

QRISK2®

Cardiovascular Disease

Search Definition

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Algorithm Version 2.0

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Revision History

Revision date	Document Version	Summary of Changes
02 April 2008	V1.0	First issue
29 May 2008	V2.0	QRISK2 [®] definition
29 May 2008	V2.1	Simplified ethnicity to 16+1
22 June 2008	V2-2	First Published Version
05 July 2008	V2-3	Minor edits – removal of field corticosteroids; addition of field to denote current statin use
10 July 2008	V-4	Addition of general smoking status codes Addition of rules for handling out of range and missing BMI, cholesterol ratio and systolic blood pressure values.
27th July 2008	V2-5	Additional comment regarding DLL
02nd Sept 2008	V2-6	Removed statins field
06 Nov 2008	V2-7	Added detail on range for Townsend scores

Notes:

1. The version number in the above table and document name refers to the document version number.
2. The search definition itself relates to QRISK2[®] (ie version 2 of the QRISK algorithm as published in the British Medical Journal on 28th Jun 2008¹).
3. The latest version of this specification can be found at <http://www.qresearch.org/Public/griskgeneralinformation.aspx>
4. For the QRISK[®] web calculator see <http://www.qrisk.org>
5. For further information about QRISK2[®] <http://www.qresearch.org/Public/griskInformationforPatients.aspx>
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1 Purpose of this document

This document defines the search criteria needed to calculate a QRISK2[®] cardiovascular disease score¹ using data from general practice computer systems in the UK. It also gives details of the table structure required for the QRISK2[®] Batch Processor Utility (for further details of this, please email information@qrisk.org).

The variable definitions in this document are also useful for system suppliers who intend to use the QRISK CVD algorithm Dynamic Linked Libraries embedded within their own applications/software.

Once the individual patient level data have been extracted (eg by using MIQUEST from a GP clinical computer system) the resulting CSV file can be processed using the QRISK2[®] 'batch processor' to generate a QRISK2[®] score on every patient, using default values where patients do not have systolic blood pressure, body mass index or cholesterol recorded for an average person of the same age and sex.

2 Search definition

The next section defines the patient inclusion criteria, the input parameters and their definitions.

2.1 Patient inclusion criteria

The current QRISK2[®] CVD risk algorithm should be applied to patients who meet all of the following criteria.

- Currently registered on the search date
- Aged between 35 and 74 inclusive on the search date
- Free from a diagnosis of cardiovascular disease (read code group 411) prior to the search date

2.2 Ethnicity

Ethnicity is included as a variable in QRISK2[®]. The data entry on a template for a patient in the surgery setting should use the NHS standard 16+1 categories for ethnicity although the QRISK2[®] algorithm currently involved 9 categories (some have been combined due to small numbers)

For the data extraction, all the relevant read terms for ethnicity which have been recorded on the system should be included in the search regardless of whether 1991 Read codes or 2001 Read codes. The read terms are mapped to the 16+1 categories so, you need to use the mapping table (QRISK2[®] ethnic mapping table.csv) which maps read term to 16+1 categories for the data extraction for the population search.

2.3 Missing values and ‘out of range’ data

- We expect that only 30% of patients with data on GP clinical computer systems will have complete data for all the clinical values needed to generate an actual QRISK2 score.
- For patients with complete data the QRISK2 batch processor will generate an actual QRISK2 score.
- For patients where one or more item is missing the QRISK2 will generate an estimated score.

The assumptions regarding missing data as follows

- If the patient does not have a recorded family history of premature coronary heart disease in a first degree relative under the age of 60 they are assumed not to have a family history. This should be coded in the input file (ie the batch processor does not code missing values as zero)
- Patients who do not have smoking status recorded are assumed to be non smokers. This should be coded in the input file (ie the batch processor does not code missing values as zero)
- Patients who have a postcode which is not mapped to a postcode are assumed to have a Townsend score of zero (this is the mean value of Townsend score nationally). If the postcode is not known then the cell should be left blank and the batch processor will substitute a zero.
- If the patient does not have a recorded value for body mass index, systolic blood pressure, or cholesterol ratio, then the batch processor (and DLL) will use a default value from an in built reference table for the single year of age and sex. These values have been derived from the QResearch database (version 19, 2008).

The following rules are applied to data which are ‘out of range’ or which are missing. The values are approximately equal to the 1st and 99th centile of values derived from the population of patients on the QResearch database.

Table 1: rules for out of range clinical values

	Acceptable/Credible Range	Action if values outside of credible range
Systolic blood pressure (mm Hg)	70 to 210	<70 is set to 70 >210 is set to 210
Body mass index (kg/m ²)	15 to 50	<15 is set to 15 >50 is set to 50
Cholesterol/HDL ratio	1 to 12	<1 is set to 1 >12 is set to 12

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Valid Townsend scores range between -7.0 and + 12.0

2.4 Input parameters

- Table 2 defines the input parameters needed to calculate the QRISK2[®] cardiovascular disease risk score and the table structure needed for the QRISK2[®] Batch processor.
- The input table needs to contain one row per record with each field separated by a comma (comma separated file).
- The table needs to follow this exact format including order of the column, field types, field names.
- The Read code group ID refers to the identity of the cluster of read codes used in the search definition. The contents of each read code cluster can be found in the appendix (see section 4, page 4).

Table 2: Input parameters needed to calculate a QRISK2[®] CVD score

Full Field name	Data Type	English description	Read group ID	Coding of variable
row_id	Integer	Unique row identifier	n/a	n/a
Age	Integer	Patients age in years calculated on the search date	n/a	n/a
Sex	Integer	Patients sex	n/a	1=males 0 = females
ethnicity	Integer	Ethnic group	409/411	0 =not recorded 1 =British 2 =Irish 3 =Other White Background 4 =White & Black Caribbean 5 =White & Black African 6 =White & Asian 7 =other mixed 8 =Indian 9 =Pakistani 10= Bangladeshi 11 =Other Asian 12 =Caribbean 13 =Black African 14 =Other Black

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				15 =Chinese 16 Other ethnic group 17 Not stated
rheumatoid_arthritis	Boolean	Rheumatoid arthritis at any time prior to the search date	68	1 = yes, 0 = no
atrial_fibrillation	Boolean	Atrial fibrillation at any time prior to the search date	24	1 = yes, 0 = no
chronic_renal_disease	Boolean	Chronic renal disease at any time prior to the search date	322	1 = yes, 0 = no
diabetes_diagnosed	Boolean	Binary variable to denote diagnosis of diabetes diagnosed at any time prior to the search date and recorded in the patients record	23	1 = yes, 0 = no
history_of_cvd	Boolean	Binary variable to denote diagnosis of CVD recorded at any time prior to the search date	411	1 = yes, 0 = no
current_smoker	Boolean	Most recently recorded smoking status prior to the search date. Ex smokers are assumed to be non smokers.	3 (smoking status) 4 (smoker)	1 = smoker 0= non smoker Null if missing
family_history_of_cvd	Boolean	Family history of coronary heart disease in a first degree relative under the age of 60 years recorded before the search date	404	1 = yes, 0 = no
townsend_score	Double (nullable)	The Townsend score associated with the output area of a patient's postcode based on the 2001 census data.	n/a	n/a
postcode	String	Patient's postcode. This can be missing if Townsend score is	n/a	n/a

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		supplied.		
body_mass_index	Double (nullable)	The most recently recorded body mass index for the patient recorded prior to the search date recorded in the last 5 years.	200	n/a
cholesterol_hdl_ratio	Double (nullable)	The most recent ratio of total serum cholesterol/HDL recorded in the last 5 years. The ratio is either directly recorded (eg using group 405) or can be calculated using group 16 divided by group 367	16,367,405	n/a
systolic_blood_pressure	Integer (nullable)	The most recent systolic blood pressure prior to search date recorded in the last 5 years	198	n/a
treated_hypertension	Integer	Read coded diagnosis of hypertension at any time in the patients records AND On antihypertensive treatment if 1+ script in last 6 months prior to the search date. Antihypertensive treatment includes Beta blockers, ACE inhibitors, Thiazides, Calcium Channel Blockers. Patients should only be included if both criteria are satisfied ie on treatment and have a diagnosis f hypertension	Use BNF groups	1 = yes, 0 = no

4 Readcode groups for QRISK2 search

Table 3 Hypertension (group 21)

21	G2	Hypertensive disease
21	G20	Essential hypertension
21	G20-1	High blood pressure
21	G200	Malignant essential hypertension
21	G200-99	Malignant hypertension
21	G201	Benign essential hypertension
21	G202	Systolic hypertension
21	G20z	Essential hypertension NOS
21	G20z-1	Hypertension NOS
21	G24	Secondary hypertension
21	G240	Secondary malignant hypertension
21	G2400	Secondary malignant renovascular hypertension
21	G240z	Secondary malignant hypertension NOS
21	G241	Secondary benign hypertension
21	G2410	Secondary benign renovascular hypertension
21	G241z	Secondary benign hypertension NOS
21	G244	Hypertension secondary to endocrine disorders
21	G24z	Secondary hypertension NOS
21	G24z0	Secondary renovascular hypertension NOS
21	G24z1	Hypertension secondary to drug
21	G24zz	Secondary hypertension NOS
21	G2y	Other specified hypertensive disease
21	G2z	Hypertensive disease NOS

Table 4 Atrial Fibrillation (group 24)

24	G573	Atrial fibrillation and flutter
24	G5730	Atrial fibrillation
24	G5731	Atrial flutter
24	G5732	Paroxysmal atrial fibrillation
24	G5733	Non-rheumatic atrial fibrillation
24	G573z	Atrial fibrillation and flutter NOS

Table 5 Rheumatoid arthritis (group 68)

68	N04	Rheumatoid arthritis and other inflammatory polyarthropathy
68	N04-1	Inflammatory polyarthropathy
68	N040	Rheumatoid arthritis
68	N040-90	Rheumatoid arthritis NOS
68	N040-91	Rheum. arth. - other joint
68	N040-92	Rheum. arth. - ankle/foot
68	N040-93	Rheum. arth. - knee joint
68	N040-94	Rheum. arth. - hip joint
68	N040-95	Rheum. arth. - hand joint
68	N040-96	Rheum. arth. - wrist joint
68	N040-97	Rheum. arth. - elbow joint
68	N040-98	Rheum. arth. - shoulder joint
68	N040-99	Rheum. arth. - multiple joint
68	N0400	Rheumatoid arthritis of cervical spine
68	N0401	Other rheumatoid arthritis of spine
68	N0402	Rheumatoid arthritis of shoulder
68	N0403	Rheumatoid arthritis of sternoclavicular joint
68	N0404	Rheumatoid arthritis of acromioclavicular joint
68	N0405	Rheumatoid arthritis of elbow
68	N0406	Rheumatoid arthritis of distal radio-ulnar joint
68	N0407	Rheumatoid arthritis of wrist
68	N0407-99	Rheum. arth. - wrist joint
68	N0408	Rheumatoid arthritis of MCP joint
68	N0408-99	Rheum. arth. - hand joint
68	N0409	Rheumatoid arthritis of PIP joint of finger
68	N040A	Rheumatoid arthritis of DIP joint of finger
68	N040B	Rheumatoid arthritis of hip
68	N040B-99	Rheum. arth. - hip joint
68	N040C	Rheumatoid arthritis of sacro-iliac joint
68	N040D	Rheumatoid arthritis of knee
68	N040D-99	Rheum. arth. - knee joint
68	N040E	Rheumatoid arthritis of tibio-fibular joint
68	N040F	Rheumatoid arthritis of ankle
68	N040F-99	Rheum. arth. - ankle/foot
68	N040G	Rheumatoid arthritis of subtalar joint
68	N040H	Rheumatoid arthritis of talonavicular joint
68	N040J	Rheumatoid arthritis of other tarsal joint
68	N040K	Rheumatoid arthritis of 1st MTP joint
68	N040L	Rheumatoid arthritis of lesser MTP joint
68	N040M	Rheumatoid arthritis of IP joint of toe
68	N040N	Rheumatoid vasculitis
68	N040P	Seronegative rheumatoid arthritis
68	N040Q	Rheumatoid bursitis
68	N040R	Rheumatoid nodule
68	N040S	Rheumatoid arthritis - multiple joint
68	N040T	Flare of rheumatoid arthritis

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68	N041	Felty's syndrome
68	N042	Other rheumatoid arthropathy + visceral/systemic involvement
68	N0420	Rheumatic carditis
68	N0420-99	Acute/subacute carditis
68	N0421	Rheumatoid lung disease
68	N0422	Rheumatoid nodule
68	N042z	Rheumatoid arthropathy + visceral/systemic involvement NOS
68	N043	Juvenile rheumatoid arthritis - Still's disease
68	N043-99	Still's disease - juvenile R.A
68	N0430	Juvenile rheumatoid arthropathy unspecified
68	N0431	Acute polyarticular juvenile rheumatoid arthritis
68	N0432	Pauciarticular juvenile rheumatoid arthritis
68	N0433	Monarticular juvenile rheumatoid arthritis
68	N043z	Juvenile rheumatoid arthritis NOS
68	N044	Chronic post-rheumatic arthropathy
68	N044-1	Jaccoud's syndrome
68	N044-2	Nodular fibrositis of chronic rheumatic disease
68	N045	Other juvenile arthritis
68	N0450	Juvenile ankylosing spondylitis
68	N0451	Juvenile seronegative polyarthritis
68	N0452	Juvenile arthritis in psoriasis
68	N0453	Juvenile arthritis in Crohn's disease
68	N0454	Juvenile arthritis in ulcerative colitis
68	N0455	Juvenile rheumatoid arthritis
68	N0456	Pauciarticular onset juvenile chronic arthritis
68	N047	Seropositive erosive rheumatoid arthritis
68	N04X	Seropositive rheumatoid arthritis, unspecified
68	N04y	Other specified inflammatory polyarthropathy
68	N04y0	Rheumatoid lung
68	N04y0-1	Caplan's syndrome
68	N04y0-2	Fibrosing alveolitis associated with rheumatoid arthritis
68	N04y1	Sero negative arthritis
68	N04y1-1	Sero negative polyarthritis
68	N04y2	Adult-onset Still's disease
68	N04yz	Other specified inflammatory polyarthropathy NOS
68	N04z	Inflammatory polyarthropathy NOS
68	N04z-99	Polyarthropathy NOS -inflammat

Table 6 Chronic kidney disease (group 322)

322	7B063	Exploration of renal transplant
322	8L50	Renal transplant planned
322	K01	Nephrotic syndrome
322	K010	Nephrotic syndrome with proliferative glomerulonephritis
322	K011	Nephrotic syndrome with membranous glomerulonephritis
322	K012	Nephrotic syndrome+membranoproliferative glomerulonephritis
322	K013	Nephrotic syndrome with minimal change glomerulonephritis
322	K013-1	Lipoid nephrosis

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322	K013-2	Steroid sensitive nephrotic syndrome
322	K014	Nephrotic syndrome, minor glomerular abnormality
322	K015	Nephrotic syndrome, focal and segmental glomerular lesions
322	K016	Nephrotic syndrome, diffuse membranous glomerulonephritis
322	K017	Nephrotic syn difus mesangial proliferativ glomerulonephritis
322	K018	Nephrotic syn,difus endocapillary prolifitv glomerulonephritis
322	K019	Nephrotic syn,diffuse mesangiocapillary glomerulonephritis
322	K01A	Nephrotic syndrome, dense deposit disease
322	K01B	Nephrotic syndrome, diffuse crescentic glomerulonephritis
322	K01w	Congenital nephrotic syndrome
322	K01w0	Finnish nephrosis syndrome
322	K01w0-1	Microcystic type congenital nephrotic syndrome
322	K01wz	Congenital nephrotic syndrome NOS
322	K01x	Nephrotic syndrome in diseases EC
322	K01x0	Nephrotic syndrome in amyloidosis
322	K01x1	Nephrotic syndrome in diabetes mellitus
322	K01x1-1	Kimmelstiel - Wilson disease
322	K01x2	Nephrotic syndrome in malaria
322	K01x3	Nephrotic syndrome in polyarteritis nodosa
322	K01x4	Nephrotic syndrome in systemic lupus erythematosus
322	K01x4-1	Lupus nephritis
322	K01xz	Nephrotic syndrome in diseases EC NOS
322	K01y	Nephrotic syndrome with other pathological kidney lesions
322	K01z	Nephrotic syndrome NOS
322	K02	Chronic glomerulonephritis
322	K02-1	Nephritis - chronic
322	K02-2	Nephropathy - chronic
322	K020	Chronic proliferative glomerulonephritis
322	K021	Chronic membranous glomerulonephritis
322	K022	Chronic membranoproliferative glomerulonephritis
322	K023	Chronic rapidly progressive glomerulonephritis
322	K02y	Other chronic glomerulonephritis
322	K02y0	Chronic glomerulonephritis + diseases EC
322	K02y1	Chronic exudative glomerulonephritis
322	K02y2	Chronic focal glomerulonephritis
322	K02y3	Chronic diffuse glomerulonephritis
322	K02yz	Other chronic glomerulonephritis NOS
322	K02z	Chronic glomerulonephritis NOS
322	K05	Chronic renal failure
322	K05-1	Chronic uraemia
322	K05-2	End stage renal failure
322	K050	End stage renal failure
322	K100	Chronic pyelonephritis
322	K1000	Chronic pyelonephritis without medullary necrosis
322	K1001	Chronic pyelonephritis with medullary necrosis
322	K1002	Chronic pyelitis
322	K1003	Chronic pyonephrosis
322	K1004	Nonobstructive reflux-associated chronic pyelonephritis

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322	K1005	Chronic obstructive pyelonephritis
322	K1006	Calculous pyelonephritis
322	K100z	Chronic pyelonephritis NOS
322	SP083	Kidney transplant failure and rejection
322	TB001	Kidney transplant with complication, without blame
322	TB001-1	Renal transplant with complication, without blame
322	ZV420	[V]Kidney transplanted

Table 7 ethnicity (1991 and 2001 codes)

ID	readterm_id	description	ethnic16
409	9S10	White British	British
410	9i0	British or mixed British - ethnic category 2001 census	British
409	9S11	White Irish	Irish
409	9SA9	Irish (NMO)	Irish
409	9SI	Irish traveller	Irish
410	9i1	Irish - ethnic category 2001 census	Irish
410	9i24	Northern Irish - ethnic category 2001 census	Irish
410	9i2C	Irish Traveller - ethnic category 2001 census	Irish
409	9S1	White	Other White Background
409	9S12	Other white ethnic group	Other White Background
409	9S13	White Scottish	Other White Background
409	9S14	Other white British ethnic group	Other White Background
409	9SAA	Greek/Greek Cypriot (NMO)	Other White Background
409	9SAA-1	Greek (NMO)	Other White Background
409	9SAA-2	Greek Cypriot (NMO)	Other White Background
409	9SAB	Turkish/Turkish Cypriot (NMO)	Other White Background
409	9SAB-1	Turkish (NMO)	Other White Background
409	9SAB-2	Turkish Cypriot (NMO)	Other White Background
409	9SAC	Other European (NMO)	Other White Background
409	9SAD	Other ethnic NEC (NMO)	Other White Background
410	9i2	Other White background - ethnic category 2001 census	Other White Background
410	9i20	English - ethnic category 2001 census	Other White Background
410	9i21	Scottish - ethnic category 2001 census	Other White Background
410	9i22	Welsh - ethnic category 2001 census	Other White Background
410	9i23	Cornish - ethnic category 2001 census	Other White Background
410	9i25	Ulster Scots - ethnic category 2001 census	Other White Background
410	9i26	Cypriot (part not stated) - ethnic category 2001 census	Other White Background
410	9i27	Greek - ethnic category 2001 census	Other White Background
410	9i28	Greek Cypriot - ethnic category 2001 census	Other White Background
410	9i29	Turkish - ethnic category 2001 census	Other White Background
410	9i2A	Turkish Cypriot - ethnic category 2001 census	Other White Background

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410	9i2B	Italian - ethnic category 2001 census	Other White Background
410	9i2D	Traveller - ethnic category 2001 census	Other White Background
410	9i2E	Gypsy/Romany - ethnic category 2001 census	Other White Background
410	9i2F	Polish - ethnic category 2001 census	Other White Background
410	9i2G	Baltic Estonian/Latvian/Lithuanian - ethn categ 2001 census	Other White Background
410	9i2H	Commonwealth (Russian) Indep States - ethn categ 2001 census	Other White Background
410	9i2J	Kosovan - ethnic category 2001 census	Other White Background
410	9i2K	Albanian - ethnic category 2001 census	Other White Background
410	9i2L	Bosnian - ethnic category 2001 census	Other White Background
410	9i2M	Croatian - ethnic category 2001 census	Other White Background
410	9i2N	Serbian - ethnic category 2001 census	Other White Background
410	9i2P	Other republics former Yugoslavia - ethnic categ 2001 census	Other White Background
410	9i2Q	Mixed Irish and other White - ethnic category 2001 census	Other White Background
410	9i2R	Oth White European/European unsp/Mixed European 2001 census	Other White Background
410	9i2S	Other mixed White - ethnic category 2001 census	Other White Background
410	9i2T	Other White or White unspecified ethnic category 2001 census	Other White Background
409	9SB5	Black Caribbean and White	White & Black Caribbean
410	9i3	White and Black Caribbean - ethnic category 2001 census	White & Black Caribbean
409	9SB6	Black African and White	White & Black African
410	9i4	White and Black African - ethnic category 2001 census	White & Black African
409	9SB2	Other ethnic, Asian/White orig	White & Asian
410	9i5	White and Asian - ethnic category 2001 census	White & Asian
409	9S5	Black - other, mixed	Other mixed
409	9S51	Other Black - Black/White orig	Other mixed
409	9S52	Other Black - Black/Asian orig	Other mixed
409	9SB	Other ethnic, mixed origin	Other mixed
409	9SB1	Other ethnic, Black/White orig	Other mixed
409	9SB3	Other ethnic, mixed white orig	Other mixed
409	9SB4	Other ethnic, other mixed orig	Other mixed
410	9i6	Other Mixed background - ethnic category 2001 census	Other mixed
410	9i60	Black and Asian - ethnic category 2001 census	Other mixed
410	9i61	Black and Chinese - ethnic category 2001 census	Other mixed
410	9i62	Black and White - ethnic category 2001 census	Other mixed
410	9i63	Chinese and White - ethnic category 2001 census	Other mixed
410	9i64	Asian and Chinese - ethnic category 2001 census	Other mixed
410	9i65	Other Mixed or Mixed unspecified ethnic	Other mixed

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		category 2001 census	
409	9S6	Indian	Indian
409	9SA7	Indian sub-continent (NMO)	Indian
410	9i7	Indian or British Indian - ethnic category 2001 census	Indian
409	9S7	Pakistani	Pakistani
410	9i8	Pakistani or British Pakistani - ethnic category 2001 census	Pakistani
409	9S8	Bangladeshi	Bangladeshi
410	9i9	Bangladeshi or British Bangladeshi - ethn categ 2001 census	Bangladeshi
409	9SA6	E Afric Asian/Indo-Carib (NMO)	Other Asian
409	9SA6-1	East African Asian (NMO)	Other Asian
409	9SA6-2	Indo-Caribbean (NMO)	Other Asian
409	9SA8	Other Asian (NMO)	Other Asian
409	9SH	Other Asian ethnic group	Other Asian
410	9iA	Other Asian background - ethnic category 2001 census	Other Asian
410	9iA1	Punjabi - ethnic category 2001 census	Other Asian
410	9iA2	Kashmiri - ethnic category 2001 census	Other Asian
410	9iA3	East African Asian - ethnic category 2001 census	Other Asian
410	9iA4	Sri Lankan - ethnic category 2001 census	Other Asian
410	9iA5	Tamil - ethnic category 2001 census	Other Asian
410	9iA6	Sinhalese - ethnic category 2001 census	Other Asian
410	9iA7	Caribbean Asian - ethnic category 2001 census	Other Asian
410	9iA8	British Asian - ethnic category 2001 census	Other Asian
410	9iA9	Mixed Asian - ethnic category 2001 census	Other Asian
410	9iAA	Other Asian or Asian unspecified ethnic category 2001 census	Other Asian
409	9S2	Black Caribbean	Caribbean
409	9S42	Black Caribbean/W.I./Guyana	Caribbean
409	9S42-1	Black Caribbean	Caribbean
409	9S42-2	Black West Indian	Caribbean
409	9S42-3	Black Guyana	Caribbean
409	9SA3	Caribbean I./W.I./Guyana (NMO)	Caribbean
409	9SA3-1	Caribbean Island (NMO)	Caribbean
409	9SA3-2	West Indian (NMO)	Caribbean
409	9SA3-3	Guyana (NMO)	Caribbean
410	9iB	Caribbean - ethnic category 2001 census	Caribbean
409	9S3	Black African	Black African
409	9S43	Black N African/Arab/Iranian	Black African
409	9S43-1	Black North African	Black African
409	9S43-2	Black Arab	Black African
409	9S43-3	Black Iranian	Black African

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409	9S44	Black - other African country	Black African
410	9iC	African - ethnic category 2001 census	Black African
410	9iD0	Somali - ethnic category 2001 census	Black African
410	9iD1	Nigerian - ethnic category 2001 census	Black African
409	9S4	Black, other, non-mixed origin	Other Black
409	9S41	Black British	Other Black
409	9S45	Black E Afric Asia/Indo-Caribb	Other Black
409	9S45-1	Black East African Asian	Other Black
409	9S45-2	Black Indo-Caribbean	Other Black
409	9S46	Black Indian sub-continent	Other Black
409	9S47	Black - other Asian	Other Black
409	9S48	Black Black - other	Other Black
409	9SA5	Other African countries (NMO)	Other Black
409	9SG	Other black ethnic group	Other Black
410	9iD	Other Black background - ethnic category 2001 census	Other Black
410	9iD2	Black British - ethnic category 2001 census	Other Black
410	9iD3	Mixed Black - ethnic category 2001 census	Other Black
410	9iD4	Other Black or Black unspecified ethnic category 2001 census	Other Black
409	9S9	Chinese	Chinese
410	9iE	Chinese - ethnic category 2001 census	Chinese
409	9SA	Other ethnic non-mixed (NMO)	Other ethnic group
409	9SA1	Brit. ethnic minor. spec.(NMO)	Other ethnic group
409	9SA2	Brit. ethnic minor. unsp (NMO)	Other ethnic group
409	9SA4	N African Arab/Iranian (NMO)	Other ethnic group
409	9SA4-1	North African Arab (NMO)	Other ethnic group
409	9SA4-2	Iranian (NMO)	Other ethnic group
409	9SC	Vietnamese	Other ethnic group
409	9SJ	Other ethnic group	Other ethnic group
410	9iF	Other - ethnic category 2001 census	Other ethnic group
410	9iF0	Vietnamese - ethnic category 2001 census	Other ethnic group
410	9iF1	Japanese - ethnic category 2001 census	Other ethnic group
410	9iF2	Filipino - ethnic category 2001 census	Other ethnic group
410	9iF3	Malaysian - ethnic category 2001 census	Other ethnic group
410	9iF9	Arab - ethnic category 2001 census	Other ethnic group
410	9iFA	North African - ethnic category 2001 census	Other ethnic group
410	9iFB	Mid East (excl Israeli, Iranian & Arab) - eth cat 2001 cens	Other ethnic group
410	9iFC	Israeli - ethnic category 2001 census	Other ethnic group
410	9iFD	Iranian - ethnic category 2001 census	Other ethnic group
410	9iFE	Kurdish - ethnic category 2001 census	Other ethnic group
410	9iFF	Moroccan - ethnic category 2001 census	Other ethnic group
410	9iFG	Latin American - ethnic category 2001 census	Other ethnic group

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410	9iFH	South and Central American - ethnic category 2001 census	Other ethnic group
410	9iFJ	Mauritian/Seychellois/Maldivian/St Helena eth cat 2001 census	Other ethnic group
410	9iFK	Any other group - ethnic category 2001 census	Other ethnic group
409	9S	Ethnic groups (census)	Not recorded
409	9SD	Ethnic group not given - patient refused	Not recorded
409	9SE	Ethnic group not recorded	Not recorded
409	9SZ	Ethnic groups (census) NOS	Not recorded
410	9i	Ethnic category - 2001 census	Not recorded
410	9iG	Ethnic category not stated - 2001 census	Not recorded

Table 8 Smoking status

ID	description	ethnic16
3	137	Tobacco consumption
3	137-1	Smoker - amount smoked
3	1371	Never smoked tobacco
3	1371-1	Non-smoker
3	1372	Trivial smoker - < 1 cig/day
3	1372-1	Occasional smoker
3	1373	Light smoker - 1-9 cigs/day
3	1374	Moderate smoker - 10-19 cigs/d
3	1375	Heavy smoker - 20-39 cigs/day
3	1376	Very heavy smoker - 40+cigs/d
3	1377	Ex-trivial smoker (<1/day)
3	1378	Ex-light smoker (1-9/day)
3	1379	Ex-moderate smoker (10-19/day)
3	137A	Ex-heavy smoker (20-39/day)
3	137a	Pipe tobacco consumption
3	137B	Ex-very heavy smoker (40+/day)
3	137b	Ready to stop smoking
3	137C	Keeps trying to stop smoking
3	137c	Thinking about stopping smoking
3	137D	Admitted tobacco cons untrue ?
3	137d	Not interested in stopping smoking
3	137e	Smoking restarted
3	137F	Ex-smoker - amount unknown

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3	137f	Reason for restarting smoking
3	137F-99	EX-Smoker NOS
3	137G	Trying to give up smoking
3	137g	Cigarette pack-years
3	137H	Pipe smoker
3	137h	Minutes from waking to first tobacco consumption
3	137J	Cigar smoker
3	137K	Stopped smoking
3	137L	Current non-smoker
3	137L-99	Tobacco Consumption Nil
3	137M	Rolls own cigarettes
3	137N	Ex pipe smoker
3	137O	Ex cigar smoker
3	137P	Cigarette smoker
3	137P-1	Smoker
3	137Q	Smoking started
3	137Q-1	Smoking restarted
3	137R	Current smoker
3	137S	Ex smoker
3	137T	Date ceased smoking
3	137U	Not a passive smoker
3	137V	Smoking reduced
3	137X	Cigarette consumption
3	137Y	Cigar consumption
3	137Z	Tobacco consumption NOS

Table 9: Current smoker (group 4)

Readcode group ID	Read term	Description
4	137	Tobacco consumption
4	137-1	Smoker - amount smoked
4	1372	Trivial smoker - < 1 cig/day
4	1372-1	Occasional smoker
4	1373	Light smoker - 1-9 cigs/day
4	1374	Moderate smoker - 10-19 cigs/d
4	1375	Heavy smoker – 20-39 cigs/day
4	1376	Very heavy smoker - 40+cigs/d
4	137a	Pipe tobacco consumption
4	137b	Ready to stop smoking
4	137C	Keeps trying to stop smoking
4	137c	Thinking about stopping smoking
4	137D	Admitted tobacco cons untrue ?
4	137d	Not interested in stopping smoking
4	137e	Smoking restarted
4	137E	Tobacco consumption unknown
4	137G	Trying to give up smoking
4	137H	Pipe smoker
4	137J	Cigar smoker
4	137M	Rolls own cigarettes
4	137P	Cigarette smoker
4	137P-1	Smoker
4	137Q	Smoking started
4	137Q-1	Smoking restarted
4	137R	Current smoker
4	137V	Smoking reduced
4	137W	Chews tobacco
4	137X	Cigarette consumption
4	137Y	Cigar consumption
4	137Z	Tobacco consumption NOS
4	EGTON1025	Current Smoker NOS
4	EGTON321	Cigarette smoker
4	EGTON326	Current smoker
4	EGTONGR11	Grade B light smoker (1-10/day)
4	EGTONGR12	Grade C moderate smoker (11-20/day)
4	EGTONGR13	Grade D heavy smoker (>20 Day)
4	EMISQRE12	Ready to stop smoking

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4	EMISQTH1	Thinking about stopping smoking
4	EMISSMRE1	Smoker (Read codes)

Table 10: Systolic blood pressure (group 198)

Read code group ID	Read term	Description
198	2469	Systolic blood pressure

Table 11: body mass index (group 200)

Read code group ID	Read term	Description
200	22K	Body Mass Index

Table 12; Total cholesterol (group 16)

Read code group ID	Read term	Description
16	44OE	Plasma total cholesterol level
16	44P	Serum cholesterol
16	44PH	Total cholesterol measurement
16	44PJ	Serum total cholesterol level

Table 13; High Density Lipoprotein cholesterol (group 367)

Read code group ID	Read term	Description
367	44d2	Plasma random HDL cholesterol level
367	44d3	Plasma fasting HDL cholesterol level
367	44dA	Plasma HDL cholesterol level
367	44P5	Serum HDL cholesterol level
367	44PB	Serum fasting HDL cholesterol level
367	44PC	Serum random HDL cholesterol level
367	EGTONHD1	HDL cholesterol level

Table 14: Cholesterol to High Density Lipoprotein (group 405)

Read code group ID	Read term	Description
405	44I2	Cholesterol/HDL ratio
405	44IF	Serum cholesterol/HDL ratio
405	44IG	Plasma cholesterol/HDL ratio
405	44PF	Total cholesterol:HDL ratio
405	EMISTCH	TC/HDL ratio

Table 15: Family history of coronary heart disease in a 1st degree relative under 60 (group 404)

Read code group ID	Read term	Description
404	12C2	FH: Ischaemic heart dis. <60
404	12C2-1	FH: Myocardial infarction < 60
404	12C2-2	FH: MI- Myocardial infarct <60
404	12C2-3	FH: Angina < 60yrs
404	12CM	FH: Angina in 1st degree male relative <55 years
404	12CP	FH: Myocardial infarct in 1st degree male relative <55 years

Table 16; Cardiovascular disease (group 411)

Read code group ID	Read term	Description
411	G3	Ischaemic heart disease
411	G3-1	Arteriosclerotic heart disease
411	G3-2	Atherosclerotic heart disease
411	G3-3	IHD - Ischaemic heart disease
411	G30	Acute myocardial infarction
411	G30-1	Attack – heart
411	G30-2	Coronary thrombosis
411	G30-3	Cardiac rupture following myocardial infarction (MI)
411	G30-4	Heart attack
411	G30-5	MI - acute myocardial infarction
411	G30-6	Thrombosis - coronary
411	G30-7	Silent myocardial infarction
411	G30-98	Coronary thrombosis
411	G30-99	Myocardial Infarction
411	G300	Acute anterolateral infarction
411	G301	Other specified anterior myocardial infarction
411	G3010	Acute anteroapical infarction

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411	G3011	Acute anteroseptal infarction
411	G301z	Anterior myocardial infarction NOS
411	G302	Acute inferolateral infarction
411	G303	Acute inferoposterior infarction
411	G304	Posterior myocardial infarction NOS
411	G305	Lateral myocardial infarction NOS
411	G306	True posterior myocardial infarction
411	G307	Acute subendocardial infarction
411	G3070	Acute non-Q wave infarction
411	G3071	Acute non-ST segment elevation myocardial infarction
411	G308	Inferior myocardial infarction NOS
411	G309	Acute Q-wave infarct
411	G30A	Mural thrombosis
411	G30B	Acute posterolateral myocardial infarction
411	G30X	Acute transmural myocardial infarction of unspecif site
411	G30X0	Acute ST segment elevation myocardial infarction
411	G30y	Other acute myocardial infarction
411	G30y0	Acute atrial infarction
411	G30y1	Acute papillary muscle infarction
411	G30y2	Acute septal infarction
411	G30yz	Other acute myocardial infarction NOS
411	G30z	Acute myocardial infarction NOS
411	G31	Other acute and subacute ischaemic heart disease
411	G31-99	Acute/subacute IHD NOS
411	G310	Postmyocardial infarction syndrome
411	G310-1	Dressler's syndrome
411	G311	Preinfarction syndrome
411	G311-1	Crescendo angina
411	G311-2	Impending infarction
411	G311-3	Unstable angina
411	G311-4	Angina at rest
411	G3110	Myocardial infarction aborted
411	G3110-1	MI - myocardial infarction aborted
411	G3111	Unstable angina
411	G3112	Angina at rest
411	G3113	Refractory angina
411	G3114	Worsening angina
411	G3115	Acute coronary syndrome
411	G311z	Preinfarction syndrome NOS
411	G312	Coronary thrombosis not resulting in myocardial infarction
411	G31y	Other acute and subacute ischaemic heart disease

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411	G31y0	Acute coronary insufficiency
411	G31y0-99	Acute coronary syndrome
411	G31y1	Microinfarction of heart
411	G31y2	Subendocardial ischaemia
411	G31y3	Transient myocardial ischaemia
411	G31yz	Other acute and subacute ischaemic heart disease NOS
411	G32	Old myocardial infarction
411	G32-1	Healed myocardial infarction
411	G32-2	Personal history of myocardial infarction
411	G33	Angina pectoris
411	G330	Angina decubitus
411	G3300	Nocturnal angina
411	G330z	Angina decubitus NOS
411	G331	Prinzmetal's angina
411	G331-1	Variant angina pectoris
411	G332	Coronary artery spasm
411	G33z	Angina pectoris NOS
411	G33z0	Status anginosus
411	G33z1	Stenocardia
411	G33z2	Syncope anginosa
411	G33z3	Angina on effort
411	G33z4	Ischaemic chest pain
411	G33z5	Post infarct angina
411	G33z6	New onset angina
411	G33z7	Stable angina
411	G33zz	Angina pectoris NOS
411	G34	Other chronic ischaemic heart disease
411	G34-99	Chr. ischaemic heart dis. NOS
411	G340	Coronary atherosclerosis
411	G340-1	Triple vessel disease of the heart
411	G340-2	Coronary artery disease
411	G3400	Single coronary vessel disease
411	G3401	Double coronary vessel disease
411	G342	Atherosclerotic cardiovascular disease
411	G343	Ischaemic cardiomyopathy
411	G344	Silent myocardial ischaemia
411	G34y	Other specified chronic ischaemic heart disease
411	G34y0	Chronic coronary insufficiency
411	G34y1	Chronic myocardial ischaemia
411	G34yz	Other specified chronic ischaemic heart disease NOS
411	G34z	Other chronic ischaemic heart disease NOS

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411	G34z0	Asymptomatic coronary heart disease
411	G35	Subsequent myocardial infarction
411	G350	Subsequent myocardial infarction of anterior wall
411	G351	Subsequent myocardial infarction of inferior wall
411	G353	Subsequent myocardial infarction of other sites
411	G35X	Subsequent myocardial infarction of unspecified site
411	G36	Certain current complication follow acute myocardial infarct
411	G360	Haemopericardium/current comp folow acut myocard infarct
411	G361	Atrial septal defect/curr comp folow acut myocardal infarct
411	G362	Ventric septal defect/curr comp fol acut myocardal infarctn
411	G363	Ruptur cardiac wall w'out haemopericard/cur comp fol ac MI
411	G364	Ruptur chordae tendinae/curr comp fol acute myocard infarct
411	G365	Rupture papillary muscle/curr comp fol acute myocard infarct
411	G366	Thrombosis atrium,auric append&vent/curr comp foll acute MI
411	G38	Postoperative myocardial infarction
411	G380	Postoperative transmural myocardial infarction anterior wall
411	G381	Postoperative transmural myocardial infarction inferior wall
411	G382	Postoperative transmural myocardial infarction other sites
411	G383	Postoperative transmural myocardial infarction unspec site
411	G384	Postoperative subendocardial myocardial infarction
411	G38z	Postoperative myocardial infarction, unspecified
411	G3y	Other specified ischaemic heart disease
411	G3z	Ischaemic heart disease NOS
411	G61	Intracerebral haemorrhage
411	G61-1	CVA - cerebrovascular accid due to intracerebral haemorrhage
411	G61-2	Stroke due to intracerebral haemorrhage
411	G61-98	Cerebral haemorrhage NOS
411	G61-99	Cerebral haemorrhage
411	G610	Cortical haemorrhage
411	G611	Internal capsule haemorrhage
411	G612	Basal nucleus haemorrhage
411	G613	Cerebellar haemorrhage
411	G614	Pontine haemorrhage
411	G615	Bulbar haemorrhage

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411	G616	External capsule haemorrhage
411	G617	Intracerebral haemorrhage, intraventricular
411	G618	Intracerebral haemorrhage, multiple localized
411	G61X	Intracerebral haemorrhage in hemisphere, unspecified
411	G61X0	Left sided intracerebral haemorrhage, unspecified
411	G61X1	Right sided intracerebral haemorrhage, unspecified
411	G61z	Intracerebral haemorrhage NOS
411	G63y0	Cerebral infarct due to thrombosis of precerebral arteries
411	G63y1	Cerebral infarction due to embolism of precerebral arteries
411	G64	Cerebral arterial occlusion
411	G64-1	CVA - cerebral artery occlusion
411	G64-2	Infarction - cerebral
411	G64-3	Stroke due to cerebral arterial occlusion
411	G640	Cerebral thrombosis
411	G6400	Cerebral infarction due to thrombosis of cerebral arteries
411	G641	Cerebral embolism
411	G641-1	Cerebral embolus
411	G6410	Cerebral infarction due to embolism of cerebral arteries
411	G64z	Cerebral infarction NOS
411	G64z-1	Brainstem infarction NOS
411	G64z-2	Cerebellar infarction
411	G64z-99	Cerebral A. occlusion NOS
411	G64z0	Brainstem infarction
411	G64z1	Wallenberg syndrome
411	G64z1-1	Lateral medullary syndrome
411	G64z2	Left sided cerebral infarction
411	G64z3	Right sided cerebral infarction
411	G64z4	Infarction of basal ganglia
411	G65	Transient cerebral ischaemia
411	G65-1	Drop attack
411	G65-2	Transient ischaemic attack
411	G65-3	Vertebro-basilar insufficiency
411	G65-99	Transient Ischaemic Attacks
411	G650	Basilar artery syndrome
411	G650-1	Insufficiency - basilar artery
411	G651	Vertebral artery syndrome
411	G6510	Vertebro-basilar artery syndrome
411	G652	Subclavian steal syndrome
411	G653	Carotid artery syndrome hemispheric
411	G654	Multiple and bilateral precerebral artery syndromes
411	G656	Vertebrobasilar insufficiency

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411	G65y	Other transient cerebral ischaemia
411	G65z	Transient cerebral ischaemia NOS
411	G65z-99	Transient Ischaemic Attacks
411	G65z0	Impending cerebral ischaemia
411	G65z1	Intermittent cerebral ischaemia
411	G65zz	Transient cerebral ischaemia NOS
411	G66	Stroke and cerebrovascular accident unspecified
411	G66-1	CVA unspecified
411	G66-2	Stroke unspecified
411	G66-3	CVA - Cerebrovascular accident unspecified
411	G66-98	Stroke/CVA - undefined
411	G66-99	Stroke
411	G660	Middle cerebral artery syndrome
411	G661	Anterior cerebral artery syndrome
411	G662	Posterior cerebral artery syndrome
411	G663	Brain stem stroke syndrome
411	G664	Cerebellar stroke syndrome
411	G665	Pure motor lacunar syndrome
411	G666	Pure sensory lacunar syndrome
411	G667	Left sided CVA
411	G668	Right sided CVA
411	G669	Cerebral palsy, not congenital or infantile, acute
411	G6760	Cereb infarct due cerebral venous thrombosis, nonpyogenic
411	G6W	Cereb infarct due unsp occlus/stenos precerebr arteries
411	G6X	Cerebrl infarctn due/unspcf occlusn or sten/cerebrl artr

5 References

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