

Supplement 1

Table S1: Read codes for identification of different heart failure phenotypes in Thin EHR

Non-specific heart failure codes

Readcode	READ TERM
G580.00	Congestive heart failure
G580.00	Left ventricular failure
G58..11	Cardiac failure
G58..00	Heart failure
G580.11	Congestive cardiac failure
G58z.00	Heart failure NOS
G581000	Acute left ventricular failure
1O1..00	Heart failure confirmed
G580200	Compensated cardiac failure
662T.00	Congestive heart failure monitoring
662g.00	New York Heart Association classification - class II
G58z.12	Cardiac failure NOS
9N2p.00	seen by community heart failure nurse
662h.00	New York Heart Association classification - class III
G232.00	hypertensive heart&renal dis wth (congestive) heart failure
G581.11	asthma - cardiac
G580000	Acute congestive heart failure
8B29.00	Cardiac failure therapy
8HHb.00	referral to heart failure nurse
G580200	Decompensated cardiac failure
G582.00	Acute heart failure
662W.00	Heart failure annual review
G580100	Chronic congestive heart failure
8H2S.00	admit heart failure emergency
9Or..00	Heart failure monitoring administration
8CL3.00	Heart failure care plan discussed with patient
ZRad.00	new york heart assoc classification heart failure symptoms
662i.00	New York Heart Association classification - class IV
G211100	benign hypertensive heart disease with ccf
G234.00	Hyperten heart&renal dis+both(congestv)heart and renal fail
67D4.00	Heart failure information given to patient
SP11111	Heart failure as a complication of care
9N6T.00	Referred by heart failure nurse specialist
8HHz.00	referral to heart failure exercise programme
8Hk0.00	Referred to heart failure education group
9Or4.00	heart failure monitoring second letter
G210100	malignant hypertensive heart disease with ccf
9Or3.00	Heart failure monitoring first letter

662p.00	Heart failure 6 month review
9Or5.00	Heart failure monitoring third letter
9Or2.00	heart failure monitoring verbal invite
9Or1.00	heart failure monitoring telephone invite
679X.00	Heart failure education
8CMK.00	Has heart failure management plan
8CeC.00	preferred place of care for next exacerbation heart failure
8CMW800	Heart failure clinical pathway
661M500	heart failure self-management plan agreed
1736.00	Paroxysmal nocturnal dyspnoea
G5yyA00	Left ventricular diastolic dysfunction
9N0k.00	Seen in heart failure clinic
14A6.00	h/o: heart failure
8HBE.00	Heart failure follow-up
14AM.00	H/O: Heart failure in last year
8HTL.00	Referral to heart failure clinic
G21z100	Hypertensive heart disease NOS with CCF
8HTL000	referral to rapid access heart failure clinic
2JZ..00	On optimal heart failure therapy
388D.00	New York Heart Assoc classification heart failure symptoms

Definite HFREF codes

MEDCODE	READ TERM
G581000	Acute left ventricular failure
33BA.00	Impaired left ventricular function
G5yy900	Left ventricular systolic dysfunction
G580.14	Biventricular failure
585f.00	Echocardiogram shows left ventricular systolic dysfunction
9On..00	Left ventricular dysfunction monitoring administration
G5yyD00	Left ventricular cardiac dysfunction
9On0.00	Left ventricular dysfunction monitoring first letter

Possible HFREF codes

MEDCODE	READ TERM
G55..00	Cardiomyopathy
G343.00	Ischaemic cardiomyopathy
G554400	Primary dilated cardiomyopathy
G55y.11	Secondary dilated cardiomyopathy
G55z.00	Cardiomyopathy NOS
G554z00	Other primary cardiomyopathy NOS
G55y.00	Secondary cardiomyopathy NOS
G558.00	Cardiomyopathy in disease EC
G555.00	Alcoholic cardiomyopathy
G558z00	Cardiomyopathy in diseases EC, NOS

G55A.00	Tachycardiomyopathy
G55A.11	Tachycardia-induced cardiomyopathy
12CJ.00FH	Cardiomyopathy
G554200	Familial Cardiomyopathy

HFpEF codes

MEDCODE	READ TERM
G583.11	HFNEF - heart failure with normal ejection fraction
G583.00	Heart failure with normal ejection fraction
G583.12	Heart failure with preserved ejection fraction
G5yyC00	Diastolic dysfunction
G5yyA00	Left ventricular diastolic dysfunction

Supplement 2: Questionnaire sent to general practitioner for the validation study

Please answer all the questions according to the information held in the patient's written records by ticking the appropriate box or writing in the space provided.

1. Do you think this patient has Heart failure with:-
 - Reduced Ejection Fraction (HFrEF) (Ejection Fraction $\leq 40\%$)**
 - Preserved Ejection Fraction (HFpEF) (Ejection Fraction $\geq 50\%$)**
 - Mid-range Ejection Fraction (HFmrEF) (Ejection Fraction 41-49 %)**
 - Unknown Ejection Fraction**
2. What was the diagnosis based on? (Please circle all that apply)
Echocardiogram Biomarkers Signs and Symptoms other
(please describe)
3. Has a cardiologist seen the patient and confirmed a diagnosis of HF?
 Yes No Uncertain
4. Does the patient have any other cardiac condition?
 Yes No Uncertain
If yes, please state
5. Was the patient hospitalised for heart failure (HF) at any point?
 Yes No Uncertain
6. Has the patient received intravenous diuretics as an outpatient or at home?
 Yes No
7. Will you be able to send copies of any relevant material, such as extracts from patient notes, echocardiogram, relevant lab tests (eg. BNP, NT-pro BNP) cardiology outpatient letters or hospital discharge letters?

Researcher's Ref:

We would appreciate receiving depersonalized copies of all relevant material, such as extracts from patient's notes or hospital discharge letters.