected heart failure and subsequently managing those with persistent symptoms is more clearly defined within this document. This is consistent with the overall message that, both in primary and secondary care, heart failure specialist services should, where possible, be involved in the care of our heart failure patients.

## **Further reading**

National Institute for Health and Clinical Excellence. *Chronic Heart Failure. Management of Chronic Heart Failure in Adults in Primary and Secondary Care*. Clinical Guideline 108, 2010. Available at: <http://guidance.nice.org.uk/CG108>.

# The NICE partial update – the view from secondary care

*Simon Woldman*

The Heart Hospital, London

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The new National Institute for Health and Clinical Excellence (NICE) guidance stipulates that essentially all patients with heart failure need to be seen by a secondary-care consultant within 6 weeks of presentation to a GP surgery. Patients with a previous myocardial infarction or a high B-type natriuretic peptide (BNP) level need to be seen within 2 weeks.

How should we organise this? Should secondary-care consultants specialising in heart failure give up the day job and decamp into the community? Would anyone notice?

There are about 1200 incident cases of heart failure in North Central London (NCL) (population 1.2 million). Assuming that 3–4 consultations are required to confirm one diagnosis, that's at least 3600–4800 new patient appointments required. There are only seven specialists in heart failure in NCL. Should we go home and pretend it is all a bad dream or re-organise our services to meet the need? The new NCL Heart Failure Task Group pathway will be discussed as a potential part-solution to the problem.

# Cardiac rehabilitation – practicalities of meeting NICE guidance

*John Buckley*

University of Chester

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Both the National Institute for Health and Clinical Excellence (NICE) guidelines and the British Association for Cardiac Rehabilitation (BACR) standards include patients with heart failure (CHF) as being eligible for cardiac rehabilitation (CR). Furthermore, the new Department of Health's Commissioning Pack for Cardiac Rehabilitation will also state that these people should be included when developing a service specification for commissioning services. Currently, the National Audit for Cardiac Rehabilitation reports that less than 2% of eligible CHF patients are taking up CR, despite evidence and recommendations that exercise-based CR is safe and effective efficacy in CHF. It must, however, be remembered that there is more to CR than just exercise, and that all the core components of the BACR standards are of benefit to this needy group. Presently, current evidence suggests that unlike rehabilitation for the more traditional groups of patients (post-myocardial infarction and revascularisation groups), centre- or hospital-based CR is more effective than home-based CR, but undoubtedly home-based CR seems an obvious option approach to serving the needs of people with CHF. This presentation will therefore look at reviewing the evidence of comprehensive CR in CHF and will invite delegates to contribute their ideas to the issue of its practical implementation, which can be considered by such bodies as the BACR.

## Advanced care planning (including national audit)

*Simon Conroy*

Geriatric Medicine, University of Leicester School of Medicine

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Heart failure shares a final common path with other long-term conditions, such as chronic obstructive pulmonary disease, in which the final years of life are characterised by clinical instability, progressive frailty and high levels of resource use. The transition from active disease management to palliation can be difficult to define. Advance care planning is widely advocated as a vehicle for improving communication generally, but specifically in identifying patient priorities towards the end of life. However, the holy grail of enhanced patient autonomy and reduced resource use may be somewhat illusory. This presentation will critique the evidence base for advance care planning and its impact on patients and service outcomes.

# Withdrawal of therapy (case based; simple issues such as reduction/withdrawal of BB or ACEI etc., through to withdrawal of drugs/device therapy in late-stage disease)

*Jim Beattie*

Birmingham Heartlands Hospital

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In recent years we have made enormous strides in our understanding of the basis of heart failure (HF), in the required evidence-based therapy, and in the use of novel interventions that continue to appear. Many individuals live longer, and more productive and more comfortable lives due to the application of such innovations.

The trade-off lies in the burgeoning survivorship of an increasingly aged HF population, subject to significant comorbidity. Life expectancy may be prolonged, but the technical aspects intrinsic to current comprehensive HF therapy may undermine the shifting goals of care, and particularly impact the dying phase. Coincident with developments in disease-oriented therapy, the remit of palliative care (PC), initially confined to the terminal care of cancer patients, has been increasingly recognised as relevant to the needs of those affected by HF.<sup>1,2</sup> In England, NHS Improvement has been in the vanguard of the promotion of HF end-of-life care ([www.heart.nhs.uk/endoflifecare](http://www.heart.nhs.uk/endoflifecare)), but attempts to integrate such care within an already complex clinical scenario are often difficult. Clinical navigation may be compromised by the unpredictable HF disease trajectory, poor communication and a lack of care coordination. Dilemmas often arise in decisions on the appropriateness of continuing established HF treatment, particularly in relation to device therapy.<sup>3</sup> This presentation will focus on the challenges and opportunities presented by these aspects of advanced HF care.

## References

1. Goodlin SJ. Palliative care in congestive heart failure. *J Am Coll Cardiol* 2009;34:386–96.
2. Jaarsma T, Beattie JM, Ryder M et al., for the Advanced Heart Failure Study Group of the HFA of the ESC. Palliative care in heart failure: a position statement from the palliative care workshop of the Heart Failure Association of the European Society of Cardiology. *Eur J Heart Fail* 2009;11:433–43.
3. Beattie J. Implantable cardioverter defibrillators in patients who are reaching the end of life. British Heart Foundation, London, 2007. Available at: [www.bsh.org.uk/portals/2/icd%20leaflet.pdf](http://www.bsh.org.uk/portals/2/icd%20leaflet.pdf).

# What do patients want?

Steve Oxberry

Calderdale and Huddersfield NHS Trust and Kirkwood Hospice, Dalton, Huddersfield

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Patients with advanced chronic heart failure (CHF) often face a number of daily challenges. More-severely affected patients find it almost impossible to achieve even the most basic of activities without experiencing significant symptoms.<sup>1,2</sup> Many of these symptoms are found at the same level of severity as those experienced in advanced-cancer populations.<sup>3</sup> However, the disease trajectory for CHF patients appears more uncertain, and symptom control issues can receive less attention, than in their counterparts with cancer. In addition, patients have to adapt to a changing level of function, leading to social isolation, loss of activity, loss of role and fears for the future. The complex physical, psychological, social and spiritual problems that patients with advanced disease experience are amenable to a symptom-control/palliative-care approach.

Not all patients with CHF are the same and they should not be managed as such. Individualised management is appreciated by patients, and cardiology services are often best placed to highlight prognostic or symptom control issues that affect advanced patients. Communication and information are key to this process. However, such discussions with patients and carers can be difficult.<sup>4</sup>

The integration of a palliative-care approach is expanding in certain areas across the UK, via the collaboration of palliative medicine and cardiology, in order to meet the interests of patients. Palliative care should be seen as an alternative for those who do not wish, or who are unable, to have further treatment, but should not be seen as an either/or approach. Giving patients the information to allow them to be able to plan for the future, where possible, should help them address some of the important issues in life in the limited time they might have left. Palliative medicine can help with symptom control, improving quality of life, planning for the future, preferred place of care and issues surrounding the last phases of life in addition to what can be achieved in cardiology.

There is a cohort of patients who can see no need to involve a palliative-care approach, but similarly there is a cohort that would welcome one. Having a change in emphasis in treatment towards a palliative approach should be seen as just another step on the trajectory of a patient's illness when they enter a phase when quality may be seen to be as important as quantity.

## References

1. Thornhill K, Lyons AC, Nouwen A et al. Experiences of living with congestive heart failure: a qualitative study. *Br J Health Psychol* 2008;13:155–75.
2. Jeon YH, Kraus SG, Jowsey T et al. The experience of living with chronic heart failure: a narrative review of qualitative studies. *BMC Health Serv Res* 2010;10:77–86.
3. Stewart S, Macintyre K, Hole DJ et al. More 'malignant' than cancer? Five-year survival following a first admission for heart failure. *Eur J Heart Fail* 2001;3:315–22.
4. Rogers AE, Addington-Hall JM, Abery AJ et al. Knowledge and communication difficulties for patients with chronic heart failure: qualitative study. *BMJ* 2000;321:605–7.

## Suggested additional reading

- Caldwell PH, Arthur HM, Demers C. Preferences of patients with heart failure for prognosis communication. *Can J Cardiol* 2007; 23:791–6.
- Horne G, Payne S. Removing the boundaries: palliative care for patients with heart failure. *Palliat Med* 2004;18:291–6.
- Johnson M, Lehman R (eds). *Heart Failure and Palliative Care: A Team Approach*. Oxford, Radcliffe Publishing, 2006. Particularly chapters entitled “Supportive care”; “Communication issues” and “Palliative care services for patients with heart failure”.
- Selman L, Harding R, Beynon T et al. Improving end-of-life care for patients with chronic heart failure: let's hope it'll get better, when I know in my heart of hearts it won't. *Heart* 2007;93:963–7.

# Who's right?

*Damien Cullington*

University of Hull

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Patients with heart failure present to healthcare providers with a rich variety of symptoms, and many cases are typified by increasing shortness of breath on exertion, orthopnoea and increasing peripheral oedema. Usually the diagnosis is secured relatively easily, treatment commenced and titrated according to standard national and international guidelines. We present an interesting case where there is only a narrow evidence base to direct management, and hope this will stimulate a lively discussion.

## Severe aortic stenosis and severe left ventricular dysfunction – to replace or not to replace?

*Robin Weir*

National Advanced Heart Failure Unit, Golden Jubilee National Hospital, Glasgow

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The case of a 55-year-old man with severe aortic stenosis and severe left ventricular systolic dysfunction in the context of prior cardiotoxic chemotherapy for non-Hodgkin's lymphoma will be presented. The evaluation and risk stratification of this patient, whose heart failure symptoms developed over a relatively short period of time, together with the subsequent medical, surgical and, ultimately, device-related management strategies employed, will be discussed, with intended audience participation in the decision-making processes involved in this patient's (tumultuous) journey.

## Friedrich's ataxia

*Donah Zachariah*

Portsmouth Hospitals NHS Trust

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Case of a 23-year-old patient with Friedrich's ataxia presenting with palpitations and multi-organ failure – a discussion of management issues and prognostic outcomes.

# Acute decompensated heart failure treated with ultrafiltration

*Dominic Kelly*

Southampton University Hospital

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Diuretic therapy remains the mainstay of treatment for patients with acute decompensated heart failure (ADHF) in the UK. Despite this well-established therapy, a number of patients do not achieve rapid diuresis or may be resistant to diuretic therapy, leading to increased morbidity, prolonged hospital stay and increased costs to the NHS. Ultrafiltration involves the extracorporeal removal of salt and water from the circulation, and results in rapid and predictable loss of total body fluid, leading to a more rapid achievement of euvolaemia. Recent studies have demonstrated the efficacy of such technology in achieving safe and rapid fluid removal, with subsequent reductions in hospital readmissions and of oral diuretic requirements.<sup>1,2</sup> This modern therapy, which is increasingly being used in the USA, has now been included in the AHA/ACC guidelines for the management of patients with ADHF. We have recently introduced the use of ultrafiltration for ADHF at Southampton University Hospital. We present a case of ADHF treated with ultrafiltration and discuss the early results of this service in our trust.

## References

1. Costanzo MR, Guglin ME, Saltzberg MT et al. Ultrafiltration versus intravenous diuretics for patients hospitalized for acute decompensated heart failure. *J Am Coll Cardiol* 2007;49:675–83.
2. Costanzo MR, Saltzberg M, O'Sullivan J et al. Early ultrafiltration in patients with decompensated heart failure and diuretic resistance. *J Am Coll Cardiol* 2005;46:2047–51.

*There are no abstracts for Session 8 as this is a debate*

# **Meet the Expert Sessions**

**EXHIBITION AREA:  
Benjamin Britten Lounge**

## THURSDAY 25 NOVEMBER 2010

Expert: **Dr Simon Williams**  
(Wythenshawe Hospital, Manchester)

Time: 13:20

Topic: The importance of lowering heart rate, from health to disease through the cardiovascular continuum

Location: Servier exhibition stand

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Expert: **Mr Saleem Haj-Yahia**  
(Golden Jubilee National Hospital, Glasgow)

Time: 13:35

Topic: Mechanical circulatory support and destination therapy

Location: Thoratec exhibition stand

## FRIDAY 26 NOVEMBER 2010

Expert: **Professor Henry Dargie**  
(Western Infirmary, Glasgow)

Time: 13:30

Topic: Heart failure home monitoring

Location: Alere exhibition stand

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Expert: **Dr Paul Kalra**  
(Portsmouth Hospitals NHS Trust)

Time: 13:45

Topic: The Impact of Ferinject on renal function and HR-QoL: analyses of the FAIR-HF study

Location: Vifor Pharma exhibition stand

# **Biographies**

## **Dr Abdallah Al-Mohammad**

Born in 1962 in Damascus, Syria, Dr Al-Mohammad qualified at Damascus University's Medical School in 1985, and moved to the UK in 1987. He did his basic medical training in Birmingham, Haverfordwest and Abergavenny, becoming a member of the Royal College of Physicians in 1990, and moved to London where he did a rotation as a Registrar in Neurology, Diabetes and General Medicine. In 1992, he started a rotation as a Registrar in Cardiology and General Medicine in London. In 1995, he moved to Aberdeen as a clinical research fellow in cardiology, where he worked on the topic of hibernation and heart failure using positron emission tomography and cardiac magnetic resonance as investigative tools until 1998. In 1999, still in Aberdeen, he became an SpR in cardiology and general internal medicine. Since May 2001, he has held the position of Consultant Cardiologist at Sheffield Teaching Hospitals NHS Foundation Trust, with special interest in heart failure and imaging.

In 2003, Dr Al-Mohammad became a fellow of the Royal College of Physicians of Edinburgh, and joined an advisory group assessing the roles of myocardial perfusion scintigraphy on behalf of the National Institute for Health and Clinical Excellence (NICE). He became a fellow of the Royal College of Physicians of London in 2005 and, in 2008, was appointed a clinical adviser to the guideline development group at NICE for the chronic heart failure guideline – partial update.

Dr Al-Mohammad has published papers on positron emission tomography, nuclear cardiac imaging, magnetic resonance imaging, echocardiography and heart failure.

## **Dr John Baxter**

I am a Consultant Geriatrician at Sunderland Royal Hospital, with an interest in heart failure in older persons.

I am clinical lead for heart failure and also for end-of-life care at Sunderland Royal Hospital.

I am an observer on the board of the British Society for Heart Failure. I am geriatrician representative of the North East SHA End of Life Clinical Innovation Team. I am treasurer of the British Geriatrics Society Cardiovascular Section.

## **Dr Jim Beattie**

Jim Beattie is Consultant Cardiologist and heart failure lead at Birmingham Heartlands Hospital, part of the Heart of England NHS Foundation Trust. He has had an interest in end-of-life care for heart failure for several years and, as a national clinical lead with the NHS Heart Improvement Programme, has formulated several national policy documents driving service improvement through cardiac networks. He represented cardiovascular medicine in the development of the National End of Life Care Strategy published in 2008, and has also worked in this area with the British Heart Foundation and the European Society of Cardiology. He is a trustee of the National Council for Palliative Care and chair of their heart failure policy group.

## **Dr John Buckley**

- President British Association for Cardiac Rehabilitation (BACR)
- Fellow of the British Association of Sport & Exercise Sciences (BASES)
- BASES Accredited Exercise Physiologist
- Senior Lecturer in Exercise, Health and Rehabilitation and Programme Leader, MSc Cardiovascular Rehabilitation, University of Chester
- Founding Committee Member of BACR-Exercise Professionals Group
- Tutor to many BACR courses
- Past Chair of BASES Division of Physical Activity for Health
- Founding Chair of BASES Exercise for Health Practitioners' Interest Group
- Exercise Physiology Advisor to Skills Active Level 4 Standards

In 1988 John Buckley, as a Founding Managing Partner, started the Lifestyle Exercise & Physiotherapy Centre at Shrewsbury. For 21 years, this business not only involved a specialist fitness centre and physiotherapy clinic, it provided contracted services in exercise and physiotherapy to the local PCT and hospitals, which included John's front-line work as an Exercise and Cardiac Rehabilitation Specialist at the Royal Shrewsbury Hospital and the University Hospital of North Staffordshire.

For 17 years, from 1989 to 2006, his work was linked with teaching and research at the Physiotherapy School at Keele University. He is now a Senior Lecturer at the University of Chester, leading up the MSc in Cardiovascular Rehabilitation and the PGCert in Cardiovascular Rehabilitation at the Asian Heart Institute in Mumbai, India. He currently works with the Cardiac Rehab' team at the Countess of Chester Hospital, combining work in advising patients with tutoring University of Chester postgraduate students. John has authored and edited textbooks, numerous chapters in BACR, BASES and sports medicine manuals/guidelines, and has published research in internationally renowned journals in the area of perceived exertion and assessments of functional capacity in clinical populations.

## **Mrs Jane Butler**

Jane qualified as a registered nurse in 1985 and has spent the past 25 years within cardiology, both acute and preventative. The past 13 years have been within the specialty of heart failure, and she has been responsible for setting up two heart failure services (at Newham General Hospital, and Barts and The London NHS Trust). She is currently employed by Barts and The London NHS Trust as a consultant nurse to lead on this specialty. Jane has been in this post for the past 9 years, and has fully established this service into primary, secondary and tertiary care.

Jane gained her MSc in Cardiology at Brighton University and is now embarking on her PhD.

## **Professor Andrew Clark**

Professor Andrew Clark was educated at Pembroke College, Cambridge, and trained in medicine at the Westminster Medical School, London. He trained in cardiology at Manchester Royal Infirmary, the National Heart and Lung Institute in London, and the Western Infirmary in 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. More recently, he has become interested in the problems of heart failure as a wasting disease, and the possibility that obesity and high cholesterol may, paradoxically, be beneficial in heart failure.

He became a Senior Lecturer in cardiology at the University of Hull in 1999 and was promoted to Reader in 2004. He is responsible for running the echocardiography service in Hull, and plays an active role in the day-to-day provision of cardiology services to the population of Hull and the East Riding of Yorkshire. He became a professor in 2009.

He is a founder member of the British Society for Heart Failure, and a member of the Working Groups for Heart Failure and Cardiac Rehabilitation and Exercise Physiology in the European Society of Cardiology.

## **Professor John Cleland**

Professor John Cleland qualified in medicine in 1977 at the University of Glasgow. After a period of postgraduate training and an introduction to research he was appointed from 1986–1994 first as a Senior Registrar and subsequently as Senior Lecturer in Cardiology and Honorary Consultant Cardiologist at St Mary's Hospital, Paddington and the Hammersmith Hospital, London. In 1994, Professor Cleland was awarded a Senior Research Fellowship by the British Heart Foundation to transfer to the Medical Research Council's Clinical Research Initiative in Heart Failure. Professor Cleland was appointed to the Foundation Chair of Cardiology at the University of Hull in 1999.

Professor Cleland's main field of interest is in heart failure, extending from its epidemiology, detection and prevention, through the development and implementation of guidelines for the application of current knowledge, to large randomised trials to study new (and old) treatments heart failure. Particular current interests include the role of myocardial hibernation contributing to heart failure and its treatment (including beta-blockers and revascularisation), 'diastolic' heart failure, vascular dysfunction, the potential deleterious effect of aspirin in heart failure, ventricular resynchronisation, telemonitoring, implantable haemodynamic monitoring devices, co-morbidities including diabetes, anaemia, atrial fibrillation and renal dysfunction and new interventions for acute decompensated heart failure. Active programmes for the assessment of heart failure and its optimal management using cardiac impedance, magnetic resonance, computer tomography and advanced electrophysiology are also in place.

Professor Cleland heads The Academic Unit of Cardiology that includes a Reader, 2 Senior Lecturers and a team of basic and clinical scientists, technicians and research nurses dedicated to the above research programme.

## **Dr Derek T Connelly**

Dr Derek Connelly qualified in medicine at the University of Glasgow in 1984. After early training in medicine and cardiology in Glasgow, he moved to the Royal Brompton Hospital, London, in 1989, for a research post in cardiac electrophysiology. He then moved to the Cardiothoracic Centre in Liverpool, in 1992, as senior registrar in cardiology. He was appointed Senior Lecturer and Consultant Cardiologist there in 1997, and moved back to a Consultant Cardiologist post in Glasgow in 2004.

His main interests are radiofrequency ablation for cardiac arrhythmias, particularly atrial fibrillation, and device implantation, particularly biventricular devices (cardiac resynchronisation therapy). From 2005 to 2008, he was president of Heart Rhythm UK, and he has been a trustee of the Arrhythmia Alliance since its foundation in 2004.

### **Dr Simon Conroy**

Simon Conroy was appointed as Senior Lecturer and geriatrician at the University of Leicester in 2008, having moved from a Clinical Lecturer post in Nottingham. His PhD thesis was on falls prevention. He is one of few UK graduates of the European Academy of Medicine for Ageing (2005). He is honorary secretary of the British Geriatrics Society and sits on a number of national and international panels relating to the health care of frail older people.

His main clinical interests are acute and interface/community geriatrics. His research interests reflect his passion for improving outcomes for frail older people and include falls prevention, acute care of frail older people and advance care planning.

### **Dr Peter Cowburn**

Dr Peter Cowburn is a Consultant Cardiologist with a specialist interest in heart failure at Southampton General Hospital. 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 inotrope-supported CRT and has an interest in the haemodynamic effects of CRT. He was Deputy Chair of the British Society for Heart Failure (BSH) in 2007–9, having served as a Councillor to the Board in 2005–7. He represented the BSH as a clinical expert for the National Institute for Health and Clinical Excellence CRT appraisal process. At Southampton General he has helped establish a nurse-led inpatient heart failure service, which has led to a dramatic reduction in inpatient mortality. He has also recently commenced an ultrafiltration programme.

### **Professor Martin R Cowie**

Professor Martin Cowie is Professor of Cardiology at the National Heart & Lung Institute, Imperial College, and Honorary Consultant Cardiologist at the Royal Brompton Hospital, London.

A founding member and currently Past-Chair of the British Society for Heart Failure, 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). He advises NICE on heart failure issues, and is a Senior Investigator of the National Institute of Health Research. In 2010, he was asked to set up and chair the National Heart Failure Study Group, working to facilitate robust multicentre studies addressing clinically relevant issues in the UK.

Professor Cowie's studies and reviews have been featured in a variety of peer-reviewed journals, including *The Lancet*, *European Heart Journal*, *British Medical Journal*, *Heart* and the *European Journal of Heart Failure*. He is a member of the editorial board of *Heart*, *The British Journal of Diabetes & Vascular Diseases*, *Cardiovascular Diabetology* and the *European Journal of Heart Failure*. He has contributed chapters to many books, including a chapter on heart failure for the 2010 version of the *Oxford Textbook of Medicine*.

## **Dr Damien Cullington**

Damien Cullington graduated with MBChB (Hons) from the University of Liverpool in 2002 and was appointed MRCP(UK) in 2005. His early medical and cardiology training was at the Royal Liverpool University Hospital, Liverpool Heart and Chest Hospital, and the University Hospital of North Staffordshire. After developing an early interest in heart failure, he accepted a post as an MD research fellow under the supervision of Professors John Cleland and Andrew Clark in 2007. He restarted cardiology specialist training in 2010 in the Yorkshire and Humber Deanery, and has been appointed to the Yorkshire Grown Up Congenital Heart disease training programme based at Leeds for 1 year commencing in 2011. He is interested in the management of advanced heart failure and cardiopulmonary exercise testing.

## **Dr Kevin Damman**

Kevin Damman studied medicine at the University of Groningen in The Netherlands. As a student he developed a passion for cardiology and clinical science. After graduating in 2005, under the supervision of Professors van Veldhuisen, Navis and Hillege, he was awarded his PhD in April 2009 for his dissertation "Cardiorenal interaction in heart failure". Currently, he is in his clinical cardiologist training programme, completion of which is due in 2014.

## **Professor Henry Dargie**

Not received at time of going to press.

## **Dr Mark de Belder**

Mark de Belder is a Consultant Cardiologist at The James Cook University Hospital in Middlesbrough, with a clinical and research interest in interventional cardiology, and is the lead for clinical research in his department. He was formerly Audit Secretary of the British Cardiovascular Intervention Society and Secretary of the British Cardiovascular Society. He was the Chair of the Data Monitoring Group in the National Infarct Angioplasty Pilot Project. He is currently President of the British Cardiovascular Intervention Society.

## **Dr Ahmet Fuat**

Dr Ahmet Fuat has been in general practice in Darlington since 1986. Previously a GP tutor and PCT cardiology lead, he now acts as GP advisor to County Durham and Darlington NHS Foundation Trust. He works as a GP specialist in cardiology and, for 8 years, has run an integrated heart failure service across primary and secondary care. Holding a PhD from Durham University, he is an active researcher in cardiology and a senior clinical lecturer at the School of Medicine and Health at Durham.

Dr Fuat sits on the editorial boards of both the *British Journal of Cardiology* and *Primary Care Cardiovascular Journal*. He is a tutor on the Bradford postgraduate diploma in cardiology course, and chairs and lectures on the highly successful BMJ Masterclasses in Cardiology series. Dr Fuat has been instrumental (with Dr Kathryn Griffith) in setting up a GPSI Forum in Cardiology, which is affiliated to the Primary Care Cardiovascular Society. This Forum now boasts 100 members, who support each other and meet regularly in clinical symposia.

## **Dr Suzanna Hardman**

Dr Suzanna Hardman is a Consultant Cardiologist with an interest in community cardiology at the Whittington Hospital, London, where she leads the Heart Failure Services, and is an Honorary Senior Lecturer at University College London.

She has worked closely with the community for many years to ensure consistent high-quality care for patients with heart failure, irrespective of where they present. A lack of evidence to determine clinical practice has been the stimulus for her heart failure research, which has included the role of natriuretic peptides in diagnosis, and different models of care for heart failure patients – demonstrating the impact of early diagnosis, optimal inpatient care and self-management for some, in effecting lower mortality and re-admission rates. The impact of interval on left ventricular function, using atrial fibrillation as a model, was the subject of her PhD and remains an area of interest.

She is very involved with the emerging advanced training in heart failure and advises the pan London Specialist Training Committee (cardiology) and Royal Society of Medicine Cardiology section on heart failure-related issues; she also continues to work with the British Society for Heart Failure (BSH) and British Cardiovascular Society on a wide range of issues including re-validation and work-force planning. She was a member of the recent National Institute for Health and Clinical Excellence Guideline Development Group for the partial update of the heart failure guidelines (published 2010) and is now involved in related quality outcome measures. Dr Hardman represents the BSH in varied contexts in UK and Europe, and this year led the UK initiatives for the European Heart Failure Awareness Day.

A longstanding member of the BSH, she has been elected Councillor, Deputy Chair and Treasurer. She is currently Chair-Elect of the Society.

## **Dr Paul Kalra**

Dr Paul Kalra is a Consultant Cardiologist at Portsmouth Hospitals NHS Trust, with a particular sub-specialty interest in the management of patients with heart failure.

Dr Kalra maintains an active interest in medical education and research, and has >65 peer-reviewed publications. He is a co-organiser of a successful annual national Cardio-Renal Conference. He has edited a cardiology text book Specialist Training in Cardiology. In 2009, he was elected to the Board of the British Society for Heart Failure as a Councillor.

## **Dr Dominic Kelly**

Having graduated with honours from Liverpool Medical School in 2000, I also hold a first class BSc in Pharmacology. My early career was spent in Liverpool before moving to undertake BHF-funded research investigating the effects of circulating metalloproteinases on left ventricular remodelling and prognosis post-myocardial infarction at the University of Leicester under Professor Iain Squire. I was awarded my MD in 2008. I have been a Wessex Cardiology SpR since 2006 and am currently a Fellow in Heart Failure and Devices at Southampton University Hospital under Dr Peter Cowburn. I have played a major role in the development of Southampton's ultrafiltration service for acute decompensated heart failure.

## **Dr Antoinette Kenny**

Antoinette Kenny is Consultant Cardiologist at Freeman Hospital, Newcastle upon Tyne, and Clinical Head of the Regional Echocardiography Department. She qualified from University College Dublin and trained in cardiology at St. James's Hospital, Dublin, and Papworth Hospital, Cambridge. Dr Kenny was awarded the Grimshaw Parkinson Postgraduate Studentship from Cambridge University, and completed an MD in echocardiographic imaging of coronary arteries and haemodynamics at Papworth Hospital. Following this, she was appointed a Research Fellow in Echocardiography at the University of Health Sciences in Portland, Oregon, USA, under the supervision of Professor David Sahn.

Dr Kenny has served two terms of office on the Council of the British Society of Echocardiography (BSE) and as Chair of the BSE Scientific and Research Committee. She is a past Editor of the *Annual Heart Echo* supplement. She has published widely in the field of echocardiography and has co-authored a textbook. Dr Kenny is Director of the Newcastle Echocardiography course, a faculty member of other national courses and an invited international lecturer.

## **Mrs Annie MacCallum**

Annie is Head of Heart Services at NHS Gloucestershire. She gained her cardiology experience in cardiac units in Edinburgh, Bristol and Gloucester. Annie also has 10 years of coronary heart disease practice nurse experience in primary care.

The experience gained in the acute hospital management of heart failure and her primary care experiences helped to inform her understanding of the unmet needs of heart failure patients.

Annie developed the proposal for a countywide Heart Failure Service for Gloucestershire. Launched in January 2004 and with the help of a successful bid to the British Heart Foundation, the Service offers community echo, GPSI clinics and nine Heart Failure Specialist Nurses based in primary care, but in close liaison with acute hospitals and cardiologists. The service is the regionally recommended model for the South West SHA.

Annie joined the heart failure policy group for the National Council for Palliative Care in 2009 and contributed to the development of the 2010 audit on the engagement of Heart Failure Specialist Nurses with Palliative Care Services.

A contributor to the *British Journal of Cardiac Nursing*, she has published articles on symptom management in end-stage heart failure this year.

Annie was elected to the Board of the British Society for Heart Failure in July 2009.

## **Dr Theresa McDonagh**

Dr Theresa McDonagh is a Consultant Cardiologist with an interest in heart failure at the Royal Brompton Hospital, London. Clinically, she has a long track record in heart failure. In addition to having a hands-on input in clinical heart failure, she has an active research profile in the epidemiology of left ventricular dysfunction and in the clinical utility of the natriuretic peptides in both the diagnosis and prognosis of heart failure.

Dr McDonagh has been on the board of the British Society for Heart Failure (BSH) for the past 6 years in various capacities, and is now Chair of the Society. She has taken a particular interest in developing clinical standards for heart failure and, through the Specialty Advisory Committee in Cardiology, has been involved with developing the heart failure curriculum for sub-specialty cardiology registrar training. In addition, she has been part of the group moving the BSH Heart Failure Audit forward.

## **Dr Hugh F McIntyre**

Consultant Physician to the Conquest Hospital, Hastings, and Senior Lecturer to Brighton and Sussex Medical School. Specialist interest: cardiovascular medicine and research in older patients and heart failure. Education: Oxford University and Westminster Medical School. MD in electromechanical properties of hypertrophied human myocardium. Lead for Hastings Heart Function Clinic (Beacon Heart Improvement Programme site).

Member of the ESC Heart Failure Association Committees on Education, and on Heart Failure with Preserved Ejection Fraction. Member of National Institute for Health and Clinical Excellence (NICE) Heart Failure Guideline Group and NICE Quality Standards Group. Regional Heart Failure Lead for Enhancing Quality Programme (South East).

Over 100 publications including book chapters and book (*Heart Failure in the Older Patient*); reviewer and editorial board member of UK and European journals. Research programme investigator.

## **Dr Jim Moore**

I studied medicine as an undergraduate in Edinburgh before moving to Gloucestershire to work as a GP principal. Throughout my medical career I have maintained an interest in cardiology and cardiovascular disease, particularly those aspects that are relevant to primary care. I was closely involved in the development of the primary care-based Gloucestershire Heart Failure service, where I continue to work as a GPwSI. I represent primary care in the cardiovascular arena, both at local and regional level, and chair the Gloucestershire CHD network. I am presently an Observer to the Board of the British Society for Heart Failure.

## **Dr Steve Oxberry**

I qualified from Leeds University Medical School in 1999, having achieved an intercalated BSc (Hons) in Pharmacology, and completed my basic clinical postgraduate training in Yorkshire, including medical jobs in cardiology in Harrogate, oncology and allied subjects (including 6 months on the regional liver transplant unit) in St James's in Leeds. Despite this experience in acute medicine, I felt my focus should be on the expanding field of palliative medicine, having spent the last 6 months of my medical rotation in a local hospice.

Whilst undertaking my palliative medicine registrar training, I had the opportunity to join Academic Cardiology in Hull, where I completed my PhD entitled "Opioids for the management of breathlessness in CHF". A variety of research papers are (slowly) being produced from this work, given my competing pressures of a new consultancy post in Huddersfield and the attentions of my young family!

## **Professor Naveed Sattar**

Naveed Sattar obtained his medical degree in 1990 from the University of Glasgow and was appointed Professor of Metabolic Medicine in 2005. He has expertise in biomarkers and epidemiology, and has published over 240 original papers, many of relevance to cardiovascular disease (CVD) and diabetes pathways, treatments and outcomes. He has received a number of national awards for CVD and diabetes research, including the John French Lecture in 2006, and will give the Dorothy Hodgkin Lecture at Diabetes UK in 2011 for his work on diabetes biomarkers. He was chair of the Diabetes UK 2010 conference committee, contributes to British Heart Foundation and Scottish research committees and chaired the treatment subgroup of the 2010 Scottish Intercollegiate Guidelines Network obesity guideline. He is also an associate editor for *Diabetologia*. Finally, but perhaps most importantly, his passions outside work include his two young children (Zara 7 and Zakee 9) and playing football wherever the opportunity arises.

## Professor Iain Squire

Professor Iain Squire qualified from Glasgow University in 1987. He trained first at Glasgow, where he held the position of Lecturer, and then at the University of Leicester, where he was initially Lecturer then Senior Lecturer in Medicine & Therapeutics. He was awarded a personal Chair in April 2009, and is also Honorary Consultant Physician at the University Hospitals of Leicester NHS Trust.

Professor Squire has responsibility for the 19-bed coronary care unit at Glenfield Hospital, Leicester, and is one of two consultants running the outpatient heart failure service there. He also has responsibility for the Leicestershire Heart Failure Service. He is a member of the National Institute for Health and Clinical Excellence Technology Appraisals Committee.

Professor Squire was a Councillor to the British Society for Heart Failure from 2001 to 2003, and is currently Treasurer of the Society. He is UK coordinator for the joint European Society of Cardiology/European Heart Rhythm Association CRT Registry, a position he has held since 2007.

His research interests include: natriuretic peptides and other cardiac neuropeptides; the epidemiology of heart failure; prognostic markers in heart failure and acute coronary syndromes; and acute coronary syndromes. Professor Squire has authored over 120 papers in peer-reviewed journals.

## Professor Allan Struthers

Allan Struthers is Professor of Cardiovascular Medicine at the University of Dundee. He is currently funded as Principal Investigator (PI) by the British Heart Foundation (BHF), the Medical Research Council, the Chief Scientist Office, Diabetes (UK) and the Chest, Heart & Stroke Association. In total he has had 30 different BHF grants, including two 5-year BHF awards (one as PI).

He contributes strongly not only to the local NHS but also to the wider NHS. He runs the Heart Failure Service for Ninewells Hospital in Dundee. He was Chairman of the recent Scottish Intercollegiate Guidelines Network Guidelines (2007) for Heart Failure and is Chairman of the group developing the Heart Failure Standards for all Scottish hospitals (NHS-QIS/NHS Quality Improvement Scotland). He is also Chairman of the National Scientific Advisory Committee of Tenovus and is Senior Regional Advisor for the Scottish Advisory Committee for Distinction Awards. He has served on seven other research grant committees, including the BHF Chairs & Programme Grant Committees, and has been a member of two BHF site visit teams. He was also a member of the Cardiovascular Expert Advisory Committee of the UK Medicines Commission. He was Head of the University Division of Medicine & Therapeutics from 2002–2008. He has given 190 invited lectures (half abroad), published 420 papers and supervised 44 MD/PhDs. His publications include six *Lancet* and seven *Circulation* papers. His current *h*-factor is high at 46.

His research is mostly clinical research in the cardiovascular area. One longstanding focus of interest has been B-type natriuretic peptide (BNP). He wrote one of the first two original papers published together in the *Lancet*, which described the use of BNP to identify heart failure. More recently, his group has shown that BNP can identify silent myocardial ischaemia, which opens up the possibility of using BNP screening to identify those individuals whose first ever manifestation of their heart disease is sudden unexpected death. This tantalising possibility is being investigated with a 5-year BHF special grant (the 5P study).

He also pioneered the use of spironolactone in heart failure. He was the first to show its cardiac benefits in man in 1995. This led to the 1999 RALES study where it reduced cardiac death, for which it is now in widespread use.

His other main focus is in allopurinol where he has shown that allopurinol improves endothelial function by profoundly reducing vascular oxidative stress and, more recently, that it prolongs exercise in angina by preventing “oxygen wastage”.

Another related focus is in using cardiac magnetic resonance imaging to examine novel ways to regress left ventricular hypertrophy. His group has shown that reducing blood pressure does this even when baseline blood pressure is normal, and is currently investigating other approaches to achieve this such as allopurinol and vitamin D.

He is also working with Professor McMurdo to find novel ways of reducing disability in the elderly. They have already shown that angiotensin-converting enzyme inhibitors can achieve this and are exploring other novel approaches such as spironolactone.

### **Dr Robin Weir**

Specialist registrar currently in final year of training, subspecialising in heart failure and imaging, in the West of Scotland. Research interests include post-myocardial infarction (MI) heart failure and left ventricular dysfunction, and the use of novel and established cardiac biomarkers in the risk stratification of survivors of acute MI. Currently based in the National Advanced Heart Failure Unit at the Golden Jubilee National Hospital, Glasgow.

### **Dr Simon Williams**

Dr Simon Williams is a Consultant Cardiologist at Wythenshawe Hospital, South Manchester, where he is the clinical lead for heart failure. He specialises in cardiac transplant and ventricular assist device assessment, and also in pacing therapy for heart failure. Dr Williams is also an honorary senior lecturer at the University of Manchester, where his research group is currently studying the immune system in heart failure and following cardiac transplantation.

### **Dr Klaus Witte**

Klaus Witte is a Senior Lecturer and Honorary Consultant Cardiologist at the University of Leeds and Leeds General Infirmary. He trained in medicine at Kings' College Hospital, London, and subsequently in cardiology at Cardiff, Hull and Leeds. He is a founder member of the British Society for Heart Failure, and a member of the European Heart Rhythm Association. His research interests include exercise physiology, micronutrient therapy for chronic disease and device therapy for heart failure.

### **Dr Simon Woldman**

Dr Simon Woldman trained in the West of Scotland and at Aberdeen. He was appointed Consultant Cardiologist at the Ayr Hospital in 2001 and co-wrote a grant application to the Scottish Executive to start up a community heart failure service. He took up a post at the Heart Hospital in London in 2006 and is the clinical lead for heart failure and chairman of the North Central London Heart Failure Task Group. Dr Woldman is also an expert in nuclear cardiology and is immediate Past President of the British Nuclear Cardiology Society.

### **Dr Donah Zachariah**

I am a year 3 Specialist Registrar in Wessex Deanery, currently working at Portsmouth Hospitals NHS Trust. My areas of special interest are heart failure and devices.



# **Exhibitors and Contributors**

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## BRITISH HEART FOUNDATION (BHF)

### Our Vision

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- **Providing vital information to help people reduce their own risk of dying prematurely from a heart or circulatory related illness**  
We produce publications, videos and other materials for health professionals and the public including children. We inform people about how to improve the health of their heart through public information campaigns, advertising and the media.

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- There are over **500** BHF healthcare professionals caring for patients across the UK.
- Over **2,000** Heartstart UK schemes teach people what to do in an emergency. More than **2.2 million** people have been trained by Heartstart UK in schools and the community.
- Last year BHF invested over **£90 million** in research to keep the nation's hearts healthy.

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## BRITISH SOCIETY FOR HEART FAILURE (BSH)

The BSH is a multi-disciplinary society and membership is open to all healthcare professionals involved with the diagnosis, management or science of heart failure.

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 over 700 members and nine Friends. The BSH Board consists of the following members: Dr Theresa McDonagh (Chair), Professor Martin R Cowie (Past Chair), Dr Andrew Clark (Deputy Chair), Dr Suzanna Hardman (Chair-Elect), Professor Iain Squire (Treasurer), Mrs Jane Butler, Dr Paul Kalra and Mrs Annie MacCallum. The Observers to the Board are as follows: Dr John Baxter, Dr Derek Connelly, Mrs Bernie Downey, Dr Ahmet Fuat and Dr Jim Moore.

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## NATIONAL COUNCIL FOR PALLIATIVE CARE (NCPC)

The National Council for Palliative Care (NCPC) is the umbrella organisation for all those who are involved in providing, commissioning and using palliative care and hospice services in England, Wales & Northern Ireland. NCPC promotes the extension and improvement of palliative care services for all people with life-threatening and life-limiting conditions. NCPC promotes palliative care in health and social care settings across all sectors to government, national and local policy makers.

### Contact information:

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## NHS IMPROVEMENT

NHS Improvement is working in partnership with organisations such as cardiac networks, primary, secondary and tertiary care, commissioners and providers, and social care across England to work using a variety of approaches in order to improve heart failure care. The work covers aspects such as improving screening and access to heart failure services right through to end of life care.

The local teams have been set up to deliver the aims of their individual projects and have peer support meetings and site visits on-going. The underpinning mechanism to demonstrate improvement is through the bespoke NHS Improvement system. This can log progress, collect and analyse data and disseminate useful resources.

NHS Improvement is a national improvement programme, working with clinical networks and NHS organisations to transform, deliver and sustain improvements across the entire pathway of care in cancer, cardiac, diagnostics and stroke services.

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## **PFIZER LTD**

Pfizer Inc., founded in 1849, is dedicated to better health and greater access to healthcare for people and their valued animals. Every day, colleagues in more than 150 countries work to discover, develop, manufacture and deliver quality, clinically effective prescription medicines to patients.

In the UK, Pfizer has its European R&D headquarters at Sandwich and its UK business headquarters in Surrey, and is the major supplier of medicines to the NHS. Pfizer invested over £5.4 billion worldwide (£104 million per week) in R&D in 2008.

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## **PHILIPS HEALTHCARE**

Motiva – helping patients with long-term conditions.

Philips Motiva is an interactive healthcare platform that connects patients with chronic conditions, e.g. heart failure, diabetes and COPD, to their healthcare providers – via the home television and a broadband internet connection.

Motiva automates disease management activities, and engages patients with personalised daily interactions and education delivered through the home television. The system enables healthcare providers to motivate behaviour change through user-friendly technology, helping them meet goals for improved patient compliance, telehealth program efficiency and lower healthcare costs.

In addition to automated vital signs monitoring, patients are supported by:

- educational material delivered as videos, with topics relevant to their individual healthcare needs
- actionable feedback about vital signs measurements to help patients track progress toward personal goals
- motivational messages from caregivers to help encourage healthy lifestyle choices for diet and exercise
- health-related surveys that evaluate patients' comprehension, motivation and self-efficacy levels; and provide subjective information to the remote caregiver about their current health status.

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## **RESMED (UK) LTD**

ResMed (UK) Ltd is a leading provider of cutting-edge technology for the identification and management of respiratory insufficiency and sleep disordered breathing in different patient populations. We have now reached the half-way stage in recruiting over 1200 patients to SERVE-HF: our multi-centre international study of the use of adaptive servo-ventilation for the treatment of heart failure and how screening techniques can be applied to your patient population.

### **Contact information:**

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## **ROCHE DIAGNOSTICS LTD**

Roche is one of the world's leading research-focused healthcare groups in the fields of pharmaceuticals and diagnostics. As the world's biggest biotech company and an innovator of products and services for the early detection, prevention, diagnosis and treatment of diseases, the Group contributes on a broad range of fronts to improving people's health and quality of life.

In April 2007, Roche launched our first portable cardiac reader, the Cobas h232, designed for use in hospital and by GPs. It has a broad menu of tests including NT-proBNP for heart failure, TroponinT for Myocardial Infarction and D Dimer for DVTs and PEs. Results are given on the spot (approx 10 min), delivering accuracy comparable to a laboratory and enabling swift diagnosis, treatment and cost savings to the healthcare systems.

### **Contact information:**

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## SERVIER LABORATORIES LTD

Servier is an independent research foundation, which invests 25% of its turnover in research and development.

- Servier Laboratories is the UK subsidiary of The Servier Research Group, the leading independent French research based pharmaceutical company established in 1954 by Dr Jacques Servier.
- Created in 1963 with only two people, the UK subsidiary was the first subsidiary outside France.
- In just over fifty years, The Servier Research Group has developed in stature from a small family-owned, provincial pharmacy employing nine people to a multinational operation with over 200,000 employees worldwide.
- Established in 140 countries, The Servier Research Group has annual sales worldwide of over 3 billion euros.
- The key franchises of The Servier Research Group are:
  - Cardiovascular disease
  - Diabetes
  - Rheumatology
  - Central nervous system
  - Oncology.
- As much as 25% of Servier's turnover is reinvested in Research and Development.
- The pharmaceutical industry invests over £3 bn a year in UK research, more than any other industry as a % of sales (ABPI website – [www.abpi.org.uk](http://www.abpi.org.uk)).

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## TAKEDA UK LTD

Takeda UK Ltd is the UK and Ireland subsidiary of Japan's largest pharmaceutical company, a research-based global enterprise with global net sales of \$13 billion (2008), employing more than 15,700 people in more than 90 countries.

Takeda UK & Ireland's current 2010/2011 portfolio of products addresses some of the largest areas of patient need, which are strategic priorities for the NHS: type 2 diabetes; cardiovascular disease and cancer. Takeda UK & Ireland markets two important oral diabetes therapies, the UK's most widely prescribed ARB for the treatment of hypertension and heart failure and the world's most widely prescribed luteinising hormone-releasing hormone analogue (LHRHa), which is used mainly for treating prostate cancer. Takeda's oncology portfolio also includes the first treatment approved for osteosarcoma in more than 20 years.

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## THORATEC EUROPE LTD

Thoratec® Corporation innovates and delivers technologies that enable a full range of therapies to save, support and restore failing hearts, allowing patients to reclaim their lives. With over 12,000 patient implants and three decades of experience, Thoratec offers the broadest portfolio of ventricular assist devices. Thoratec's product line includes the HeartMate® LVAS, Thoratec PVADT and IVADT, and the HeartMate II® LVAD.

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## VIFOR PHARMA UK LTD

Vifor Pharma is the world's leading company in the treatment of patients with iron deficiency anaemia. From original scientific research through to clinical trials, the company has developed iron-based medicines for more than 50 years. Both Venofer® and Ferinject® are intravenous iron preparations that Vifor has brought to the UK and to physicians across Europe. In 2010, Vifor established operations in the UK and is committed to supporting healthcare professionals in all aspects of iron deficiency management.

Website: [www.viforpharma.com](http://www.viforpharma.com)

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## WISEPRESS MEDICAL BOOKSHOP

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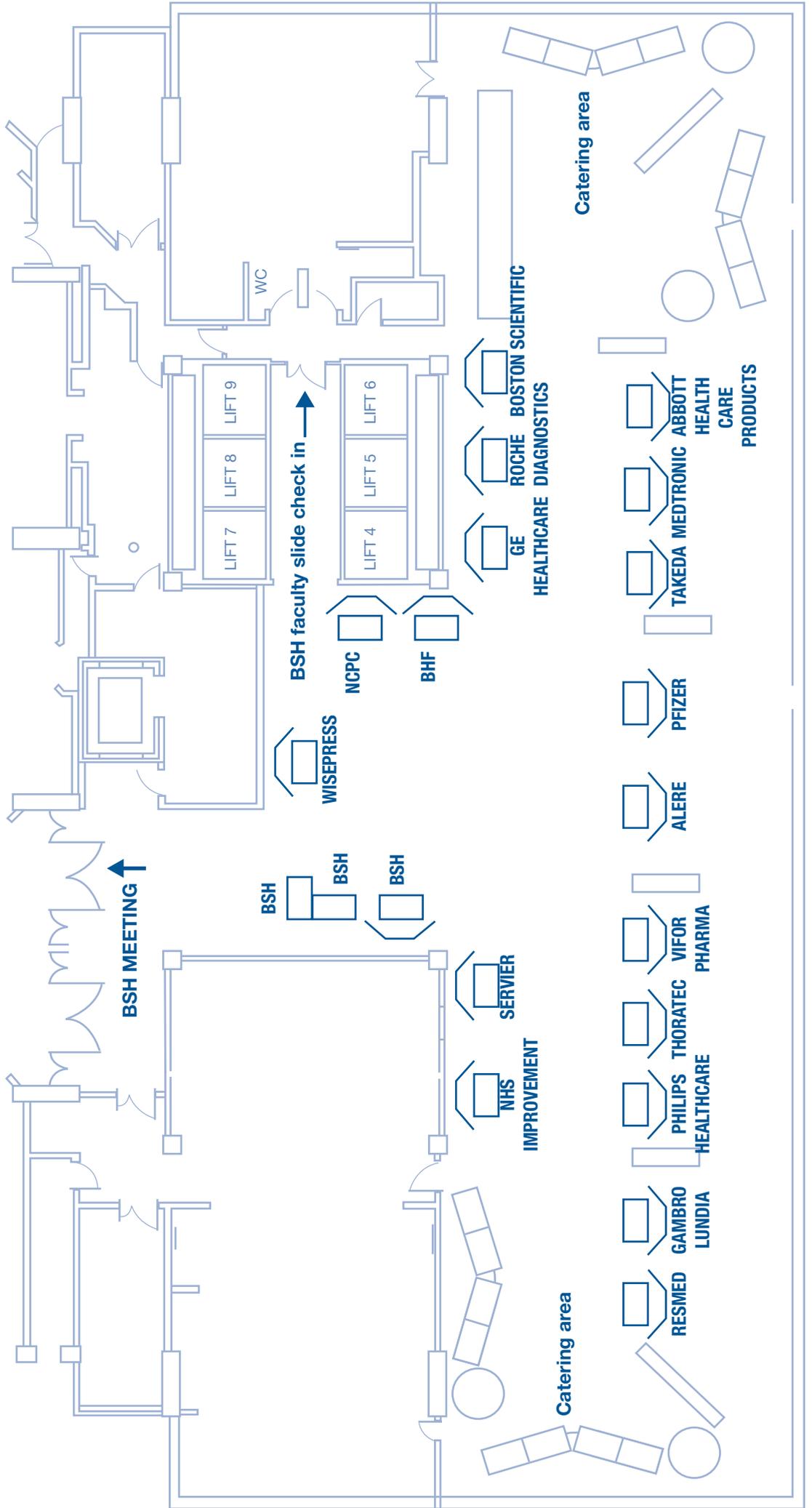
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Queen Elizabeth II Conference Centre, London  
Benjamin Britten Lounge

13th BSH Annual Autumn Meeting, 25–26 November 2010  
Exhibition Plan





## Empowering healthcare with rapid diagnostics

Alere technologies enable healthcare providers to perform rapid diagnostic testing in the hospital, clinic, workplace community, or the home.

By improving access to diagnostic testing we are enabling the NHS to adopt more cost-effective and patient-centred care pathways. Our rapid tests provide on-the-spot results that support immediate treatment decisions, improve outcomes, and enhance the patient experience.

Unnecessary referrals and acute admissions are reduced and moving care from hospitals to the community helps to meet the QIPP challenge of providing better services more effectively.



BNP, NT-pro BNP, and now.....

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**'The Alere™ Heart Check gives clinicians the ability to extend the reach of traditional diagnostic testing, from the acute setting into primary care and even the patients home.'**

Uniquely combining a fingerstick B-type Natriuretic Peptide (BNP) test along with an integral remote connectivity solution, the Alere Heart Check gives clinicians the ability to extend the reach of traditional diagnostic testing from the acute setting into primary care and even the patients home.

Alere Heart Check complements our existing point of care portfolio that already boasts Triage® NT-pro BNP alongside the well established Triage BNP test, offering clinicians choice and consistency with local protocols on one, multi parameter platform.

We expect a finger-stick based BNP device to make an early impact in the professional setting, where BNP's role in both the evaluation and monitoring of heart failure is becoming increasingly recognised. However, over time we anticipate the use of this device to migrate to the home, in a similar way that INR monitoring can now be safely done by the patient themselves.

Alere Ltd are proud to be Gold Exhibitors and Friends of the BSH.

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