

Are We Delivering Evidence-Based Care for Heart Failure in Primary Care?

C Deaton¹²³ L Burey³⁴ M Spence³⁴ J Thomas³⁴ Kieley Wild³⁵ W Parkar⁶ I Benett⁶

¹School of Nursing, Midwifery & Social Work, University of Manchester, ²Central Manchester University Hospitals NHS FT, ³NIHR Collaboration for Leadership in Applied Health Research and Care Greater Manchester, ⁴Salford Royal NHS FT Greater Manchester, ⁵Pennine Acute Hospital NHS Trust, Greater Manchester, ⁶NHS Manchester

INTRODUCTION

Heart failure, a clinical syndrome of signs and symptoms suggesting impairment of the heart's function as a pump [1], remains a challenge for health care services in the UK especially as prevalence and incidence are increasing. Epidemiological data suggest that the prevalence of HF among the adult population in developed countries is 1-2%, but is 10% or more in those over age 70[2]. The overall prevalence rate for HF according to primary care registers in England is 0.7% [3].

The responsibility for managing patients with heart failure (HF) resides with both primary care and specialists. National guidance on heart failure from the National Institute of Health and Clinical Excellence (NICE) reflects this joint accountability and implies that patients are primarily managed in primary care with referral to specialist care as needed. The Quality Outcomes Framework specifies 4 quality indicators for HF [4] in primary care (Box 1), which do not incorporate all of the necessary evidence-based interventions for patients with HF. Previous studies have highlighted a lack of evidence-based care for HF in primary care and specialist services, and inaccuracy of HF registers in primary care.

AIMS OF THIS ANALYSIS:

1. Assess the accuracy of HF register s in PC practices 2. Describe patients with HF in PC according to their demographic and clinical characteristics 3. Determine the percentage of patients being managed by PC alone, and in collaboration with specialist services 4. Conduct an audit of evidence-based care 5. Compare patients and care received between those managed in PC alone, and those managed collaboratively

METHODS:

As part of the Greater Manchester Collaboration for Leadership in Applied Health Research and Care (GM CLAHRC) HF improvement project, we conducted a cross-sectional assessment of HF management in a sample of 13 practices in 3 different areas of Manchester in 2010–2011. The baseline assessment consisted of HF register validation, case finding, and a skills audit of HF management using the *GM Heart Failure Investigation Tool (GM HFIT)*. Case finding was based on **19 discrete searches** using read codes for medications (eg ACEI), echocardiography and associated conditions. Records were reviewed by a HFSN and a Knowledge Transfer Associate (KTA) working with GM CLAHRC. Practices were audited on **21 evidence-based indicators of care**, and scores were given for the proportion of patients meeting the standard for a total possible score of 80. The practice's total score was further classified according to a traffic light system as **red < 25, amber 25–49, green 50–76, and gold > 76**.

We defined specialist services as HF clinics led by HF consultants or HFSN, and considered patients to be co-managed in specialist services if they were currently attending HF clinics or had been discharged from the HF service within the past 12 months. For the purpose of this analysis, all practice data have been pooled. The characteristics and management for the total sample were described, and comparisons were made between patients co-managed with specialist services and those managed only in PC using students' t-test for continuous data, and chi square proportions for categorical data.



Practices varied in their skills audit scores from 29.5 to 73

Patient Characteristics

The characteristics of the patients are presented in Table 1, with a comparison between those seen recently or currently in specialist services and those managed only in primary care within the past 12 months or more. Patients recently seen in specialist services were younger, more likely to be male, have peripheral vascular disease (PVD) and an EF less than 35% than those managed in primary care only.

Table 1	Variable (sample size if less than total)	All Patients (n = 390)	PC only (n = 281)	SC + PC (n = 109)	P value
Mean Age (sd)		73 (14)	74.5 (14)	70 (14)	.007
Female gender		42%	45%	35%	.004
LVSD (n = 259)		92.5%	90%	90%	.004
Diabetes		31%	32%	29%	.657
CKD		29%	27%	33%	.241
HTN		64%	65%	65%	.312
COPD		18%	18.5%	17%	.805
MI		48%	47%	52%	.314
Previous MI		21%	23.5%	30%	.167
AF		37%	38%	35%	.555
Asthma (n = 141)		7.8%	9.3%	4.5%	.332
PVD (n = 141)		4.3%	1%	11%	.005
Depression		10.5%	11%	9%	.754
Current/Ex smoker/non-smoker (n = 299)		17%/47.5%/36%	18%/45%/37%	14%/54%/32%	.371
Alcohol per week none<10 units/20 units (n = 186)		59%/21.5%/10%	57%/26%/10%	65%/8%/10%	.063
NYHA class I-II/III-IV (n = 67)		70%/30%	72%/28%	69%/31%	.188
EF < 35% (n = 230)		49.5%	41%	63%	.004
EF 36-44%		21%	25%	15%	
EF 45 - 55%		23%	23%	30%	
EF > 55%		9%	12.8%	2.2%	
BP < 130/80		47%	52%	34%	.002
Pulse irregular (n = 166)		28%	29%	25%	.570
HR > 75 bpm(s) = 273		56%	56%	54.5%	.795
Sinus rhythm/AF/other arr ECG (n = 194)		63%/13.5%/1%	68%/18%/4%	71%/16%/2%	.173
QRS duration < 120 msec/>120msec (n = 90)		38%/39%	30%/14.5%	52%/26%	.109

DISCUSSSION:

These data from 13 general practices in a large urban area are consistent with previous reports regarding *inaccuracy of HF registers*, and lack of evidence-based care across both primary and specialist services [5-6]. This poster illustrates the need to increase the accuracy of HF registers in primary care, and to ensure that patients are receiving appropriate therapy, assessments and education. Studies have shown that mortality and morbidity are improved when specific therapies are provided: multi-professional team, in-person communication, optimised medical therapy, patient education, self-management support, on-going surveillance and management of clinical deterioration, and a coordinated system of care and follow-up across in-patient and out-patient settings [7-9]. The frequency of cardiovascular and non-cardiovascular co-morbid conditions seen in these patients is important because it illustrates the multi-morbid complexity of many HF patients. Our data found that only **4.3%** did not have another long-term condition documented, and **80%** had **2** or more co-morbid conditions.

CONCLUSIONS:

The data from this audit indicated that evidence-based pharmacotherapy, patient assessment and self-care education were more likely when patients were managed by both *specialist and primary care services* than when patients were managed in *primary care alone*. A key step is verifying the accuracy of HF Registers and case finding to ensure that appropriate patients are maintained on the register. The net movement in all practices as a result of this work was to add more patients to the register than were removed. Because of the increasing incidence and prevalence of HF, primary care practices need to provide evidence-based care for patients, and collaborate with specialist services to ensure that patients receive appropriate ongoing education and counselling, optimal medical therapy, and surveillance for signs of a worsening condition. The high proportion of patients on both ACEI/ARB and BB is commendable and higher than seen in some previous surveys, but up-titration of these medications to target doses was low. Thus QoI indicators would seem to improve only those items measured, and not enhance the overall quality of evidence-based management. Multiple co-morbid conditions in this patient group provide an additional challenge for GPs, and indicate a need for methods to improve management of multiple conditions.

Indicator	Points	Payment Stages
HF1. The practice can produce a register of patients with heart failure	4	
Initial Diagnosis		
HF2. The percentage of patients with a diagnosis of heart failure (diagnosed after 1 April 2006) which has been confirmed by an echocardiogram or by specialist assessment	6	50-90%
On-going Management		
HF3. The percentage of patients with a current diagnosis of heart failure due to left ventricular dysfunction (LVD) who are currently treated with an ACE inhibitor or angiotensin receptor blocker (ARB), who can tolerate therapy and for whom there are no contraindications	10	45-80%
HF4. The percentage of patients with a current diagnosis of heart failure due to left ventricular dysfunction (LVD) who are currently treated with an ACE inhibitor or angiotensin receptor blocker (ARB), who are additionally treated with a beta-blocker licensed for heart failure, or recorded as intolerant to or having a contraindication to beta-blockers	9	4-65%

RESULTS:

Practice registers ranged in size from 2,322 to 15,562 patients, and HF registers included 2 to 71 patients. A total of 469 patients were on the HF registers of the 13 practices. The combined prevalence of HF in the practices was 0.55%, consistent with the overall reported Manchester prevalence of 0.5%. Validation of the registers revealed 60% of the patients were appropriately on the HF register, 16% were inappropriate (HF ruled out), and 24% needed further investigation to definitively establish a diagnosis. The 79 patients identified as not having HF were excluded from this analysis of the characteristics and management of patients.

Case finding produced **1962 patients** to assess for possible inclusion on the HF registers. When these patients' clinical records were reviewed, **237 patients had definite heart failure** and needed to be added to the disease register. The remaining patients needed **review by the GP (n = 123), referral for echocardiogram (n = 43), the report from the echocardiogram (n = 46), or assessment by a specialist (n = 32)**. Although some patients were removed from the registers through the validation process, a higher number of patients were found who needed to be added or potentially added to the register through case finding. Depending on the number of patients added following further investigations, the prevalence of HF in these 13 practices would increase from a minimum of **0.61%** to a maximum of **1.00%**.

Audit of Patient Care

As can be seen in Table 2, patients collaboratively managed were more likely to be up-titrated on ACE-I and BB, and to receive appropriate assessments and education. Patients receiving both ACEI/ARB and BB were on average 5 years younger than those not on both (70.44 v 75.49, $p = .008$), but proportion receiving both therapies did not vary significantly by gender or previous MI.

Table 2	Variable (sample size if less than total)	All Patients (n = 136)	PC only (n = 281)	SC + PC (n = 109)	P value
Echo done to confirm diagnosis		82%	74%	100%	<.001
NHSA Class recorded		19%	7%	49%	<.001
HF Review		31%	16%	67%	<.001
Other disease reviews		31%	82%	77%	.248
Weight recorded		21%	11%	46%	<.001
Ankle edema checked		30%	16%	64%	<.001
Feet checked		96%	94%	100%	.009
Pulse rate checked		71%	67%	81%	.006
Pulse rhythm checked		43%	37%	56%	.001
ECG performed		61%	56%	73%	.001
ACEi or ARB if LVSD or contraindication documented (n = 271)		89%	88%	93%	.720
Target dose of ACEi or ARB or up-titrating (n = 271)		59%	50%	74%	<.001
BB if LVSD or contraindication documented (n = 371)		77%	71%	87.5%	.003
Target dose of BB or up-titrating (n = 271)		43%	27%	69%	<.001
Both ACEi or ARB and BB or contraindication documented		76%	71%	84%	.089
Screened for depression		60%	58%	63%	.319
Alcohol intake assessed		48%	49.1%	44%	.115
Smoking status assessed		80%	80%	82%	.666
Nutritional information		16%	5%	45%	<.001
Self-care education		10%	4%	43%	<.001
Flu vaccine given or declined by patient		86%	85%	88%	.485
Pneumococcal vaccine given or declined by patient		80%	82%	75%	.087
Uti/crystalline checked last 12 months		87.5%	86%	91%	.060

[illegible]