

GM-HFIT

Greater Manchester Heart Failure Investigation Tool

Improving the quality of heart failure
management in primary care

HSRN Conference 19/20th June

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GM CLAHRC → 1 of 9 NIHR funded CLAHRC's

Collaboration for Leadership in Applied Health Research and Care

Research themes:

People with long-term conditions
Practitioners
Systems

Developing and evaluating improved ways for the NHS to support people in managing their vascular disease

Previous research relevant to people with:

Heart disease
Diabetes
Kidney disease
Stroke

Implementing for people with:

Heart disease
Diabetes
Kidney disease
Stroke

Implementing these and other evidence-based improvements in healthcare

Building NHS capacity to plan and implement evidence-based improvements for people with vascular disease



Heart Failure: Introduction

Heart failure (HF) affects around 900,000 people with 60,000 new cases annually. It accounts for 2% on NHS inpatient days and 5 % of emergency admissions.

Meta-analysis data illustrates that HF admissions can be reduced by 34 – 50%, with the use of tailored interventions involving multi-faceted programmes

Evidence outlines that the accuracy of primary care HF registers is variable. The BHF suggests that HF affects between 1 – 2% of the population

HF registers can be used proactively to improve the care of patients with HF by guiding ongoing treatment and management resulting in the provision of appropriate clinical support and education.

How did we address the issues???



Project Goal:

To improve the quality of service and care for people with heart failure

Sub aims

1. Ensure patient care is consistent with evidence based guidelines from NICE and the ESC

2. Improve the knowledge and skills of health care professionals in relation to HF

3. Improve data quality and standardisation of documentation



GM-HFIT Development

*PDSA small
scale change*

GM-HFIT (verification)



This is a manual clinical audit tool, providing a **'traffic light' score** to assess current heart failure management and the **accuracy of the heart failure disease register**. A HF specialist nurse manually verifies all patients on the HF1 disease register (via the clinical system notes); providing recommendations about their management and validity for the register.

GM-HFIT (case finding)

GM-HFIT (case finding) uses 19 discrete manual searches to identify patients that may have HF, but are currently absent from the HF1 disease register. A HF specialist nurse manually assesses (via the clinical notes) the suitability of all patients generated by the searches.



GM-HFIT (lite)

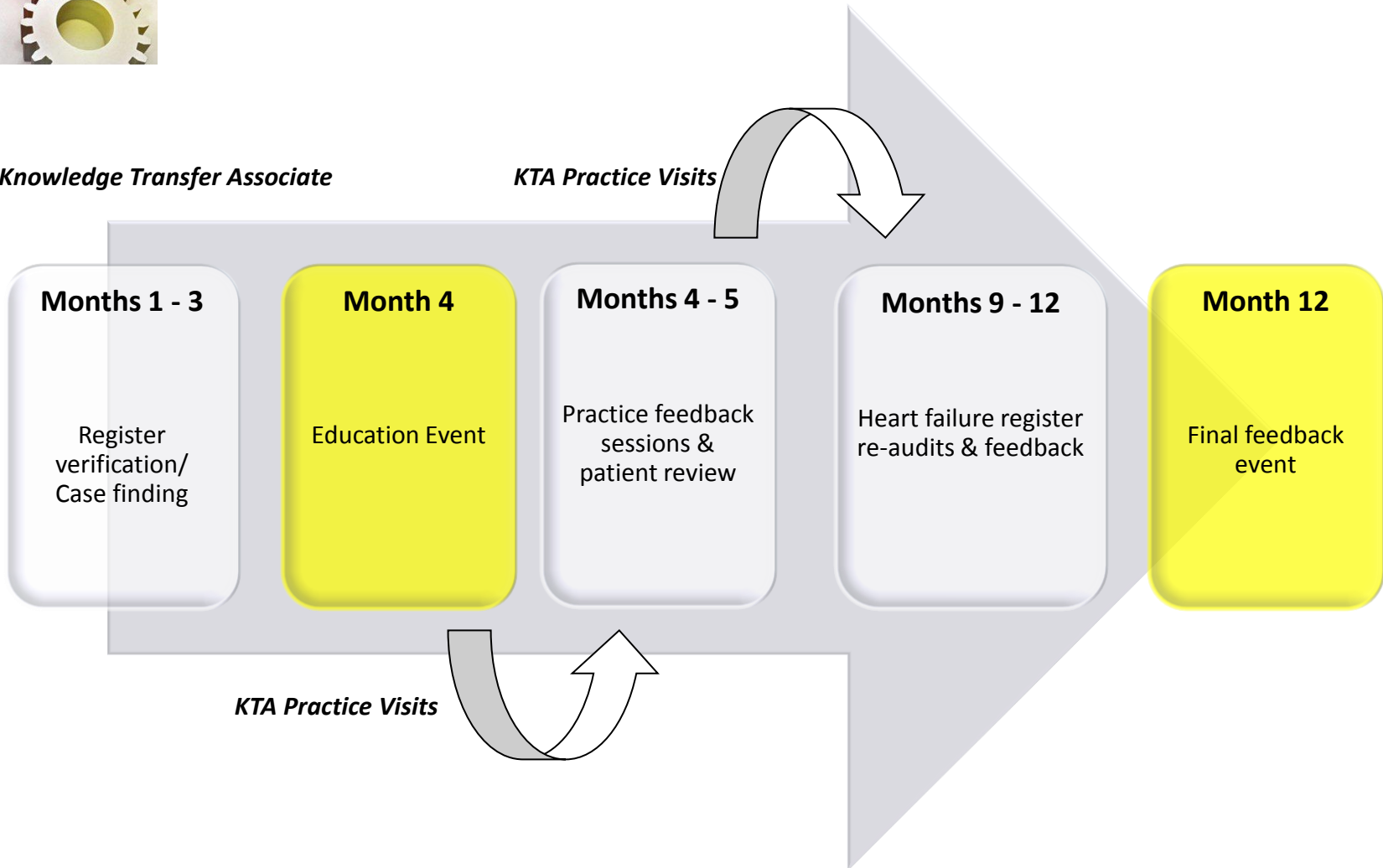
A smaller re-audit is undertaken, to assess the 'traffic light' indicators, to ascertain if any improvements in heart failure management have been achieved. The accuracy of the HF register is also re-assessed to measure improvement.



GM-HFIT Process Flow Chart

KTA = Knowledge Transfer Associate

KTA Practice Visits





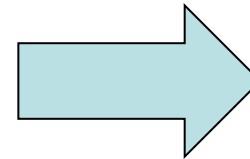
GM-HFIT (verification)

Q.1 Are primary care HF registers accurate?

Confirmed HF was taken as diagnosis by Echo or specialist clinician

Each patient record on the HF register was manually audited by a HFSN to identify if patients were either :

- *Appropriate*
- *Inappropriate*
- *Required further investigation*

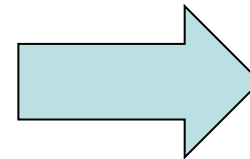


A rationale and management recommendations are made

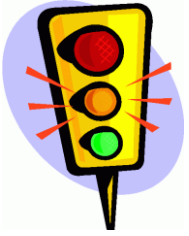
Q.2 How are HF patients managed in primary care?

All practices are assessed via a number of key performance indicators (KPI), developed in correlation with guidance from :

- *NICE*
- *European Society of Cardiology (ESC)*
- *American Heart Association (AHA)*



A score based Traffic Light Assessment



GM-HFIT (verification): Traffic Light Score

Audit data	<20%	20-39%	40-59%	60-79%	>=80%
Diagnosis confirmed using echocardiogram	0	1	2	3	4
Aetiology investigated / confirmed	0	1	2	3	4
Functional capacity assessed/ severity using NYHA	0	1	2	3	4
Heart failure review	0	1	2	3	4
Weight done at review	0	1	2	3	4
Ankle oedema checked	0	1	2	3	4
BP recorded	0	1	2	3	4
Pulse rate checked	0	1	2	3	4
Pulse rhythm checked	0	1	2	3	4
Has an ECG been performed	0	1	2	3	4
ACE use or contraindicated in LVSD patients	0	1	2	3	4
Treated to target dose of ACEI or ARB*	0	1	2	3	4
Beta blocker use or contraindicated in LVSD patients	0	1	2	3	4
Treated to target dose of BB*	0	1	2	3	4
Screening for depression	0	1	2	3	4
Smoking status checked	0	1	2	3	4
Alcohol intake checked	0	1	2	3	4
Nutritional information given	0	1	2	3	4
Flu vaccine given	0	0.5	1	1.5	2
Pneumococcal vaccine given	0	0.5	1	1.5	2
Self care/ education material given	0	1	2	3	4
Total Score					

Total Score is out of 80

Gold (> 76)

Providing outstanding quality of care

Green (50-76)

Providing a very high quality of care

Amber (25-49)

Providing good care but you need to improve on certain areas

Red (< 25)

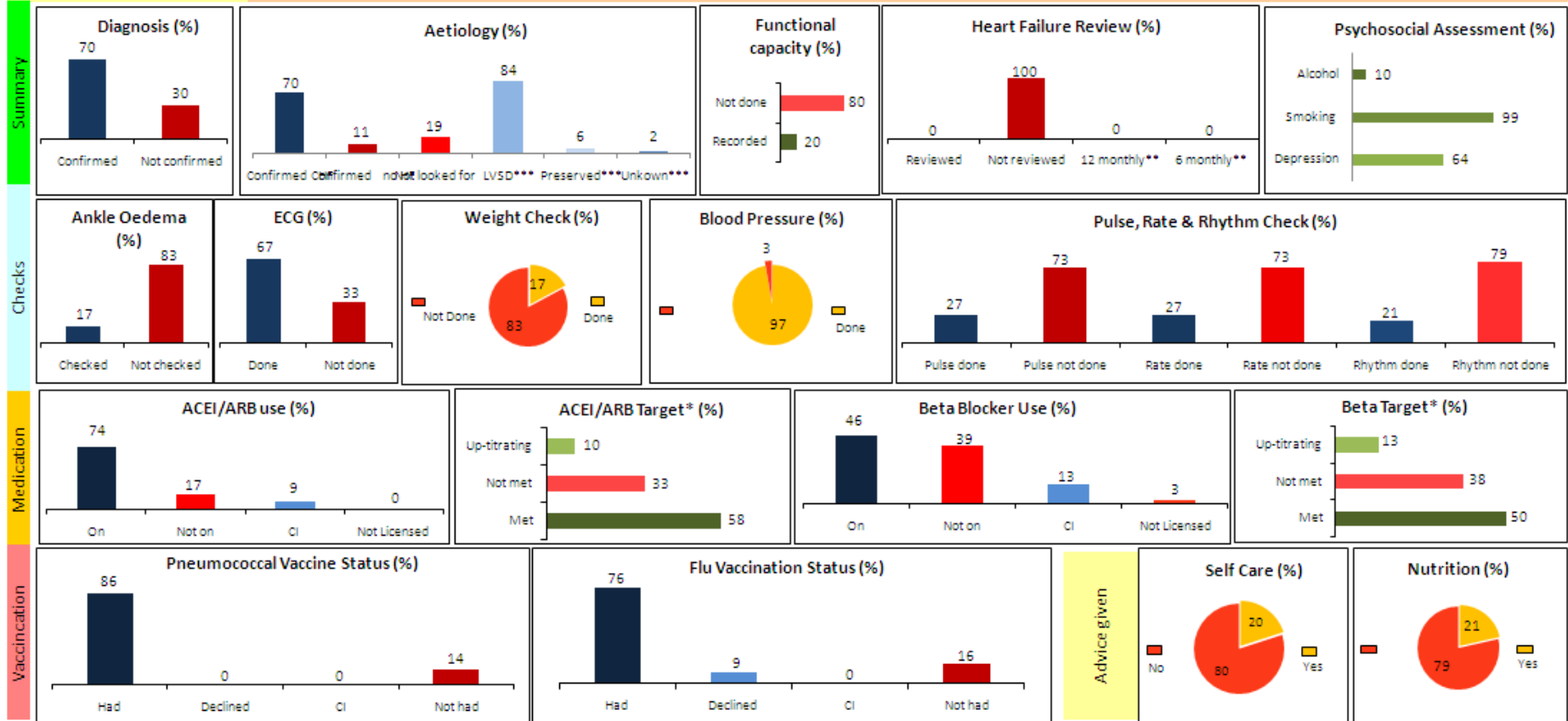
You are falling short and need to make major improvements



GM-HFIT (verification): Data Dashboard

Audit Dashboard

Total pts audited **70** Pts under secondary care = **12** % pts under secondary care **17%** Pts for further investigation = **11** Pts inappropriate = **11**



* of patients who are on that medication ** of patients who've had a heart failure review *** of patients with confirmed aetiology



GM-HFIT (verification): Management Recommendations

Register Verification

Pts Appropriate = 47

Pts for Further Investigation = 14

Pts Inappropriate = 9

Patient No.	HF Register	Refer for ECHO	Rationale	Recommendation 1.	Recommendation 2.	HF Review	Read Code
x	Appropriate	No ECHO required	The patient has a dilated cardiomyopathy, with an ejection fraction of 15% as per cardiologist's letter.	Please investigate why the patient is not on an ACE inhibitor.	0	Patient requires 6 month primary care HF review (code 662p)	1st - G58 2nd - G5yy9 3rd - 662p
x	Appropriate	No ECHO required	ECHO (2004) illustrates the patient has LVSD with ejection fraction of 30%	Patient is currently on FELODIPINE, this isn't licensed for HF. Only AMLODIPINE is licensed for LVSD patients	0	Patient requires 6 month primary care HF review (code 662p)	1st - G58 2nd - G5yy9 3rd - 662p
x	Appropriate	No ECHO required	Patient has an ejection fraction of 25 - 30% as confirmed by secondary care cardiologist and	0	0	Patient requires 6 month primary care HF review	1st - G58 2nd - G5yy9



GM-HFIT (case finding)

Q.3 Are there any diagnosed HF patients not currently on HF registers

19 discrete searches have been developed which are intended to identify patients that have HF, but are currently not on the HF QOF register. The searches are based around a combination of :

- *Medication*
- *Associated diseases (Angina, CHD, AF etc...)*
- *Inappropriate clinical coding*



All patients identified within the searches, were reviewed manually by a HFSN



One of the following was suggested :

- *Add to HF register*
- *Refer for ECHO*
- *Request ECHO report*
- *GP to review*
- *Refer to specialist*
- *No action*



GM-HFIT (case finding) Search Criteria

Search No.	Search Criteria
1	Spironolactone BUT not on HF register
2	Eplerenone BUT not on HF register
3	Metolazone BUT not on HF register
4	ECHO on CHD Register BUT not on HF register
5	ECG abnormal and left bundle branch block, on CHD Register BUT not on HF register
6	Angina & ECHO BUT not on HF register
7	Previous MI & ECHO BUT not on HF register
8	Atrial fibrillation, Atrial flutter & ECHO BUT not on HF register
9	Cardiomyopathy BUT not on HF register
10	ECHO shows LVSD BUT not on HF register
11	Suspected heart failure BUT not on HF register
12	LVSD BUT not on HF register
13	Impaired left ventricular function BUT not on HF register
14	ECHO shows diastolic dysfunction BUT not on HF register
15	ECHO abnormal BUT not on HF register
16	Bi ventricular pacemaker BUT not on HF register
17	NYHA classification BUT not on HF register
18	History of heart failure BUT not on HF register
19	Cardiomegaly & ECHO BUT not on HF register



GM-HFIT (case finding) Overview Display

GM-HFIT Search Results:

Total Found = **335** Total to Add = **46** Total for ECHO = **12** ECHO reports = **11** Total for Specialist = **4** Total for GP = **15**

* All patients should be reviewed by a GP before being added to the HF register

Search Number	Search Mechanism	Read Codes	Number of Patients found	No. to Add to HF Register *	No. to Refer for ECHO	No. of ECHO Reports Requested	No. to Refer for Specialist Opinion	No. Needing GP Review	Complete
1	Spirololactone but not on HF register		9	3	3	0	0	0	<input type="button" value="Add to Register"/> <input type="button" value="Refer for ECHO"/> <input type="button" value="Refer Sepcialist"/> <input type="button" value="GP Review"/>
2	Eplerenone but not on HF register		1	1	0	0	0	0	<input type="button" value="Add to Register"/> <input type="button" value="Refer for ECHO"/> <input type="button" value="Refer Sepcialist"/> <input type="button" value="GP Review"/>
3	Metolazone but not on HF register		1	0	0	0	0	0	<input type="button" value="Add to Register"/> <input type="button" value="Refer for ECHO"/> <input type="button" value="Refer Sepcialist"/> <input type="button" value="GP Review"/>
4	ECHO abnormal & LVSD on CHD Register but not on HF register	58531 G5yy9 33BA G58 6A2 662N	9	1	0	1	0	0	<input type="button" value="Add to Register"/> <input type="button" value="Refer for ECHO"/> <input type="button" value="Refer Sepcialist"/> <input type="button" value="GP Review"/>



GM-HFIT (case finding) Management Recommendations

Search 2: Eplerenone but not on HF register

Patient No.	D.O.B & Gender	Signs & Symptoms	Risk Factors	Comments	Actions	Medication	Read C
x	x	PND	Hypertension; Ex - smoker; CHD	ECHO (Nov 09) shows poor LV function and severe mitral regurgitation considering mitral valve repair and CABG - Dr Atkinson	Add to HF Register	On ACE and BB licenced for LVSD. BB optimised	1st - G5 2nd - G5 3rd - 66

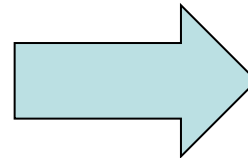


Heart Failure Education Sessions

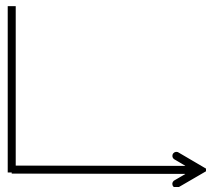
Q.4 Why aren't all heart failure patients managed in accordance to guidelines

A practice nurse / health care assistant and GP from every practice was invited to a small interactive education session, delivered by local HFSNs. The education included information on:

- *Brain Natriuretic Peptide (BNP)*
- *Diagnosis*
- *Treatment and management*
- *Palliative care*



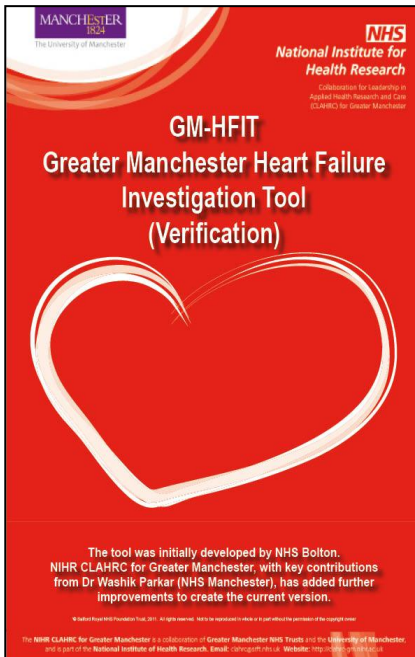
case study approach



There were questions I wasn't sure about and issues that I wasn't sure about. But this has helped to clarify it. (GP)

feedback Feedback sessions

Q.4 Can we improve the current level of HF management in primary care



All practices were provided with a **‘Development Pack’** containing the data from GM-HFIT (verification) and GM-HFIT (case finding).

The development pack was also a reference resource for practices, to aid their HF patient management. It included:

- *Local and National guidelines*
- *GMCCSN ‘Pathways for cardiology’ guidelines*
- *Lancs and Cumbria Cardiac and Stroke Network HF guide*
- *GM CLAHRC Read Code guide*
- *BHF patient information (books/DVDs/weight guides)*
- *British Society of Echocardiography guidance*
- *GM CLAHRC HF Review checklist*

Action plans were developed



GM-HFIT (verification)

Population Demographics

Variable	All Patients (n=469)	Seen only in primary care (n=357)	Under specialist care & primary care (n=112)	P Value
Mean Age (s.d.)	73.2 (14.4)	74 (14.4)	70 (13.7)	0.007
Female	45%	49%	32%	0.002
Male	55%	51%	68%	
LVSD	58%	47%	93%	<.001
Diabetes	32%	33%	27%	0.436
CKD	29%	28%	33%	0.308
Hypertension	64%	66%	59%	0.184
COPD	18%	18.2%	18%	0.933
IHD	46%	44.5%	52%	0.18
Previous MI	23%	21%	29.5%	0.064
AF	36%	37%	35%	0.68
Depression	10%	11%	9%	0.601

GM-HFIT (verification) Comorbidity



No. of Co-morbidities	No. of HF Patients	Percentage of HF Cohort (n=469)
0	20	4.3%
1	74	15.8%
2	127	27.1%
3	130	27.7%
4	83	17.7%
5	27	5.8%
6	5	1.1%
7	2	0.4%
8	1	0.2%

Complex patients to manage

This is consistent with latest data from the National Heart Failure Audit, which states that most HF patients have or have had hypertension, and that atrial fibrillation and renal dysfunction are precipitating factors of HF.



GM-HFIT (verification) Results

During the initial audit **478 patients** from **13 heart failure disease registers** were reviewed and verified by a HFSN. However re-audit data is only available from **10 practices**, as one locality wished to perform their own follow up.

GM-HFIT (verification)

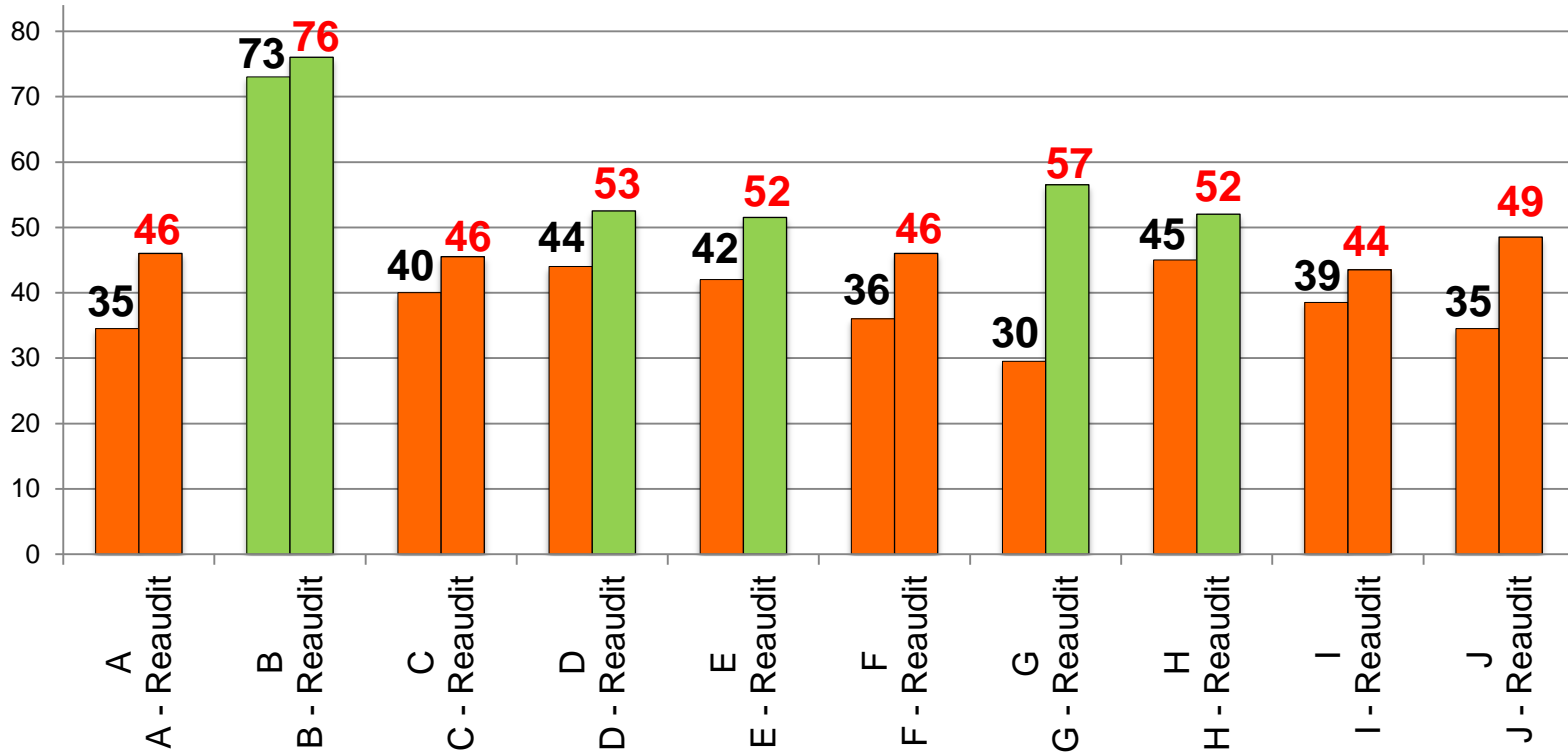
- **59.9% (n=181)** of patients were appropriately on the HF register
- **23.2% (n=109)** of patients required further investigation to confirm appropriateness
- **16.8% (n=79)** of patients were inappropriate



GM-HFIT (lite)

- **78.9% (n=259)** an **increase of 32.2%**
- **18.2% (n=60)**, a **decrease of 16%**
- **2.7% (n=9)**, a **decrease of 85.2%**

GM-HFIT (verification) Results – Traffic Light



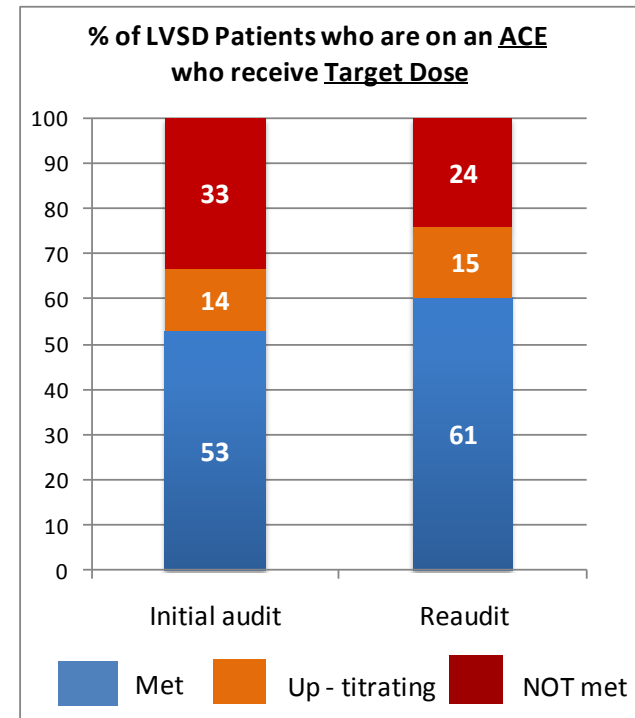
The mean Traffic Light score increase was 10 points, a 24% improvement



GM-HFIT (verification) Results – ACE Inhibitor

ACE-I use	Initial Audit (n=303)	Re-audit (n=328)	Percentage Change:
On	138 (45.54%)	195 (59.45%)	30.53% (increase)
Not on	11 (3.63%)	15 (4.57%)	25.97% (increase)
Contraindicated	13 (4.29%)	18 (5.49%)	27.91% (increase)
Not Licensed	7 (2.31%)	6 (1.83%)	20.82% (decrease)
N/A no LVSD	134 (44.22%)	94 (28.66%)	35.20% (decrease)

For those patients who are on an ACE

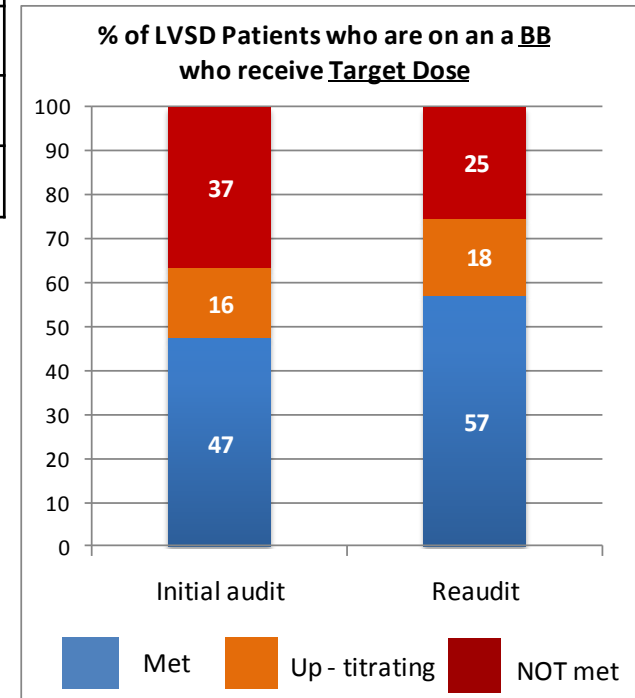




GM-HFIT (verification) Results – Beta Blocker

BB use	Initial Audit (n=303)	Re-audit (n=328)	Percentage Change
On	106 (34.98%)	155 (47.26%)	35.08% (increase)
Not on	37 (12.21%)	23 (7.01%)	42.58% (decrease)
Contraindicated	21 (6.93%)	45 (13.72%)	97.95% (increase)
Not Licensed	5 (1.65%)	10 (3.05%)	84.76% (increase)
N/A no LVSD	134 (44.22%)	95 (28.96%)	34.51% (decrease)

For those patients who are on a beta blocker

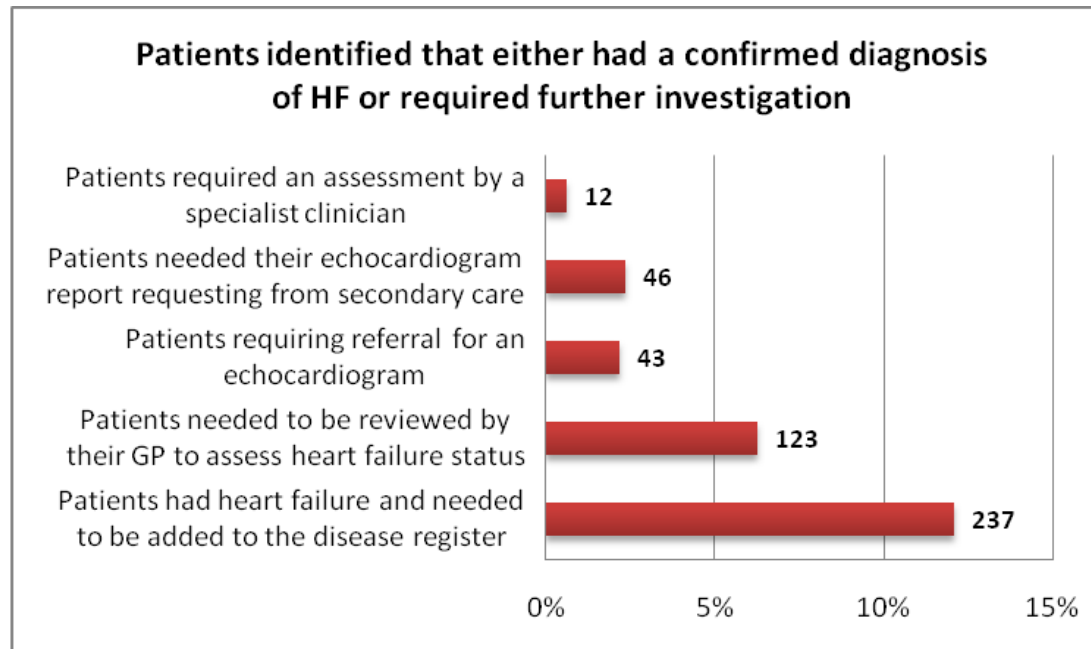




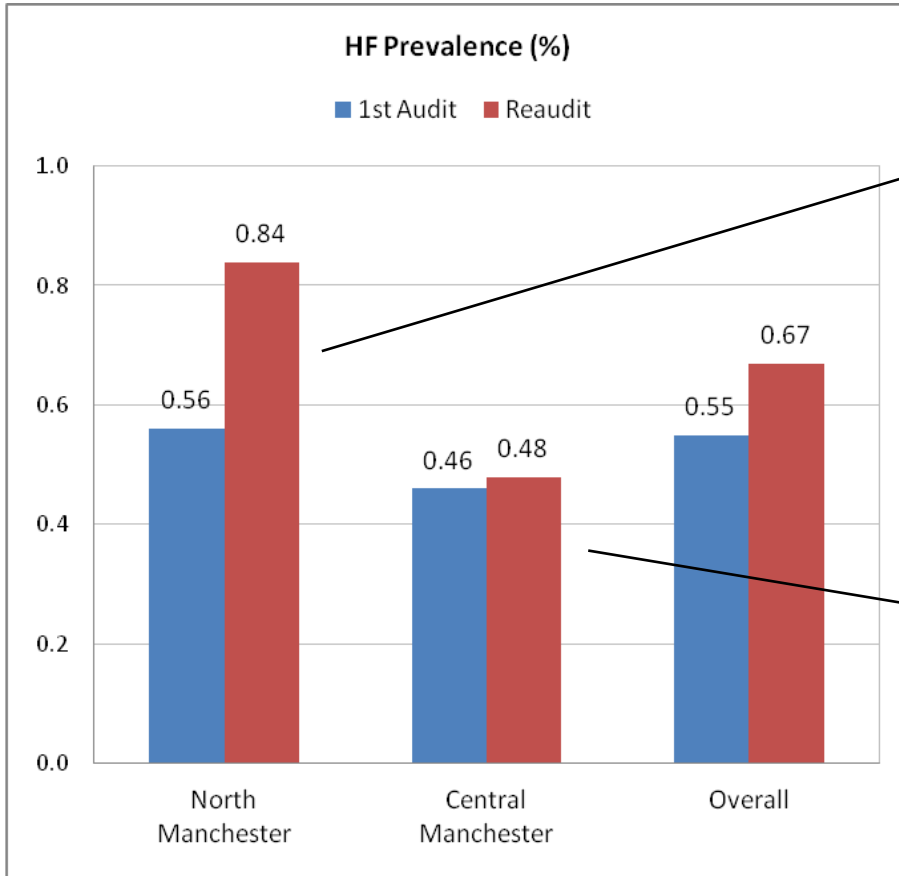
GM-HFIT (case finding) Initial Results

A total of **19 discrete searches** based on medication, echocardiography and associated diseases established **1962 patients to assess**.

The GM CLAHRC team assessed these patients via clinical records and found **461 'actions'**, these include :



GM-HFIT (case finding) Follow-up Results



Extra support was provided:

- (a) Coding training
- (b) One on one HF education
- (c) HF template design

PARiHS

Perhaps the results are due to:

- (a) Less time for follow up
- (b) Less facilitation
- (c) Less buy in



GM-HFIT Impact Quotes

“There are two circumstances that crop up. First will be pre-existing HF patients; they will be swept up by the health care assistants and they will do all their bloods and make them an appointment with us (GP) and our side of it is to optimise the drugs and make sure whatever should be done has been attempted...So where your work is most useful, particularly with the new patients, we have a model that we can follow and that we can draw from a resource. So it’s great” GP

“We have benefitted one hundred percent because our issue at the beginning was a read code problem so the project first of all identified it and then enabled us to put all read coding in place and then when you re-audited it showed that we had done it and had been missing things off and we have just continued to work on coding so yes it was good” PM

“The GM-HFIT project was a very useful exercise; it has made the clinical team much more aware of heart failure, in general, and the needs of the patient. Very interesting feedback was given by the GM CLAHRC project team, in an easy and understandable format.” PM



Moving Forward

Full evaluation report will be available in July 2012

GM-HFIT is currently working with over 20 practices in Bury

Due to be rolled out to practices in Ashton, Leigh & Wigan

All resources are available via our website

<http://clahrc-gm.nihr.ac.uk/>

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