



Review of Specialist Heart Failure Nurse Services

Scotland 2018

The SHFNF is an independent organisation

Review of Specialist Heart Failure Nurse Services Scotland 2018

The Scottish Heart Failure Nurse Forum (SHFNF) was launched in 2005 as an independent, national organisation supporting registered nurses working in the specialist management of patients with heart failure. The membership of the forum is representative of all areas within Scotland and primarily focuses on specialist education in the form of an annual national conference, sharing of quality improvement practice, networking as well as service and educational development. Recent forum developments have included the expanded membership options to include Allied Health professionals (AHP'S), Pharmacists and nurses who work with heart failure patients but are not specialists. The forum works in strong collaboration with the Scottish Heart Failure Hub. From a strategic perspective, the SHFNF holds membership of the Heart Disease Cross Party Working Group (Scottish Parliament) and the Scottish Governments National Advisory Committee for Heart Disease (NACHD).



The 2018 Review is authored by: Jill Nicholls, RN, BSc, & Janet Reid (Current Chair) RGN, BN, MSc, with support from the SHFNF committee.

Acknowledgement to contributing authors- Mrs Maggie Simpson, Mr Neil McInnes, Dr Alan Robertson, Dr Alan Japp & Dr Mark Petrie & Dr Clare Murphy

Email: janet.reid@nhslothian.scot.nhs.uk, Jill.nicholls@nhs.net

Website: www.shfnf.co.uk

This report is dedicated to the late Lynda Blue who was a source of personal and professional inspiration, and a leader of research and education for the heart failure nurses in Scotland.

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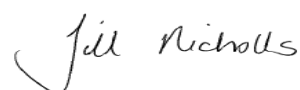
Foreword by Jill Nicholls Chair of the SHFNF 2014-2018 on behalf of our forum members

As outgoing Chair of the SHFNF, I am delighted to share this review of Specialist Heart Failure Nurse Services across Scotland. I would like to take this opportunity to personally acknowledge the challenging workload of our members that is undertaken, often in unseen settings such as patient's homes. This enables individualised patient centred care, close to their local environment to ensure that each patient has a plan of care that is safe, effective and promotes improved quality of life. This goal is the key driver for robust specialist nursing contributions, not only with support for self management but also the crucial task of complex medication adjustments, recognition of the need for advanced therapies and realistic intervention when unexpected deterioration occurs. Following on from previous publications, the primary focus of this report remains on the specialist nursing services and the demonstrable effects of collaborative working with multi-disciplinary colleagues.

The key achievements since the 2013 report are:-

- Increased utilisation of novel approaches in service delivery such as virtual review, text based services, and an increasing use of technology.
- A shift towards a Multi Disciplinary Team (MDT) supported service including pharmacists, cardiac rehabilitation and palliative care.
- The development and implementation of tiered levels of care which are responsive to changing patient's needs.
- Active collaboration with the Scottish Heart Failure Hub to address identified areas of unmet areas of need including robust implementation of psychological assessment and palliative care planning.

Our current challenges lie between meeting the demands of an aging population whilst within NHS Scotland's current financial pressures, therefore it is crucial to support evolving service models to maximise clinical outputs. This report gives the SHFNF the opportunity to highlight the bespoke models of care developed across Scotland to meet local service needs. The current review of Scottish Heart Failure Nurse Services offers strategic groups such as the Scottish Heart Failure Hub, NACHD and the Scottish Parliamentary Cross Party Working Group valuable information to aid discussions, decisions and future planning of both specialist services and their education needs. It is essential to protect the role of specialist services in delivering the realistic and achievable recommendations by the Chief Medical Officers report Realistic Medicine 2017, mainly that of the person living with this condition being central to care planning, intervention and review.



The value of the SHFNF - Dr Clare Murphy Consultant Cardiologist and Lead Clinician for the Scottish Heart Failure Hub

The Scottish Heart Failure Nurse Forum is integral to delivering and driving forward the care of people in Scotland who are living with heart failure in addition to supporting their carers. We know that the prevalence of heart failure is rising due to improvements in survival from other forms of heart disease and an ageing population. The 2019 Scottish Heart Disease statistics (ISD 2019) show that in contrast to a reduction in the number of patients per 100,000 population discharged from hospital with a diagnosis of heart attack or angina between 2014-2018, the number of patients discharged with a diagnosis of heart failure continues to rise. Heart Failure is responsible for 5% of unscheduled hospital admissions and is associated with long lengths of hospital stay (12 days on average), high readmission rates (approximately 17% at 30 days and 67% at 1 year) and high mortality rates (approximately 14% at 30 days and 35% at 1 year). Heart Failure is therefore a key priority in the Scottish Government Heart Disease Improvement Plan (Scottish Government 2014). The SHFNF, working in collaboration with the Scottish Heart Failure Hub and the National Advisory Committee for Heart Disease, plays a central role in delivering this strategic plan.

“everyone should have a heart failure nurse, even those who don’t have heart failure”
(quote from a patient attending a recent Scottish Heart Failure conference).

This quote powerfully highlights the value of our heart failure nurses in Scotland. Their expertise, motivation to maintain their skills and knowledge, passion for delivering high quality evidence-based patient-centred care, vision for improvement and genuine compassion for the patients and carers within their service, enables Scotland to continually deliver world class heart failure care.

On behalf of the Scottish Heart Failure Hub, I would like to say a very sincere “thank you” to the SHFNF and the authors of this report for undertaking a robust review of Scottish Heart Failure services and to the entire Scottish heart failure nurse community for the high levels of care, enthusiasm and commitment they unwaveringly demonstrate despite the challenges they often encounter. The information contained within this report highlights the hard work and improvement that has been achieved in Scotland between 2013 - 2018 but also serves to provide crucial information that will enable planning for future heart failure service quality improvement, in a sustainable manner and with national parity.



Review of Services 2018 report aims:-

- To identify the current heart failure nurse service resources and demands across Scotland, to support future service development.
- To clarify the role of the heart failure nurse in delivering advance practice in order to develop core services within an advanced practice framework.
- To report the impact of recent quality improvement projects undertaken through collaboration with the heart failure hub.
- To identify current barriers and challenges to provide equitable heart failure nurse care across Scotland.

“The heart failure nurse provides a much welcomed service, with care and support at every stage throughout my struggles with this horrific condition”

Patient quote

Heart Failure

Heart Failure is a complex clinical syndrome that can result from any structural or functional cardiac or non-cardiac disorder that impairs the ability of the heart to respond to physiological demands for increased cardiac output. The terms used to describe different types of heart failure can be confusing (European Society of Cardiology 2012)

HEART FAILURE WITH REDUCED EJECTION FRACTION (HFpEF):

Impairment and abnormality within the main pumping chamber of the heart (left ventricle) - also known as Left Ventricular Systolic Dysfunction (LVSD)

HEART FAILURE WITH PRESERVED EJECTION FRACTION (HFpEF):

Impairment of the pumping of the heart, with no obvious abnormality of the main pumping chamber (left ventricle)

Heart failure care and the role of the specialist nursing nurse

Heart failure is a complex syndrome and its management is underpinned by numerous medical therapies. It causes or complicates 5% of all emergency hospital admissions for adults in England, Wales and Northern Ireland (National Institute of Cardiovascular Outcomes Research, NICOR 2017). In addition heart failure is often associated with marked reductions in quality of life; it can have high levels of debility, mortality and morbidity (NICOR 2017). The heart failure patient may also have complex cardiac disease such as coronary artery disease, congenital heart disease or arrhythmias. The natural history of heart failure includes periods of relative stability and periods of worsening of the symptoms and signs of heart failure, requiring hospitalisation and adjustment of treatment. The care of heart failure patients is therefore complex and challenging (Scottish Intercollegiate Guideline Network 147, SIGN, 2016)

The heart failure specialist nurse plays a key role in the delivery of physical and psychological therapies. This includes assessment and diagnosis of heart failure, the introduction and optimisation of evidenced based medical therapy, psychological assessment and escalation of consideration for advanced therapies i.e. pacemakers, valvular assessment, assessment for suitability of cardiac transplantation and mechanical circulatory support. Heart Failure specialist nurses are able to admit patients directly to hospital and order significant investigations. The HF patient at some point in their journey may require palliative and supportive care, particularly near the end of life and the heart failure nurse is fundamental in recognising the deteriorating patient and providing realistic support solutions. The management of heart failure requires the specialist nurse to understand and recognise the complex issues these patients and their family face and deliver appropriate care by means of a person-centred approach.

As the population ages, optimal care for older adults with heart failure requires the heart failure nurse to be knowledgeable in age-related physiologic changes, complex multi-organ and multi-dimensional syndromes (Pirmohamed et al, 2016). The appropriate treatment of heart failure patients with reduced ejection fraction (HFrEF) in the current era is challenging. Further to this, the complexity of managing heart failure patients with preserved ejection fraction (HFpEF) will present an additional challenge (Packer 2018). This is in part because the profile of the HFpEF patient is typically older with co-morbid conditions such as hypertension, diabetes mellitus, obesity and atrial fibrillation (Pirmohamed, et al 2016). The management of co-morbidities is a key component in the holistic care of patients with heart failure and a role which is often undertaken by the heart failure nurse. This is to ensure the safety and efficacy of particular effects of medications and treatments in the heart failure population, determining whether they are beneficial or detrimental for each patient (European Society Committee, ESC, 2016).

Medical therapy for heart failure has a robust evidence base and its implementation is supported by national guidelines (SIGN 147 2016 & National Institute of Clinical

Effectiveness, NICE, 2017). The anticipated outcome for the patient established on current evidence based therapies is a reduction in mortality and morbidity, but it has become an increasingly complex condition. Although the utilisation of multiple drugs often represents the preferred care strategy in the treatment of heart failure, this may simultaneously increase the risk of drug interactions, adverse effects and lead to inappropriate drug prescribing. Conversely the underuse of effective treatment may lead to worsening heart failure and reduced quality of life. The heart failure nurse has to recognise the consequences and effects on adherence to pharmacological therapies (Mastromarino et al, 2014). Furthermore, given that many patients have multi-morbidity the complexity of poly-pharmacy for heart failure patients is often underestimated (Mastromarino et al, 2014). This leads to the adoption of a complex therapeutic regimen which the heart failure nurse has to coordinate in partnership with the MDT and the patient. This requires the heart failure nurse to provide structured self-management advice and support to patients in order for them to understand their condition and the rationale for treatment and self-reporting of symptoms.

To support and manage the multifaceted needs of this group of patients, the heart failure nurse requires an advanced skill set and experience. The challenge for heart failure nurses now and in the future is to care for and manage these complex patients. The heart failure nurse is in a key position to drive forward the recommendations by the Chief Medical Officer 'Practising Realistic medicine' (Scottish Government 2018) for this patient group. Using this approach heart failure nurses in Scotland will ensure appropriate treatments and interventions through meaningful conversations with the patient and guidance to primary care in order to deliver the best care possible.

"I feel that my heart failure nurse does a good job of keeping me alive....and explains upcoming changes to my treatment to remove the fear factor"

Patient quote

Future clinical challenges:

Heart failure and congenital heart disease

Congenital heart disease (CHD) is the most common birth defect affecting almost 1% of live births (Krasuskie et al, 2017). Due to advances in antenatal diagnosis and paediatric management there are now more adults living with CHD than children (Warnes, 2017). This poses unique challenges to healthcare systems providing care to adults with CHD and to the patients themselves as surgical repairs in childhood are not curative and are instead described as palliative leading to long term complications including heart failure. From epidemiological data, it is estimated that there are around 22,500 patients with CHD in Scotland. At present there is no published data relating to HF incidence, admissions or deaths in Scotland in adults with CHD. However, studies that are relevant to our population have been published and demonstrate that Heart Failure is the leading cause of death related to CHD across simple, moderate and complex heart defects (Zomer et al, 2012; Baissadeti et al. 2016).

While we cannot provide specific numbers on the incidence of HF in the adult CHD population in Scotland at present, nor the number of patients who will require specialist HF nurse input, what can be said is that this number will continue to rise (Gilboa et al, 2016; Tutarel et al, 2014). Currently there are patients who cannot access the HF expertise that is invaluable in helping them to manage their condition, improve their quality of life and reduce hospital admissions. While the reasons for this are multifactorial they are not justification to withhold this expert care from patients. The core principles for heart failure management of providing education, supporting self-care, optimisation of medical therapy and recognition of deterioration are broadly applicable to CHD patients and with a collaborative approach care can be individualised (Budts et al, 2016; Stout et al, 2018). The challenges facing both the Scottish Adult Congenital Cardiac Service and heart failure nurse services will be how we work together to improve access to heart failure specialists in a way that supports not only the patient but the healthcare professional providing this care.

Heart Failure with preserved ejection fraction-

Around 50% of patients with heart failure have HFpEF. These patients have severe symptoms, long admissions and high mortality rates (Redfield 2017). HFpEF remains an area of controversy and uncertainty even among heart failure specialists. This reflects both an incomplete understanding of the underlying pathophysiologic mechanisms and a lack of effective disease-modifying therapies. There are a number of specific cardiac pathologies that are well recognised to cause the clinical syndrome of HFpEF, including pericardial constriction, infiltrative myocardial disease, hypertrophic cardiomyopathy and valvular disease. However these account for only a small fraction of HFpEF cases. Patients with HFpEF have much comorbidity. These include anaemia, arthritis, lung disease, renal failure,

previous strokes and diabetes (Campbell et al 2012). Patients are often elderly and can sometimes have cognitive impairment.

Patients with HFpEF stand to gain from HF specialist nurse care as they have needs especially suited to the skills of these professionals. The complex medical and social needs require time and resources that cardiologists cannot offer in day-to-day outpatient clinics. Heart failure specialist nurses are increasingly being asked to manage patients with HFpEF on top of their established list of patients with HFrEF as we have seen with 4 boards reporting management of this patient group in their data tables below.

There is also a group of patients in a grey-zone between HFrEF and HFpEF with ejection fractions in an intermediate range eg between 40-50% as reported by Campbell et al 2018. These patients respond to medical therapies in a very similar manner (with the same benefits in terms of reduction in admissions, improved quality of life and longer lives) as those with HFrEF (Campbell et al 2018). These patients are also best placed within heart failure teams with specialist nurses working alongside cardiologists. The demand on heart failure nursing services of taking on these groups of patients will stretch already creaking services.

Heart failure due to valvular disease-

Valvular heart disease is when there is damage to one of the four heart valves: the mitral, aortic, tricuspid or pulmonary. The severity of valvular heart disease can vary. In mild cases there may be no symptoms, while in advanced cases, valvular heart disease may lead to congestive heart failure (John Hopkins Medicine 2019). For the population over 65 years the prevalence of asymptomatic heart valve disease may be more than 50%, while the prevalence of clinically significant heart valve disease is around 11%. It is estimated that for people over the age of 65, the prevalence of heart valve disease will increase from 1.5 million people currently, to double that in 2046. (NICE 2019). For example aortic valve disease in the elderly is primarily the result of calcific disease due to the ageing process and some patients may require surgical intervention whilst some may be medically managed. Additionally Philbin et al (1999) found that amongst patients admitted with heart failure that there was a high prevalence of 21% with valve disease. Marciniak et al (2017) also found in the community that of patients with suspected heart failure that a significant proportion had important valvular disease. If valvular heart failure is on the increase and many patients display symptoms of heart failure such as dyspnoea and fluid retention then there may be scope for heart failure nurse support and monitor these patients ensuring they have the same level of care as HFrEF patients.

Specialist Heart Failure Nurse Education

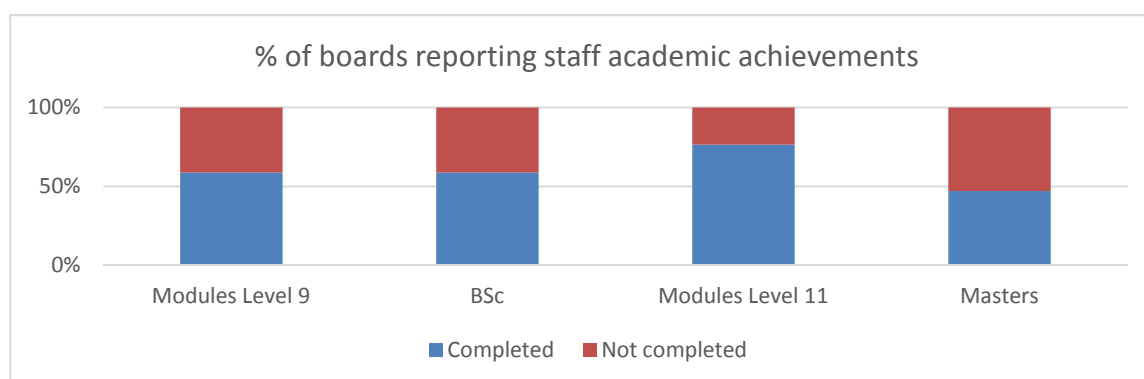
As highlighted previously, heart failure is a syndrome of great complexity and often combined with significant co-morbidity. Heart failure specialist nurses provide both acute inpatient and long-term outpatient care for patients with Heart failure thereby reducing readmissions and improving patient outcomes (Price 2012). Therefore heart failure specialist nurses require a skill-set beyond what the foundation of education and training in nursing provides in order to deliver this level of care at advanced practice (Riley et al, 2016).

The Royal College of Nursing (2018) Standards for Advanced Practice highlight four key standards nurses should meet to practice at this level:

- Advanced clinical practice
- Leadership
- Education & Learning
- Research and development.

Application of these four areas provide the foundation for autonomous practice and equips the nurse to act as a key contributor in a multi-disciplinary team, think critically, reflect on practice, make informed decisions on appropriate interventions, take responsibility for their actions and treat patients holistically. Therefore, expertise in the management on cardiovascular disease and specifically heart failure along with an advanced level of education and training are key to the role of the heart failure specialist nurse.

The RCN (2018) highlight that the level of education achieved for advanced nursing practice should be Masters Level (Level 11). In this report, we can see that almost 75% of heart failure services have supported staff to undertake education to this level.

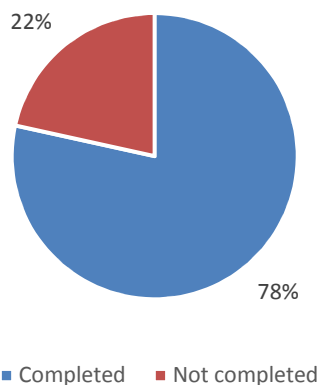


***Please note this graph represents boards reporting staff academic achievements, not % of staff**

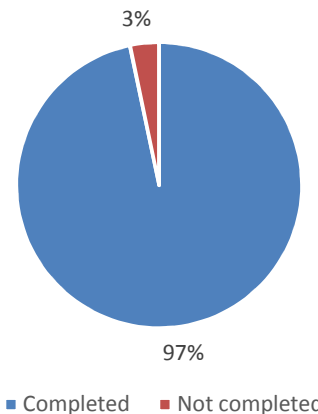
This training includes specialist Heart failure courses, palliative care training, clinical assessment, advanced communication and non-medical prescribing modules. Non-medical prescribers account for 78.5% of the specialist HF workforce in 2018 demonstrating a

significant improvement from the 42% reported in 2013. The SHFNF are pleased to note this high educational attainment aligns with the advanced nursing practice framework (NHS Education for Scotland 2018). However 48% of staff have not received palliative care training which we hope will improve with the Heart Failure Hub plans.

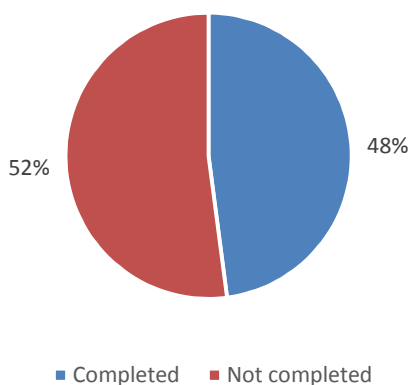
Non-medical prescribing



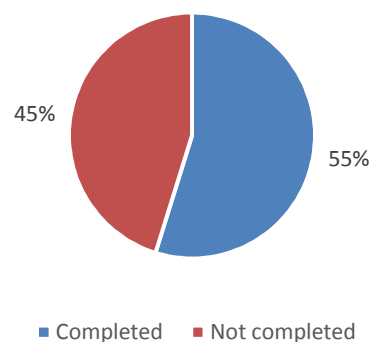
Heart Failure Module



Palliative Care training



Advanced Communication skills



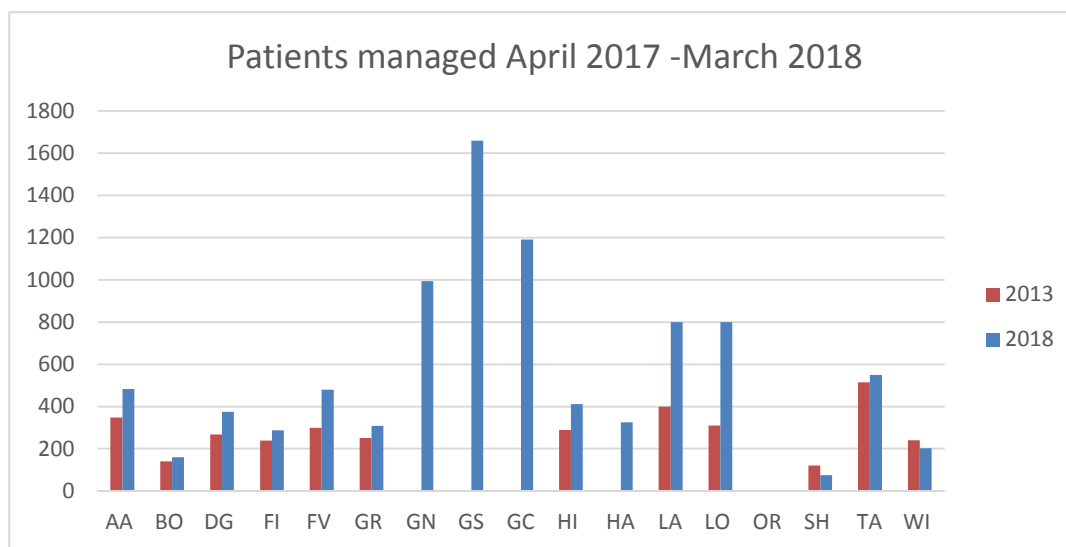
While core formal academic education is essential, ongoing continuous professional development i.e. attending conferences and meetings to maintain knowledge and skills in contemporary practice is vital. Boards need to ensure provision of study leave to ensure that staff are supported in their ongoing development and maintaining competence. We are aware of challenges within boards to allocate staff study leave for non-mandatory training. However attending heart failure meetings and conferences ensures Heart failure specialist nurses remain up to date with key research and innovations, whilst enabling safe implementation of evidence based changes into practice. Additionally it provides a forum for professional networking to share ideas and learn from best practice. The combination of academic education, conference attendance and networking allows Heart Failure specialist nurses to deliver a high standard of evidence based care enabling them to develop and

innovate within their practice. We would encourage boards to ensure that their heart failure nurse specialists have access and time allocated for continued education.

There is recognition of variability with role descriptions and clinical grading within teams across Scotland. As specialist nurses increase their knowledge and skills to provide autonomous practice and are educated to advanced practice level then this should be reflected in their agenda for change banding. The British Society of Heart Failure UK Nurse Forum is currently reviewing the educational pathway for heart failure nurses and boards need to ensure that as part of workforce and succession planning that there is a clear pathway of education, with concomitant remuneration within the agenda for change grading system. It is not appropriate to replace higher grade staff with lower grade staff as part of a cost efficiency strategy without evidence of why this structural change is necessary and why a change in role is required

Data report for Heart Failure Nurse Services in Scotland

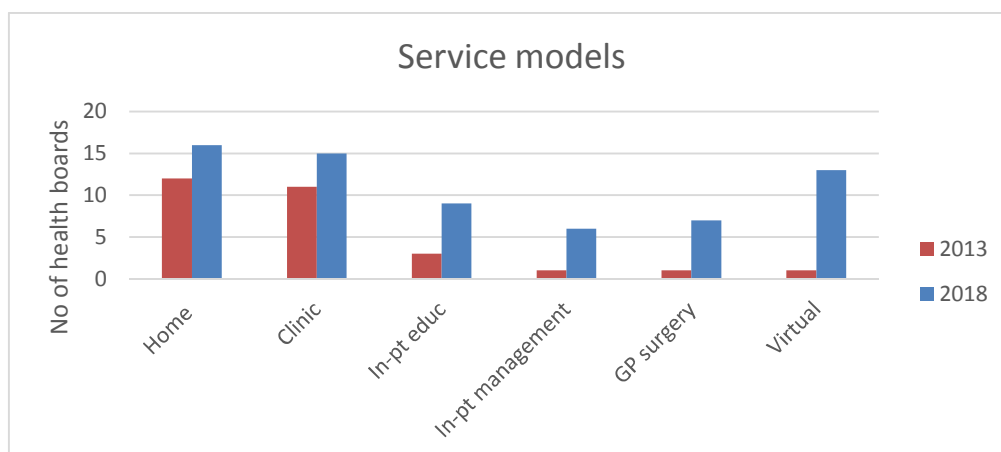
Figure 1: Patients enrolled in Heart Failure nurse services 2018



*Comparison for GGC/HA is not possible as the board has been split into 3 sections compared to the 2013 report

In comparison to 2013 nearly all health boards have seen an increase in the number of patients living with heart failure enrolled into a heart failure nurse service. The reason for this may be multi-factorial, due to the ageing population and improvement in diagnostic tests i.e. natriuretic peptide, resulting in earlier entry into services. In addition 4 boards provide heart failure nurse support for people with HFpEF and as there are now 9 hospitals with inpatient services, this may in part account for increasing patient numbers. It is important to recognise that with these increasing numbers that there must be concomitant increase in nursing support. The increasing number of people living with heart failure could make current care services vulnerable, potentially diluting the impact of the evidenced based care from heart failure nursing services.

Figure 2: Comparison of changing service models from 2013-2018



The SHFNF is pleased to report that services have demonstrated their flexible response to key drivers such as organisational change and increasing numbers of patients. These changes support the Scottish Government 2020 vision (Scottish Government 2011) of people living longer and healthier lives at home or within a homely setting. Figure 2 demonstrates the progression of the HF services in all health boards from 2013 when the service model was primarily a home based intervention, based on the original research paper by Blue et al (2001). In order to meet increased caseloads more flexible service models have been developed, such as virtual/telephone reviews as well as increasing clinic capacity. This is also because the increase in caseload over the last 5 years could not have been absorbed into a traditional home based service.

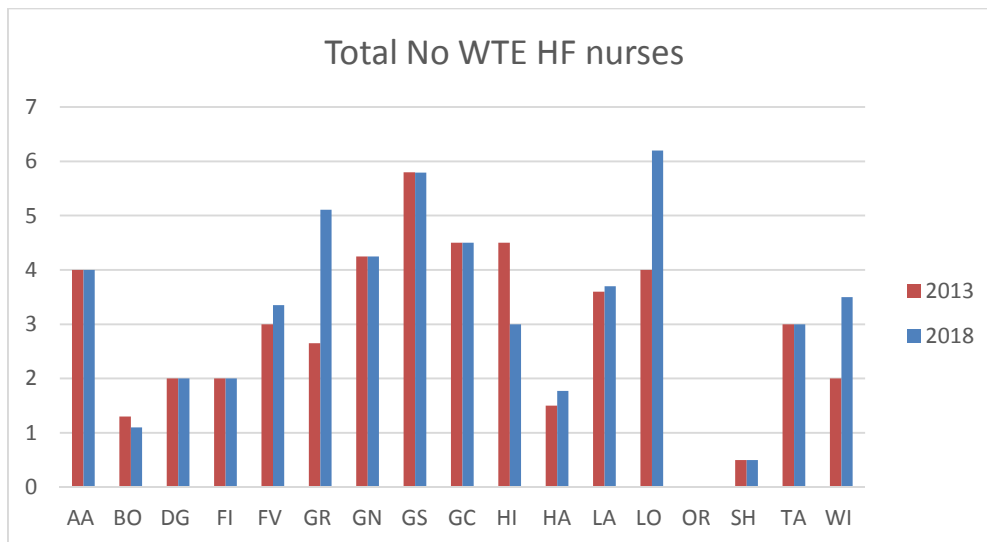
A number of boards report that they provide locality clinics close to people's homes to reduce travel time and provide a more localised setting. However, despite this there continues to be a corresponding increase in home visits, which leads us to believe that a large cohort of people with advanced disease and frailty continue to require this level of intervention.

We believe that the increased variety of care delivery options enables heart failure nurses to deliver an effective flexible service within their personnel constraints, whilst offering patients solutions that are person-centred. A varied care model of home visits/clinics/virtual reviews could lead teams to deliver efficiencies in caseload management. Whilst this evidence of service adaptation and development is positive, in order for teams to support the ageing population and the projected rise in heart failure innovative ways of delivering care will require long term vision and service investment. The SHFNF would welcome and support innovative ideas of care delivery and investment to ensure there is no dilution of future care and service provision.

We also are pleased to report that a number of boards have developed a range of nurse led inpatient care programmes. This development is evidenced by the rise from one board in 2013, delivering a dedicated inpatient heart failure service to nine in 2018. However each of these boards delivers varied models from the basic provision of education on heart failure and self management to a full inpatient management pathway. This is likely as a result of the National Heart Failure Audit 2016/17 (NICOR 2018) which demonstrated that mortality is lower in patients who have had specialist heart failure/cardiology input during an acute admission. They recommended that all patients admitted with heart failure should be reviewed by a heart failure specialist. This was supported by the recent National Confidential Enquiry into Patient Outcome & Death, (NCEPOD 2018) failure to function report. In addition evidenced based and standardised National and International guidelines and pathways have been developed to facilitate and improve acute inpatient heart failure care (NICE 2014). The SHFNF supports NICOR's recommendation and would encourage all boards in Scotland to develop full nurse led inpatient care management services in partnership with a MDT. Heart Failure nurse specialists are in the key position to deliver an

integrated care delivery model from hospital admission to outpatient care. Therefore in order for local teams to enhance their services and deliver this model of care appropriate resources must be allocated.

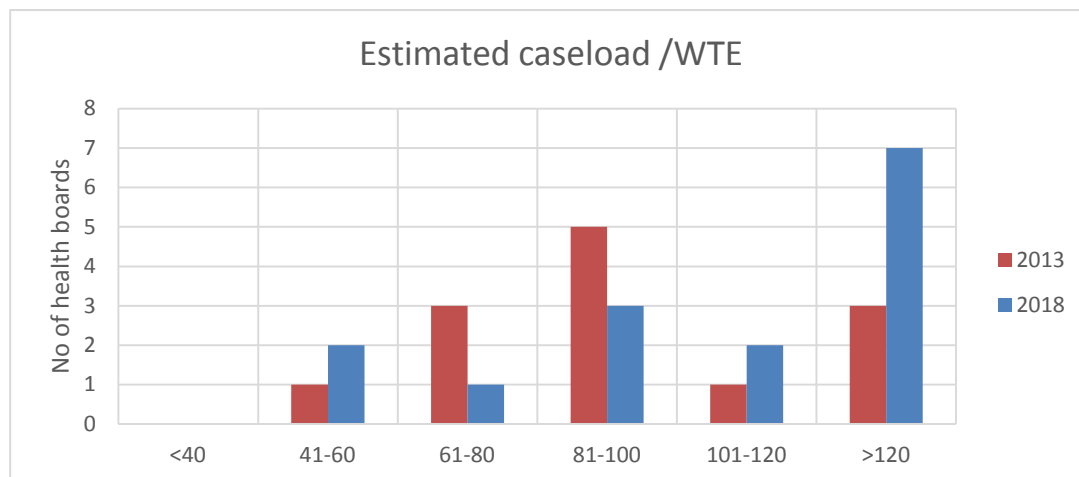
Figure 3: Heart Failure Nurse Provision in Scotland



The SHFNF is concerned that most boards demonstrated no real increase in the number of heart failure nurses despite increasing caseloads (with the exception of Lothian who have temporary staff as part of an inpatient pilot programme, Grampian who in 2008 were under resourced and Western Isles who have a Cardiac Specialist Nurse model). The lack of service provision in Orkney remains an ongoing concern, despite attempts to recruit there is no heart failure nurse provision and alternative methods of heart failure care is under review.

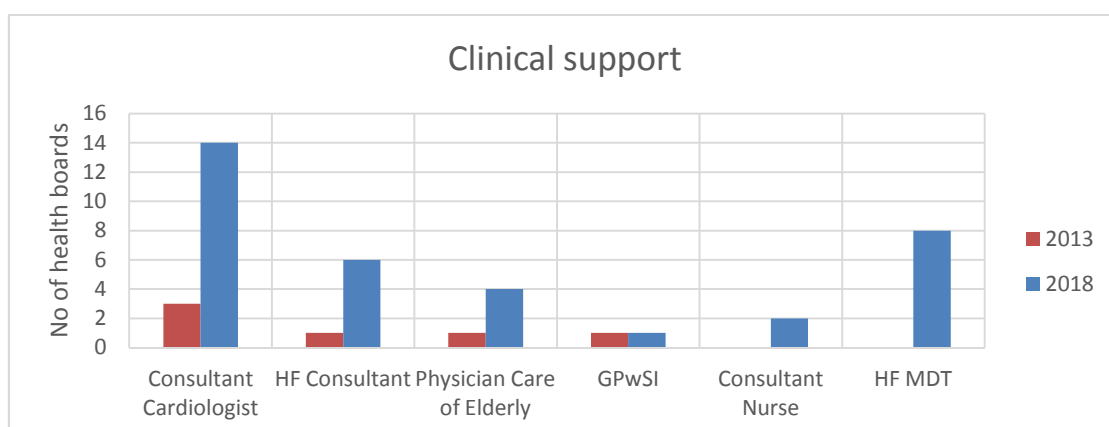
This overall lack of increased nursing provision is despite the increase in inpatient heart failure nurse numbers in Scotland (figure 1). In addition some of the WTE nurses in boards provide a general cardiac nursing service of which heart failure is only part of their job description. This is more prevalent in rural boards such as the Western Isles, Highlands and Ayrshire & Arran due to strategic challenges to deliver cardiac care. This multi-dimensional role means the nurses review chest pain patients and cardiac rehabilitation as well as heart failure services. However this is a service model that may be entirely appropriate for smaller rural boards with a smaller population but may not be suitable for larger boards with differing population needs. This leads to some of the rural boards to have smaller caseloads of patients as their numbers are influenced by the large geographical area and the travel time required to provide a home based service. Therefore the figures for caseload and service provision in rural boards have to be viewed within this context. The SHFNF note that these rural boards are often the boards to consider novel ways of care delivery such as the use of technology e.g. text based services as demonstrated by the Western Isles.

Figure 4: Heart Failure Nurses caseloads distribution per Whole Time Equivalent (WTE)



Despite all boards having seen no demonstrable increase in the number of heart failure nurses the graph above demonstrates an increase in average numbers of heart failure patients managed on nurse’s caseloads per WTE. As is shown in the 2013 report the most commonly reported caseload was between 83-100 patients whereas in 2018 seven boards have staff managing caseloads in excess of 120 per WTE. The impact of this increasing case load and lack of increased service provision will be defined in part by the service model they provide. These increased competing demands on staff with frailer and older people to manage and ever increasing caseloads may provide additional pressures to staff resulting in under resourced teams and dilution of care. It has been reported that Heart failure nurse teams offer a variety of appointment times ranging from 15 to 60 minutes per patient. Some of these shorter appointments are services redesigning to cope with the increased caseloads. However these services will need to consider if this group of complex co-morbid patients can be effectively assessed within 15 minute slots.

Figure 5: Support for clinical management



We are pleased to note that heart failure nurses have increased clinical support from the wider health care team. Currently 50% of health boards have developed and implemented specific heart failure MDT meetings and management approaches which are considered the gold standard for the delivery of heart failure care (Morton 2018). In addition 14 boards now have dedicated Consultant Cardiologist support for their heart failure nurse services. This is a significant improvement from 2013 when only 6 boards reported dedicated Cardiologist support.

Report summary

There is a strong evidence base for the role of the heart failure specialist nurse and we continue to see their absolute benefit from national audit (NICOR 2018). In addition, we are pleased to note that some services in Scotland have adapted to the increased service needs and are utilising innovative models of care creatively. However, it is clear from the data gathered for this report that despite the overwhelming changes in patient demographics and people living with heart failure, there has been little investment into services during the last 6 years. It is disappointing to the SHFNF that there has been no real change in overall nursing provision for heart failure since 2012. In fact, in comparison to our 2008 report there are now even less nurses. Additionally it remains a real concern that NHS Orkney has had no heart failure service for over 5 years. We have also identified that although Boards have adapted service models to cope with increasing caseload numbers, by reducing appointment times and the number of home visits being undertaken, we continue to receive reports that services are struggling to meet increasing demand.

The population is projected to age; people aged 75 and over will be the fastest growing age group in Scotland (National Records of Scotland 2017). The number of people aged 75 and over is projected to increase by 27% over the next ten years and 79% over the next 25 years to 2041. The number of new cases of heart failure is expected to exponentially rise with this increasing population (Cowie 2017) due to the fact that the risk increases steeply with age in both sexes and reaches as high as 1.5% per year in men over the age of 85. Additionally, because of lack of specialist HF services for Congenital Heart Disease, HFpEF and Valvular Heart disease, we are looking at a potential crisis in care delivery. With no corresponding increase to local service staff resource there is a serious challenge to be faced by Health Boards, who are being advised to undertake service and workforce planning in order to future proof heart failure nurse services in Scotland. The mapping of local service infrastructure and staffing would be well placed under the support of the National Advisory Committee for transparency and guidance.

There is a dearth of robust heart failure data in Boards because many services do not have functioning databases. Lack of available local and national data for heart failure services is a major barrier for Boards when addressing services and investment requirements to ensure future sustainability. Evaluation of services and outcome data for heart failure management is crucial to enable Scotland to support future planning of Heart Failure services and to align Scotland with England and Wales.

Heart failure nurses manage the optimisation of evidence based therapies, symptom control in addition to providing psychological and palliative care support for patients with heart failure. However, these nurses are now reviewing more patients with multi-morbid conditions such as renal, respiratory and diabetic disease and are adapting their care delivery to provide a holistic approach to patient management. This multiple condition management can prove extremely challenging because of the reduction in appointment times and the increasing service demands. When Boards review future services, this impact on care delivery should be explored and consideration should be given to supporting heart failure nurses to continue to maintain high levels of expertise and thus deliver high levels of care. This could be achieved by utilising other multi-disciplinary staff members such as pharmacists, psychologists and dedicated community long-term condition nurses. Novel

approaches to care delivery and team working might provide longer-term solutions with tiered care levels and appropriate skill mix.

Recent evidence has highlighted the requirement to include inpatient heart failure management within heart failure services, in order to provide effective hospital care and reduce readmission and mortality rates (NICOR 2018 & NCEPOD 2018). Since 2013, the increase in number of Boards delivering elements of inpatient care is a positive development. However, it is worth noting that very few Boards deliver an admission to discharge pathway. Many provide only an in-patient education service. In order for Scotland to provide a robust inpatient heart failure service, a review of current inpatient models of care is necessary; to ensure that they meet evidence based guidelines that have been proven to improve patient outcomes.

One of the Scottish Heart Failure Hub's priorities for 2019-20 is to work with Boards to facilitate development of service models that support the needs of all patients with heart failure, irrespective of the aetiology of their condition, including congenital heart disease, valvular heart disease and heart failure with preserved ejection fraction. As highlighted in this report, these are areas of unmet need and there will be future challenges in providing specialist heart failure care to these patient groups. The Heart Failure nurses have the skill set and knowledge to best support these patients and to therefore provide equity of care for all heart failure patients. However, there is little understanding of the resources required within Boards to include these patient groups within heart failure services. As part of service remodelling, consideration should be given to the development of criteria to include these patient groups into heart failure services.

NES and the RCN provide clear criteria for advanced nursing practice and skill levels. In order to deliver a realistic approach to service development, a locally structured education pathway, based on national guidance, should be developed. This would ensure that heart failure nurses are provided with the correct level of post graduate education, continuing professional development, clinical support and supervision. This may also lead to a combination of AFC heart failure advanced nurse practitioners and heart failure nurse practitioners working within clearly defined boundaries of skill, autonomy and accountability. We would discourage Boards from addressing cost efficiencies by reducing the AFC banding for heart failure nurses. It is of real concern to the SHFNF that posts are being inappropriately downgraded, particularly in an era when our patients and the therapies available to them have become much more complex and heart failure nurses therefore require to deliver significantly more advanced levels of care than ever before.

Recommendations

1. Model current and future service heart failure demands to address the expected increase in the population of patients living with heart failure.
2. To review local capacity and develop services to address the workload associated with patients who are not currently managed under a HF specialist nurse, i.e. those living with HFpEF, Valvular and Congenital heart disease.
3. To provide all those patients admitted to hospital with a heart failure service review and a clear pathway of care, including provision of a MDT and a heart failure nurse.
4. Ensure each board has a database to evaluate the quality of service provision through audit and to enable development of quality improvement programmes
5. To provide access and support to an educational development and competency pathway for heart failure ANP/NP training with a clear commitment to sustainable continuing development on an annual basis with appropriate AFC remuneration.
6. To propose that the Heart Failure Hub monitors board progress with these recommendations on an annual basis.

Key areas of collaborative work that will require support by the SHFNF

Due to the rising prevalence of heart failure and the increasing complexity of caring for patients with heart failure, it is crucial that Scottish heart failure services are fit for future purpose. 4 areas of collaborative work that will hopefully be undertaken by the SHNF, the Scottish Heart Failure Hub and NACHD, to improve future Scottish heart failure service provision, are summarised below.

Diagnosis and specialist management of acute heart failure: A key area of work will be to ensure that all acute hospitals have a pathway of care for patients admitted with symptoms of heart failure. This should include access to natriuretic peptides and echocardiography for timely diagnosis, heart failure specialist review during admission, access to a multi-disciplinary heart failure team, best practice escalation decision making aligning with patient wishes and communicated to healthcare professionals across the care pathway, anticipatory care planning, access to palliative care services, supported discharge and early follow up.

Access to heart failure services for all patients with heart failure irrespective of aetiology: There is a robust armamentarium of evidence-based therapy that improves outcomes for patients with heart failure as a result of left ventricular systolic dysfunction (LVSD). Scottish heart failure services deliver care to these patients. However, patients with non LVSD heart failure are also likely to benefit from the holistic care offered by heart failure services including - patient education, self-management advice, cardiac rehabilitation, psychology support and end of life care. Very few Scottish heart failure services support this group of patients therefore a key area of work will address how best to develop services to meet the care needs of all patients with heart failure, in an equitable and sustainable manner.

Shared care of heart failure patients with allied healthcare professionals across primary and secondary care: To enable Scottish heart failure services to support all patients with heart failure, during acute hospital admission and in the community, current service models require to be adapted. Highest risk patients should be seen by the most specialist members of the heart failure team whilst collaboration, delivery of education and joint working with allied healthcare professionals across primary and secondary care would facilitate more shared care of patients at lower risk. This would additionally optimise the contribution of existing NHS staff skills and avoid duplication of work.

Data collection and mapping variation in the provision of heart failure care and patient outcomes: It is crucial that Scotland obtains accurate, relevant and comparable heart failure data in order to measure quality of services against agreed clinical indicators with proven links to improved patient outcomes. This will support performance monitoring, service planning, sharing of good practice and improvement of services at practice, hospital, Board and National level. The requirement for robust heart failure data is being addressed by the SHFNF in collaboration with the Scottish Heart Failure Hub and NACHD.

Health board templates for heart failure service provision

NHS Board	Ayrshire & Arran	Ayrshire & Arran
Review year	2012	2018
Population	366860	370410
Urban %	78%	78%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✗ HF post MI ✗ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF (only with LVSD) ✗ Congenital HF ✓ General palliative care with pathway to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✗ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✓ GP surgery (stand alone clinics) ✓ Virtual
Resources	No of nurses in HF service =7 No WTE HF nurses = 4	No of nurses in HF service =7 (Cardiac specialist nurse model) WTE HF nurses = 4 (5 WTE in 2008)
Total patients per year	2012 report: <i>348 Patients managed</i>	2017-2018: <i>482 patients managed</i>

Service achievements since the last Review in 2013:-

- Implementation of home health monitoring.
- New database developed for audit and record keeping
- Development of electronic referral process
- Use of electronic communications e.g. Ipad, staff development programme with Cardiac Rehab, out-patient nurse led clinic at both sites.

Service challenges since the last Review in 2013:-

Staffing levels is problematic which reduces the ability of the team to innovate

Future improvements:-

- Reintroduction of outpatient Intravenous (IV) diuretics
- Exploration of rapid response and early supported discharge services
- Weekly MDT.

NHS Board	Borders	Borders
Review year	2012	2018
Population	112870	115020
Urban %	47%	47%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF (only with LVSD) ✓ Congenital HF ✓ General palliative care with links to specialist services for advice ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- no direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✓ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✗ GP surgery ✓ Virtual
Resources	No of nurses in HF service=3 No WTE HF nurses=1.3	No of nurses in HF service=3 WTE HF nurses=1.1 (2.5 WTE in 2008)
Total patients per year	2012 report: <i>140 patients managed</i>	2017 - 2018 <i>160 Patients managed</i>

Service achievements since the last Review in 2013:-

- Increased clinic capacity resulting in a reduction of home visit model, increasing service efficiency

Service challenges since the last Review in 2013:-

- Increased caseloads and referrals with no concurrent increase in resource.
- Elderly population, increasing complexity.
- No cardiology lead – difficult getting support for service development or progressing change due to increased workload of staff.
- No database or audit facility to demonstrate need to change.

Future improvements:-

- Develop IV iron service,
- Psychology pathway – although limited psychology access when escalation required.
- BNP introduction

NHS Board	Dumfries & Galloway	Dumfries & Galloway
Review year	2012	2018
Population	148190	149200
Urban %	46%	55%
Service provision	<ul style="list-style-type: none"> ✓ HF rEF ✗ HF pEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HF rEF ✗ HF pEF ✓ HF post MI ✓ Valvular HF (only with LVSD) ✗ Congenital HF ✓ General palliative care with links to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✗ In-pt management ✗ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✗ In-pt management ✗ GP surgery ✓ Virtual
Resources	No of nurses in HF service=2 No WTE HF nurses =2	No of nurses in HF service=2 WTE HF nurses=2 (2 WTE in 2008)
Total patients per year	2012 report: <i>268 patients managed</i>	2017 -2018 <i>375 patients managed</i>

Service achievements since the last Review in 2013:-

- The ability to provide a Heart Failure service with no clinical lead and retaining staff despite additional workload and stresses

Service challenges since the last Review in 2013:-

- Unable to review patients within 2 weeks of referral.
- No coordination of services due to no Managed Clinical Network, reducing the ability to communicate and develop services across primary and secondary care.
- Unable to provide in-patient service
- Unable to provide IV Furosemide or IV Iron as day case

Future improvements:-

- Database fit for purpose
- Administration support required
- To procure sufficient funding to match resource demands

NHS Board	Fife	Fife
Review year	2012	2018
Population	364945	368808
Urban %	79%	82%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✓ HFpEF ✗ HF post MI ✗ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✓ HFpEF ✗ HF post MI ✓ Valvular HF (only with LVSD) ✗ Congenital HF ✓ General palliative care with links to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- no direct referrals to services
Service model	<ul style="list-style-type: none"> ✓ Home ✗ Clinic ✗ In-pt education ✗ In-pt management ✗ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✗ Clinic ✗ In-pt education ✗ In-pt management ✗ GP surgery ✗ Virtual
Resources	No of nurses in HF service =2 No WTE HF nurses =2	No of nurses in HF service=2 No WTE HF nurses=2 (2 WTE in 2008)
Total patients per year	2012 report: <i>238 Patients managed</i>	2017-2018: <i>287 Patients managed</i>

Service achievements since the last Review in 2013:-

- Development of HF support group.
- Redesign of community cardiac services

Service challenges since the last Review in 2013:-

- Staffing levels to meet demand

Future improvements:-

- Redesign of community cardiac services

NHS Board	Forth Valley	Forth Valley
Review year	2012	2018
Population	293386	305000
Urban %	80%	75%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✗ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✗ Valvular HF ✗ Congenital HF ✓ General palliative care and 1 HF specialised palliative care nurse - direct links to specialist care ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- no direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✗ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✗ GP surgery ✓ Virtual
Resources	No of nurses in HF service=4 No WTE HF nurses =3	No of nurses in HF service=5 WTE HF nurses=3.35 (3.2 WTE in 2008)
Total patients per year	2012 report: <i>300 Patients managed</i>	2017 – 2018: <i>480 patients managed</i>

Service achievements since the last Review in 2013:-

- Implemented Heart failure MDT
- Day case diuretic in Cardiology Day Unit,
- Participating in Heart Failure research
- Smooth introduction for assessment of suitability for Entresto, device and arrhythmia MDT.
- Increased use of and protocol for Subcutaneous Furosemide in the community
- Access to Natriuretic peptide testing

Service challenges since the last Review in 2013:-

Improved access to psychology service (when escalation required)

Future improvements:-

- To speed up the process of diagnosis of outpatients following Natriuretic peptide testing by GP with same day echo and review of patients with elevated Natriuretic peptide.
- To undertake a scoping exercise with for HFpEF/Right sided HF patients.
- To scope options for a heart failure inpatient unit.

NHS Board	Grampian	Grampian
Review year	2012	2018
Population	550620	586380
Urban %	64%	66%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✗ HF post MI ✗ Valvular HF ✗ Congenital HF ✗ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✗ HF post MI ✗ Valvular HF ✗ Congenital HF ✓ General palliative care with referrals to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- no direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✗ In-pt management ✓ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✗ In-pt management ✓ GP surgery (stand alone clinics) ✓ Virtual
Resources	No of nurses in HF service= 4 No WTE HF nurses =2.65	No of nurses in HF service =6 No WTE HF nurses=5.5 (2 WTE in 2008)
Total patients per year	2012 report: <i>250 patients managed</i>	2017 – 2018: <i>309 patients managed</i>

Service achievements since 2013:

- Successfully set up the permanent service which is Grampian wide ensuring equity of care and access to service for patients, carers and colleagues.
- Participation in the Heart Failure Hub supportive palliative care programme resulting in development of a medical anticipatory care plan and a pathway to palliative day unit services.
- Adoption of PHQ-4 as part of our psychological screening clinical assessment following the Heart Failure Hub programme.
- Development of MDT which runs 6 weekly.
- Secured a prescribing budget for the Non-medical prescribing for the Heart Failure nurses.
- IT development resulted in migrating service database to Trak for monitoring all referrals and reviews. Letters are via Winscribe.

Service challenges since 2013:

- Recruiting and training the new permanent team which required intensive planning to ensure each new Heart failure nurse had equal access to training and development.

Future Improvements:

- The possibility of introducing a hospital based HF Specialist Nurse to identify and triage HF patients so they can be promptly treated and appropriately referred to Cardiology and receive specialist HF input.
- Launch a HF education programme including three levels: Carers and Support Worker, DN's and Registered Nurse and thirdly Practice Nurse and ANPS. The programme aims to enhance patient and carer education about HF and self management.
- Psychology input within Cardiology/HF Service to support HF patients

NHS Board	Greater Glasgow & Clyde North	Greater Glasgow & Clyde North sector
Review year	2012	2018
Population	No data as new locality split	380000*
Urban %	95%	95%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ General palliative care with some specialist links ✓ Screening for psychological distress variable- direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✗ In-pt management ✓ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✗ In-pt management ✓ GP surgery ✓ Virtual
Resources	5 No of nurses in HF service 4.25 Total No WTE HF nurses	5 No of nurses in HF service 4.25 Total No WTE HF nurses
Total patients per year	No previous data as aggregated in 2012 to total board	2017 -2018: 994 <i>patients managed</i>

NHS Board	Greater Glasgow & Clyde South	Greater Glasgow & Clyde South sector
Review year	2012	2018
Population	No data as new locality split	480000*
Urban %	85%	85%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ General palliative care with some specialist links ✓ Screening for psychological distress variable- direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✗ In-pt management ✓ GP surgery 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✗ In-pt management ✓ GP surgery

	✓ Virtual	✓ Virtual
Resources	7 No of nurses in HF service 5.79 Total No WTE HF nurses	7 No of nurses in HF service 5.79 Total No WTE HF nurses
Total patients per year	No previous data as aggregated in 2012 to total board	2017 -2018: 1659 <i>Patients managed</i>

NHS Board	Greater Glasgow & Clyde Clyde	Greater Glasgow & Clyde-Clyde sector
Review year	2012	2018
Population	No data as new locality split	255000*
Urban %	70%	70%
Service provision	✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ Palliative Care	✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ General palliative care with some specialist links ✓ Screening for psychological distress variable- direct referrals to psychology
Service model	✓ Home ✓ Clinic ✓ In-pt education ✗ In-pt management ✓ GP surgery ✓ Virtual	✓ Home ✓ Clinic ✓ In-pt education ✗ In-pt management ✓ GP surgery ✓ Virtual
Resources	5 No of nurses in HF service 4.5 Total No WTE HF nurses	5 No of nurses in HF service 4.5 Total No WTE HF nurses
Total patients per year	No previous data as aggregated in 2012 to total board	2017 -2018: 1191 <i>Patients managed</i>

Service achievements since the last Review in 2013:-

- Developed early supported discharge (ESD) approach. Evolved audit strategy to capture ESD and admissions avoided.
- Developed and launched web based patient management database allowing for more flexibility in cross site working.
- Broadly paperless way of working.
- Implemented peer review strategy.

- Developed patient engagement; this has led to development of in-patient information resource.
- Development a junior CNS role as part of the service model to improve succession planning and develops the ANP's supportive/managerial role.
- Development of MDT's and joint clinics in some hospitals in Glasgow

Service challenges since the last Review in 2013:-

- Increasing expectation to manage more acute patients more intensively and for longer with no added resource (there has actually been a net reduction in admin and nurse time).
- Increasing range of patient referrals moving away from the tight criteria for which the service is resourced (i.e. much broader caseload of heart failure patients and not just those with an admission to hospital with worsening heart failure. Not a negative development but requires better resourcing.

Future improvements:-

- Improving inpatient engagement and service and ward staff education, refining ESD.
- Including Home visits and indirect clinical telephone contacts onto a structured track care template
- With appropriate resourcing, would aspire to improve direct care involvement with inpatients
- With appropriate resourcing would aspire to include HFpEF patients into service

NHS Board	Highland	Highland
Review year	2012	2018
Population	No data (new locality split with Argyle & Bute)	235000
Urban %	20%	20%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✗ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF (with LVSD) ✗ Congenital HF ✓ General palliative care with links to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress variable- no direct referral to psychologist
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✗ In-pt management ✗ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✗ GP surgery ✓ Virtual
Resources	6 No of nurses in HF service 3 Total No WTE HF nurses	6 No of nurses in HF service 3 Total No WTE HF nurses
Total patients per year	2012 report: 289 <i>patients managed</i>	2017 -2018: 412 <i>Patients managed(due to locality change)</i>

Service achievements since the last Review in 2013:-

- Providing an in reach service on a daily basis (Monday-Friday) to the cardiology ward allowing the identification of patients and assisting in the planning of their follow up care.

Service challenges since the last Review in 2013:-

- Staff now managing cardiac rehab patients, with no extra hours which is placing more demand on heart failure service provision.
- Difficulty accessing clinic space to be able to reduce home visits

Future improvements:-

- Standard operating procedures to help with service improvement and developments
- Development of a strict discharge policy to help with increasing caseload numbers.

NHS Board	Highland -Argyll & Bute HSCP	Highlands -Argyll & Bute HSCP
Review year	2012	2018
Population	No data (new locality split with Highlands)	87650
Urban %	13%	13%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✓ HFpEF ✓ HF post MI ✓ Valvular HF ✓ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✓ HFpEF ✓ HF post MI ✓ Valvular HF ✓ Congenital HF ✓ General palliative care with close links to GG & C for specialist input ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- no direct referral to psychologist
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✗ GP surgery ✗ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✗ GP surgery ✗ Virtual
Resources	No of nurses in HF service=3 No WTE HF nurses =2.75	No of nurses in HF service=3 WTE HF nurses=2.75 Heart failure care 70%/Cardiology 30% care (3 WTE in 2008)
Total patients per year	No data: Patients managed in year pre 2012 report	2017 -2018: patient managed 325

Service achievements since the last Review in 2013:-

- Access to Natriuretic peptide for diagnosis and prognosis.

Service challenges since the last Review in 2013:-

- Providing an equitable service remains challenging due to sparse population and remoteness. The use of technology and remote care is being explored for these areas however limited broadband provision affects widespread roll-out.

- Argyll and Bute consists of remote/rural areas incorporating 7 main islands and 4 small inhabited islands – independent practice with minimal administration support.
- Recruitment is challenging further difficulties are expected due to retirement. Succession planning essential.
- Cardiology support is based at Lorn & Islands Hospital.

Future improvements:-

- Looking into the potential benefit of technology such as Florence.
- It is hoped to build on the In-reach support to acute services.

NHS Board	Lanarkshire	Lanarkshire
Review year	2012	2018
Population	562477	656490
Urban %	89%	89%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✗ HF post MI ✗ Valvular HF ✗ Congenital HF ✗ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✗ HF post MI ✓ Valvular HF (only with LVSD) ✗ Congenital HF ✓ General palliative care with links to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✓ In-pt management ✗ GP surgery ✗ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✗ In-pt management ✗ GP surgery ✗ Virtual
Resources	No of nurses in HF service= 4 No WTE HF nurses =3.6	No of nurses in HF service = 5 WTE HF nurses= 3.7 (3WTE in 2008)
Total patients per year	2012 report: 400 patient managed	2017-2018: 800 patient managed

Service achievements since the last Review in 2013:-

- Developed a chronic cardiac disease anticipatory care plan.
- Improved links with Palliative care team both inpatient and community based. Improved access to Complimentary Therapy support and services via the palliative Care team in the Community for both patients and their carers.
- Development of a collaborative (service & industry) Heart Failure Titration Clinic at University Hospital Monklands (UHM). Support has been offered at University Hospital Wishaw and University Hospital Hairmyres.
- Access to IV Iron at UHM. Inpatient (day case), administration of IV Iron where necessary. Improved psychological support for patients with access to outpatient

reviews at UHM. Access to a Cardiology MDT which has been well supported by both medical and other AHP's at University hospital Wishaw.

- Improved involvement in the recruitment of patients for Clinical Trials.
- Access to Nt-proBNP for all sites (mainly for initiation of Sacubitril Valsartan).
- Heart Failure staff have managed to maintain their involvement in the Heart Failure Forum and the Heart Failure Hub to try to improve services across Scotland for Heart failure patients.
- Lanarkshire have developed a Cardiac Nurse Forum (Cardiac Rehab, RACPC, HFNS, Cath Lab staff, Community CNS), to improve equity and communication over all 3 sites.
- Recently a regional adult congenital heart disease clinic was set up at UHW

Service challenges since the last Review in 2013:-

- Increased patient referrals which were further affected by the introduction of Sacubitril/Valsartan.
- No real increase in resources other than at UHH. UHM and UHW both still at 1.4 WTE each.
- Due to increased activity, more clinics set up to manage the patient numbers having an impact on admin support and activity within the service. This in turn has changed activity from home visits to mainly clinic access.
- New staff requiring study time to complete training for role. This impacts on patient monitoring for their caseload.
- Unable to implement MDT's at UHH and UHM due to time constraints and caseloads activity.

Future improvements:-

- The implementation of an improved inpatient service. The aim is to improve patient education and management. Support has again been offered by a pharmaceutical company for a feasibility study.

NHS Board	Lothian	Lothian
Review year	2012	2018
Population	836711	889450
Urban %	89%	89%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✗ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✗ HF post MI ✓ Valvular HF (only with LVSD) ✓ Congenital HF (only with LVSD) ✓ General palliative care with pathway to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✗ In -pt management ✗ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✓ GP surgery (stand alone clinic) ✓ Virtual/phone
Resources	No of nurses in HF service= 4 No WTE HF nurses =4	No of nurses in HF service =8 WTE HF nurses=6.2 (funding due to end April 2019 for 2.2 WTE) (4 WTE in 2008 & 1 BHF education nurse)
Total patients per year	2012 report: 310	2017-2018: 800 patients managed

Service achievements since the last Review in 2013:-

- Development of locality clinics across the Health Board.
- Rapid access diagnostic heart failure pathway with Natriuretic peptide testing
- Rapid access heart failure nurse clinic with heart failure consultant support for post admission review and decompensating patients.
- Increased administrative support.
- Staff completing ANP pathway.
- Ongoing quarterly patient forum.

- Development of MDT and pilot of inpatient service with positive results
- Paperless service.
- Psychological screening at each review.
- Development of links with Palliative care services

Service challenges since the last Review in 2013:-

- Difficulties in securing funding for pilot inpatient service and unclear whether it will be sustained.
- No database for audit purposes and future service planning/patient outcomes

Future improvements:-

- Continue to improve on palliative care work stream
- We would like to develop Heart failure database for improved audit in partnership with Heart Failure hub

NHS Board	Orkney	Orkney
Review year	2012	2018
Population	20110	22000
Urban %	34%	34%
Service Provision	<ul style="list-style-type: none"> × HFrEF × HFpEF × HF post MI × Valvular HF × Congenital HF × Palliative Care 	<ul style="list-style-type: none"> × HFrEF × HFpEF × HF post MI × Valvular HF × Congenital HF × Palliative Care × Cardiac Rehabilitation for HF × Screening for psychological distress
Service model	<ul style="list-style-type: none"> × Home × Clinic × In-pt education × In-pt management × GP surgery × Virtual 	<ul style="list-style-type: none"> × Home × Clinic × In-pt education × In-pt management × GP surgery × Virtual
Resources	0 No of nurses in HF service 0 Total No WTE HF nurses	0 No of nurses in HF service 0 Total No WTE HF nurses
Total patients per year	Service discontinued after a successful pilot 2007-2010.	No patients managed by heart failure nurse

Service achievements since the last Review in 2013:-

- NHS Orkney has recognised the need to develop HF services and has been trying to recruit with this development in mind

Service challenges since the last Review in 2013:-

- While there is not a dedicated HF nurse service, a HF nurse specialist provides HF review and advice as part of her role as Cardiac Specialist Nurse NHSO tried unsuccessfully to recruit to a part time HF nurse post. NHSO is therefore reviewing HF care provision.

Future improvements:-

- The Cardiac Specialist Nurse role has recently been reviewed using a workload tool and there are plans underway to remove admin duties to allow time to provide an advisory role for heart failure.

NHS Board	Shetland	Shetland
Review year	2012	2018
Population	22400	23200
Urban %	0%	0%
Service Provision	<ul style="list-style-type: none"> ✓ HFrEF ✓ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ Palliative Care ✓ Cardiac rehabilitation 	<ul style="list-style-type: none"> ✓ HFrEF ✓ HFpEF ✓ HF post MI ✓ Valvular HF (only with LVSD) ✓ Congenital HF ✓ Palliative Care ✓ Cardiac rehabilitation for HF ✓ Screening for psychological distress with pathway to mental health services
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✗ In-pt management ✗ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✓ In-pt education ✓ In-pt management ✗ GP surgery ✓ Virtual
Resources	No of nurses in HF service= 1 No WTE HF nurses =0.5	No of nurses in HF service=1(Cardiac specialist nurse model) WTE HF nurses=0.5 (0.3 WTE in 2008)
Total patients per year	2012 report: <i>120 patients managed</i>	2017 -2018: <i>Patients managed 100 (due to new referral criteria)</i>

The cardiac nurse specialist in addition to the HF service, covers Cardiac Rehab, Treadmill testing, Chair of CHD MCN, strategic and local service work and manages the Specialist Nursing Team

Service achievements since the last Review in 2013:-

- A locum Consultant Cardiologist has been in post since 2017 leading to improved access and continuity for patients.
- The introduction of clinical pathways for Primary Care referrals

Service challenges since the last Review in 2013:-

- No cardiac physiologist in post – locum cover + NHS Grampian support

Future improvements:-

- Introduction of a seated exercise class for HF pts/less able cardiac patients in April 2019
- Introduction of a weekly health education sessions + “Drop in Cafe” for cardiac patients (including HF pts) to access – May 2019

NHS Board	Tayside	Tayside
Review year	2012	2018
Population	402641	415470
Urban %	76%	76%
Service Provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ Valvular HF (only with LVSD) ✗ Congenital HF ✓ General palliative care and pathway to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✗ Clinic ✗ In-pt education ✗ In-pt management ✗ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✗ In-pt management ✗ GP surgery ✓ Virtual
Resources	No of nurses in HF service =3 No WTE HF nurses =3	No of nurses in HF service =3 WTE HF nurses =3 (3 WTE in 2008)
Total patients per year	2012 report: <i>Patients managed 515</i>	2017 -2018: <i>Patients managed 549</i>

Service achievements since the last Review in 2013:-

- Clinic system developed
- Heart Failure nurse delivery of psychological assessment (Heart Failure Hub support)
- Participation in the national Palliative Care Programme (Heart Failure Hub support)
- Improved coding on discharge (use of 5th digit identifying those with LVSD)
- BNP in use to triage/streamline echo requests and fast track clinical input as appropriate.
- MDT established.

Service challenges since the last Review in 2013:-

- Increased patient numbers and complexity, resulting in longer time within the service.
- Additional patients re-referred to service requiring support for commencing Entresto.

Future improvements:-

- Implementation of a step down services i.e. virtual and optimisation clinics.
- New database to support cardiology nursing services

NHS Board	Western Isles	Western Isles
Review year	2012	2018
Population	26190	26900
Urban %	40%	40%
Service provision	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✗ Valvular HF ✗ Congenital HF ✓ Palliative Care 	<ul style="list-style-type: none"> ✓ HFrEF ✗ HFpEF ✓ HF post MI ✓ All Valvular HF ✗ Congenital HF ✓ General palliative care with links to specialist services ✓ Cardiac Rehabilitation for HF ✓ Screening for psychological distress- no direct referrals to psychology
Service model	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✗ In-pt management ✓ GP surgery ✓ Virtual 	<ul style="list-style-type: none"> ✓ Home ✓ Clinic ✗ In-pt education ✗ In-pt management ✓ Stand alone clinic in GP surgery ✓ Virtual
Resources	No of nurses in HF service =3 No WTE HF nurses =2	No of nurses in HF service =5 (Cardiac specialist nurse model) WTE HF nurses=2.79 (2 WTE in 2008)
Total patients per year	2012 report: <i>240 patients managed</i>	2017 -2018: <i>312 patients managed</i>

Service achievements since 2013:-

- Team have participated in several Hub work streams: Supportive and Palliative care and psychological assessment. We have developed links to palliative care services, telephone consultation with Roxburgh House or discussion with GP with hospice responsibility
- Day case IV diuretic therapy now available.
- Routine use of 'Florence' text based support for heart failure and cardiac specialist nurse caseloads.

Service challenges since 2013:-

- Maintaining professional development and networking/benchmarking in a challenging financial climate (ability to travel off island due to financial constraints).
- Increased service remit since last report in addition to the delivery of HF care.

- Provision of an equitable cardiology service across the Western Isles, due to population spread and remoteness of some parts of the island chain.
- Cardiac specialist nurse team also deliver Cardiac Rehabilitation, RACPC and Familial Hypercholesterolaemia services

Future improvements:-

- Utilise new IT such as Attend Anywhere to improve equity.
- 'MORSE' system in development to move from current database leading to paperless working.
- Development IV Iron pathway



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