

Supplementary Table 2. Definition of FAMCAT equation variables

FAMCAT equation variable	Definition in the original FAMCAT paper	Our definition
Highest total cholesterol or LDL	Total cholesterol of LDL measured during the study period, if both available, priority given to LDL. If multiple measurements available, then the highest value at any point was taken.	Highest ever level cholesterol measurement, preference given to LDL over total cholesterol if both available.
Age during cholesterol measurement (years)		Age at time of “highest ever cholesterol”
Triglycerides during cholesterol measurements	Triglycerides measured at the same time as cholesterol measurement (elevated triglycerides are negative indicator of FH)	Triglyceride at time of highest ever cholesterol or within 5 years of this measurement, if missing then imputed from age and sex.
Lipid-lowering drug usage during cholesterol measurement	Classified patients into treated vs treated – If the most recent prescription for lipid-lowering therapy overlapped with the date of the cholesterol measurement or ended within 30days of the measurement, the patient was classed as <i>treated</i> Otherwise classed as <i>untreated</i> The potency of lipid-lowering therapy was classified in the treated group into low, medium, or high potency: Low: Fluvastatin or Pravastatin ≤ 40 mg/day; Simvastatin ≤ 10 mg/day. Medium: Fluvastatin or Pravastatin 80 mg/day; Simvastatin 20 mg/day or 40 mg/day; Atorvastatin ≤ 10 mg/day; Rosuvastatin 5 mg. High: Simvastatin 80 mg; Atorvastatin ≥ 20 mg/day; Rosuvastatin ≥ 10 mg/day.	“treated” if record of prescription for lipid lowering drugs in the 90 days prior to the “highest ever cholesterol”. Potency defined as per original paper.
Family history of FH	<i>If family history was not assessed, there was assumed to be no family history</i>	As per original definition
Family history of myocardial infarction	<i>If family history was not assessed, there was assumed to be no family history</i>	As per original definition
Family history of raised cholesterol	<i>If family history was not assessed, there was assumed to be no family history</i>	As per original definition
Diagnosis of diabetes		Defined using Read codes
Diagnosis of kidney disease		Defined using Read codes

Supplementary Table 2 footnote: eGFR: estimated glomerular filtration rate; FAMCAT: familial hypercholesterolaemia case ascertainment tool; FH: Familial hypercholesterolaemia; LDL: low density lipoprotein.

Supplementary Table 3. Predicted number of cases of Familial Hypercholesterolaemia assuming population prevalence of 1 in 500 and 1 in 250, calculated without imputations

	1/500		1/250	
	N	%	N	%
All patients	777,128		777,128	
Likely to have Familial Hypercholesterolemia	23,745	3.1	11,727	1.5
May Have Familial Hypercholesterolemia	74,667	9.6	36,185	4.7
Unlikely to have Familial Hypercholesterolemia	678,716	87.3	729,216	93.8
Patients with IHD	7,950		7,950	
Likely to have Familial Hypercholesterolemia	943	11.9	557	7.0
May Have Familial Hypercholesterolemia	1,833	23.1	1,249	15.7
Unlikely to have Familial Hypercholesterolemia	5,174	65.1	6,144	77.3
Patients without IHD	769,178		769,178	
Likely to have Familial Hypercholesterolemia	22,802	3.0	11,170	1.5
May Have Familial Hypercholesterolemia	72,834	9.5	34,936	4.5
Unlikely to have Familial Hypercholesterolemia	673,542	87.6	723,072	94.0

Supplementary Table 4. Predicted risk grouping using FAMCAT algorithm in patients coded as having Familial hypercholesterolaemia

	1/500		1/250	
	N	%	N	%
Patients coded as having Familial hypercholesterolaemia	16,573		16,573	
Likely to have Familial Hypercholesterolemia	4,013	24.2	2,276	13.7
May Have Familial Hypercholesterolemia	4,689	28.3	4,034	24.3
Unlikely to have Familial Hypercholesterolemia	7,871	47.5	10,263	61.9

