



Unrestricted					
Data and Business Rules – Coronary Heart Disease Specification					
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## **New GMS Contract QOF Implementation**

### **Dataset and Business Rules**

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### **Coronary Heart Disease Indicator Set**

**Amendment History:**

<b>Version</b>	<b>Date</b>	<b>Amendment History</b>
Draft 0.3	21-Jun-2003	From Peter Horsfield
1.0	24-Sep-2003	Standard Headers and footers Applied and set to approved.
1.1	03-Nov-2003	Added headers and footers to Version 0.4 received from Pete Horsfield on 03/11/03.
2.0	12-Nov-2003	Amended following 4 Country review
3.0	20-Jan-2004	Amended following January READ Code Release
4.0	04-Feb-2004	Amended following 4 Country, GPSS and internal review
4.1	09-Apr-2004	SNOMED-CT codes added, 4-byte Read codes removed
4.2	09-Jul-2004	Amended following July READ code release
5.0	27-Sep-2004	Amended following 4 Country Review
5.1	18-Jan-2005	Amended following January READ Code Release
5.2	21-Jun-2005	Amended following 4 Country Review
6.0	21-July-2005	Signed off following 4 Country review
6.1	21-July-2005	Amended following July 2005 Read Code release and January 2005 SNOMED CT release
6.2	21-Aug-2005	Amended following 4 Country review
7.0	23-Sep-2005	Signed off following 4 Country review
7.1	21-Nov-2005	From Phil Brown
7.2	22-Nov-2005	Amended following review by Peter Horsfield
7.3	3-Dec-2005	Draft revised for internal review
7.4	26-Feb-2006	Amended following internal & 4 Countries review
8.0	15-Mar-2006	Signed off following 4 Country review
8.1	18-May-2006	Responding to queries raised Amend wording for Note 3
8.5	18-May-2006	Approved by NHSE
8.6	20-Oct-2006	April Read Code Release April SNOMED CT Release October Read Code Release Corrections and amendments following feedback
8.7	13-Nov-2006	IHD_COD: Correct spacing for clarity Addition of missing exercise test codes in CTV3
9.0	30-Nov-2006	Approved by NHSE
9.1	11-Apr-2007	April 2007 Read Code Release
9.2	15-Jun-2007	Following 4-Country Review: Remove 'Eye-drops' Read Codes from BB_COD in CTV3
10.0	18-Jun-2007	Signed off following 4 Country review
10.1	06-Sept-2007	April 2007 SNOMED CT Release
10.2	23-Sep-2007	October 2007 Read Code Release October 2007 SNOMED CT Release
10.3	27-Nov-2007	Following 4-Country Review: '%' added to 319357003 in SAL_COD
11.0	28-Nov-2007	Signed off following 4 Country review

## New GMS contract Q&O framework implementation

### Dataset and business rules – Coronary heart disease indicator set

#### Notes

- 1) The specified dataset and rulesets are to support analysis of extracted data to reflect the status at a specified point in time of patient records held by the practice. In the context of this document that specified time point is designated the 'Reference date' and identified by the abbreviation 'REF\_DAT'. In interpreting the specification REF\_DAT should be taken to mean midnight of the preceding day (i.e. a REF\_DAT of 01.04.2003 equates to midnight on 31.03.2003).
- 2) To support accurate determination of the population of patients to which the indicators should relate (the denominator population) these rulesets have been compiled with a prior assumption that the reference date is specified prior to extraction of data and is available for computation in the data extraction routine. The reference date will also be required to be included in the data extraction to support processing of rules that are dependent upon it. It is possible that an alternative approach could be adopted in which rules to determine the denominator population by registration status would be applied as a component of rule processing. If this second approach were to be adopted it would be essential to specify default time criteria for determining the registration characteristics of the denominator population during the data extraction process. Additionally there would be a requirement to supplement the dataset and rulesets to support identification of the appropriate denominator population.
- 3) Clinical codes quoted are (where known) from the April 2006 release of Read codes version 2, clinical terms version 3 (CTV3) and the July 2005 version of SNOMED-CT. For non SNOMED-CT, the codes are shown within the document as a 5 character value to show that the Read Code is for a 5-Byte system.
  - i) Where a '%' wildcard is displayed, the Read Code is filled to 5 characters with full-stops. When implementing a search for the Read Code, only the non full-stop values should be used in the search, For example, a displayed Read Code of c1...% should be implemented as a search for c1%, i.e. should find c1 and any of it's children.
  - ii) Where a range of read codes are displayed, the Read Code is filled to 5 characters with full-stops. When implementing the search, only the non full-stop values should be used in the search, For example, a displayed Read Code range of G342. – G3z.. should find all codes between G342 and G3z (including any children where applicable).
- 4) Datasets comprise a specification of two elements:
  - a) Patient selection criteria. These are the criteria used to determine the patient population against whom the indicators are to be applied.
    - i) Registration status. This determines the current patient population at the practice
    - ii) Diagnostic code status. This determines the current patient population (register size) for a given clinical condition

There are three scenarios within the diagnostic code status, these are where

- There is a single morbidity patient population (disease register) required (e.g. within CHD). Where this occurs, a single set of rules for identifying the patient population is provided.

- There is a single co-morbidity patient population (disease register) required (e.g. within Smoking). Where this occurs, a set of rules for *each* morbidity is provided. A patient *must* only be included in the patient population (register size) *once*.
- There are multiple patient populations (disease registers) required (e.g. within Heart Failure). Where this occurs, a single set of rules for *each* patient population is provided.  
N.B. where there are multiple patient populations (disease registers), it is possible that one or more will also be a co-morbidity patient population (e.g. within Depression)

Where this occurs, details of which register population applies to which indicator(s) are provided. Where the register size applies to an indicator, this is the base denominator population for that indicator.

- b) Clinical data extraction criteria. These are the data items to be exported from the clinical system for subsequent processing to calculate points allocations. They are expressed in the form of a MIQUEST 'Report-style' extract of data.

The record of each patient that satisfies the appropriate selection criteria for a given indicator will be interrogated against the clinical data criteria (also appropriate to that indicator). A report of the data contained in the selected records will be exported in the form of a fixed-format tabular report. Each selected patient will be represented by a single row in the report. Rows will contain a fixed number of fields each containing a single data item. The number of fields in each row and their data content will be determined by the clinical data criteria. Data items that match the clinical data criteria will be exported in the relevant field of the report. Where there is no data to match a specific clinical criterion a null field will be exported.

- 5) Rulesets are specified as multiple rules to be processed sequentially. Processing of rules should terminate as soon as a 'Reject' or 'Select' condition is encountered
- 6) Rules are expressed as logical statements that evaluate as either 'true' or 'false'. The following operators are required to be supported:
- |                     |        |
|---------------------|--------|
| a) > (greater than) | e) AND |
| b) < (less than)    | f) OR  |
| c) = (equal to)     | g) NOT |
| d) ≠ (not equal to) |        |
- 7) Where date criteria are specified with intervals of multiples of months or years these should be interpreted as calendar months or calendar years.
- 8) The new GMS contract requires that influenza vaccinations should be given between 1<sup>st</sup> September and 31<sup>st</sup> March of any given contract year in order to qualify for the relevant indicators. Hence in the contract year 2004 – 2005 the relevant dates will be 1<sup>st</sup> September 2004 and 31<sup>st</sup> March 2005 inclusive. In this document these dates are expressed as variable parameters FLU\_COM and FLU\_END respectively. For the purposes of data extraction these variables will be required to be specified prior to processing the relevant rules.

**Dataset Specification**

1) Patient selection criteria:

a) Registration status

<u>Current registration status</u>	<u>Qualifying criteria</u>
Currently registered for GMS	Most recent registration date < (REF_DAT)
Previously registered for GMS	Any sequential pairing of registration date and deregistration date where both of the following conditions are met: registration date < (REF_DAT); AND deregistration date >= (REF_DAT)

b) Diagnostic code status

<i>Code criteria</i>	<i>Qualifying diagnostic codes</i>			<i>Time criteria</i>
	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	
<i>Included</i>	G3... - G330z G33z. - G3401 G342. - G366. G38.. - G3z.. Gyu3.%	194828000% (excluding 87343002) 22298006% 53741008% (excluding 42866003) 414545008% (excluding 276516009%) 67682002	XE2uV% (excluding Xa07j%, G341.%, X200B%, X200c)	<i>Earliest &lt; (REF_DAT)</i>

2) Clinical data extraction criteria

<u>Field Number</u>	<u>Field name</u>	<u>Data item</u>			<u>Qualifying criteria</u>
1	PAT_ID	Patient ID number			Unconditional
2	REG_DAT	Date of patient registration			Latest < REF_DAT
3	CHDEXC_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		9h0..%	89781000000102%	XaJ4J%	
		<i>(CHD exception reporting codes)</i>			
4	CHDEXC_DAT	Date of CHDEXC_COD			Chosen record
5	IHD_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Earliest < REF_DAT
		G3... - G330z G33z. - G3401 G342. - G366. G38.. - G3z.. Gyu3.%	194828000% (excluding 87343002) 22298006% 53741008% (excluding 42866003) 414545008% (excluding 276516009%) 67682002	XE2uV% (excluding Xa07j%, G341.%, X200B%, X200c)	
		<i>(Ischaemic heart disease codes)</i>			
6	IHD_DAT	Date of IHD_COD			Chosen record
7	ANG_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Earliest episode < REF_DAT
		G311.% G33..- G330z G33z. - G33zz Gyu30	194828000% (excluding 87343002)	G33..%	
		<i>(Angina codes)</i>			
8	ANG_DAT	Date of ANG_COD			Chosen record

9	MI_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest first or new episode < REF_DAT
		G30..% G35..% G38..% Gyu34	22298006% (excluding 1755008%)	X200E% (excluding XE2aA%)	
		<i>(Myocardial infarction codes)</i>			
10	MI_DAT	Date of MI_COD			Chosen record
11	EXR_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Earliest < REF_DAT AND >= (ANG_DAT – 3 months)
		3213.% 33B9.% (excluding 33B92) 8H44., 8HRA., 8HVJ., 8HTJ. 9NOF. 5744., 8H4R.	165079009% 183519002, 310355001 308471005% 315015006, 315014005 252432008% 37707006, 169163002 251892004%, 165080007	33B9.% 8H44. XaCFM XaBTR% XaFs5, XaFs4 5744., XaLFu, 33B91, 33B93, 33B94 33B95	
		<i>(Exercise test codes)</i>			
12	EXR_DAT	Date of EXR_COD			Chosen record
13	EXREXC_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Earliest < REF_DAT AND >= ANG_DAT
		8I3S. 33BE.	408551003 414159007	XaJIB XaK6V	
		<i>(Exception codes for exercise test)</i>			
14	EXREXC_DAT	Date of EXREXC_COD			Chosen record
15	BP_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		246..% (excluding 2460., 246H., 246I., 246K., 246L., 246M.)	163020007% (excluding 163021006, 310357009, 310356000, 274283008%) 75367002% (excluding 37087001%, 315612005, 315613000, 386533006%, 6797001%, 251079001,	X773t% (excluding Xa19f, Xa19g) 246..% (excluding 2460., XaCFN, XaCFO)	

			252076005%)		
		(BP recording codes)			
16	BP_DAT	Date of BP_COD			Chosen record
17	BP_SYS	Value 1 of BP_COD (Systolic BP value)			Chosen record
18	BP_DIA	Value 2 of BP_COD (Diastolic BP value)			Chosen record
19	BPEX_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8I3Y.	413123006	XaJkR	
		(BP recording exception codes)			
20	BPEX_DAT	Date of BPEX_COD			Chosen record
21	HTMAX_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8BL0.	407567007	XaJ5h	
		(Code for maximal BP therapy)			
22	HTMAX_DAT	Date of HTMAX_COD			Chosen record
23	CHOL_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		44OE. 44P..- 44P4. 44PH. 44PJ.	390956002 270996006% 315017003, 166828006 166830008, 166829003 166831007, 121868005%	XaIRd XE2eD% XaFs9 XaJe9 44P1., 44P2., 44P3., 44P4.	
		(Total cholesterol codes)			
24	CHOL_DAT	Date of CHOL_COD			Chosen record
25	CHOL_VAL	Value 1 of CHOL_COD (Total cholesterol value)			Chosen record
26	CHEXC_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		U60CA TJC24 TJC25	395229006 293432006%	XalsC, Xalro XaJYw Xa5bP%	

		<i>(Codes for exception from serum cholesterol target; persisting)</i>			
27	CHEXC_DAT	Date of CHEXC_COD			Chosen record
28	TCHEXC_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8BL1. 8I3C. 8I27. 8I63. 8I76.	407568002 134396000 134391005 315363002 413174003	XaJ5i XaIII XaIIg XaG2V XaJYw	
		<i>(Codes for exception from serum cholesterol target; expiring)</i>			
29	TCHEXC_DAT	Date of TCHEXC_COD			Chosen record
30	XSAL_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		14LK. ZV148 U6051 TJ53.	395102008 269722001% 293585002% 312664009	XaIpk Xa5FM% XE22E% Xa5dp% XaDzd U6051	
		<i>(Salicylate contra-indications: persistent)</i>			
31	XSAL_DAT	Date of XSAL_COD			Chosen record
32	TXSAL_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8I24. 8I38. 8I66. 8I70.	312451002 315023008 134394002 88171000000109	XaDvH XaFsE XaIIi XaJ5a	
		<i>(Salicylate contra-indications: expiring)</i>			
33	TXSAL_DAT	Date of TXSAL_COD			Chosen record
34	XWAR_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		14LP. TJ42.% (excluding TJ420) U6042	407580005 293341000% 222996001 407589006	XaJ60 TJ42.% (excluding TJ420) U6042	

		ZV14A	294878002%	XaJ8B Xa5yP%	
		<i>(Warfarin contraindications: persistent)</i>			
35	XWAR_DAT	Date of XWAR_COD			Chosen record
36	TXWAR_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8I25.	315061006	XaFsz	
		8I3E.	134398004	XaIIn	
		8I65.	134392003	XaIh	
		8I71.	88181000000106	XaJ5b	
		8I2R.	413558003	XaKAB	
		8I3d.	413559006	XaKAD	
		8I6N.	413560001	XaKA7	
		8I7A.	413561002	XaKA0	
		<i>(Warfarin contraindications: expiring)</i>			
37	TXWAR_DAT	Date of TXWAR_COD			Chosen record
38	XCLO_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		14LQ.	407592005	XaJ8V	
		U6048	89731000000101	XaJ3e	
		ZV14B	407575001	XaJ5v	
		<i>(Clopidogrel contraindications: persistent)</i>			
39	XCLO_DAT	Date of XCLO_COD			Chosen record
40	TXCLO_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8I2K.	407582002	XaJ6Y	
		8I3R.	407583007	XaJ6Z	
		8I6B.	407571005	XaJ5I	
		8I72.	88191000000108	XaJ5c	
		<i>(Clopidogrel contraindications: expiring)</i>			
41	TXCLO_DAT	Date of TXCLO_COD			Chosen record
42	OSAL_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		67I8.	315045009	XaFsi	
		8B63.	314481009	XaF7N	

		8B3T. 8B6P.	266716006% 413081008	XEOhr% XaJd8	
		<i>(OTC salicylate codes)</i>			
43	OSAL_DAT	Date of OSAL_COD			Chosen record
44	SAL_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		bu2..% di1..% j11..% blm..% bu4..%	358427004% 319796006% 319357003%	bu2..% x04tL% blm..% bu4..%	
		<i>(Salicylate prescription codes)</i>			
45	SAL_DAT	Date of SAL_COD			Chosen record
46	CLO_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		bu5..%	108979001%	bu5..%	
		<i>(Clopidogrel prescription codes)</i>			
47	CLO_DAT	Date of CLO_COD			Chosen record
48	WAR_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		bs..% 8B2K.	350472006% 350473001% 413557008	x01O3% x01O5% XaKak	
		<i>(Warfarin prescription codes)</i>			
49	WAR_DAT	Date of WAR_COD			Chosen record
50	XBB_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		14LL. TJC6.% U60B7 ZV14C	407577009 293962009% 292419005% 223065001 407591003	XaJ5x Xa5jo% Xa5LL% TJC6.% U60B7, XaJ8U	
		<i>(Beta-blocker contraindications: persistent)</i>			
51	XBB_DAT	Date of XBB_COD			Chosen record

52	TXBB_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8I26. 8I36. 8I62. 8I73.	315062004 315020006 315214003 88201000000105	XaFt0 XaFsB XaFvr XaJ5d	
		<i>(Beta-blocker contraindications; expiring)</i>			
53	TXBB_DAT	Date of TXBB_COD			Chosen record
54	BB_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		bd...%	33252009% (excluding 404635006%)	bd...% (excluding k832.%, k83z.%, k83y.%, bd4.., k83.., k85y.%, k85z.%, x01C8%, k8b..%, x03hf%)	
		<i>(Beta-blocker prescription codes)</i>			
55	BB_DAT	Date of BB_COD			Chosen record
56	XACE_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		14LM. U60C4 TJC77 – TJC79 ZV14D	407578004 407595007 295036000% 293500009% 223073005	XaJ5y XaJ8Y Xa60w% Xa5cT% XaIrq, U60C4	
		<i>(Ace inhibitor contraindications; persistent)</i>			
57	XACE_DAT	Date of XACE_COD			Chosen record
58	TXACE_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8I28. 8I3D. 8I64. 8I74.	315364008 134397009 134390006 407564000	XaG2W XaIIm XaIIf XaJ5e	
		<i>(Ace inhibitor contraindications; expiring)</i>			
59	TXACE_DAT	Date of TXACE_COD			Chosen record

60	XAII_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		14LN. U60CB ZV14E	407579007 407590002% 401108004 407593000	XaJ5z XaJ8o XaIzK XaJ8W	
		<i>(All antagonist contraindications: persisting)</i>			
61	XAII_DAT	Date of XACE_COD			Chosen record
62	TXAII_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8I2H. 8I3P. 8I6C. 8I75.	394987009 401084003 407572003 407565004	XaInW Xalyw XaJ5m XaJ5f	
		<i>(All antagonist contraindications: expiring)</i>			
63	TXAII_DAT	Date of TXAII_COD			Chosen record
64	ACE_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		bi...% bA...% bk6..%	41549009%	bi...% bA...%	
		<i>(Ace inhibitor prescription codes)</i>			
65	ACE_DAT	Date of ACE_COD			Chosen record
66	AII_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		bk3.. - bk5z. bk7.. - bk9z. bkB..%	96308008%	x03j2% x03ls%	
		<i>(All antagonist prescription codes)</i>			
67	AII_DAT	Date of AII_COD			Chosen record
68	XFLU_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		14LJ. U60K4 ZV14F	315631004 407587008 407594006 294647003%	XaIAA XaJ7u XaJ8X Xa5um%	
		<i>(All antagonist prescription codes)</i>			

			293111007%	Xa5WJ%	
		<i>(Flu vaccine contraindications: persisting)</i>			
69	XFLU_DAT	Date of XFLU_COD			Chosen record
70	TXFLU_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		8I2F. 8I6D. 68NE. 9OX5.	315640000 390796006 171272004 407573008	XaIBI XaIOT 68NE. XaJ5n	
		<i>(Flu vaccine contraindications: expiring)</i>			
71	TXFLU_DAT	Date of TXFLU_COD			Chosen record
72	FLU_COD	<i>Read codes v2</i>	<i>SNOMED-CT</i>	<i>CTV3</i>	Latest < REF_DAT
		n47..% 65E..% ZV048	46233009% (excluding 333680004%) 86198006% 315701000	n47..% 65E..% ZV048	
		<i>(Flu vaccination codes)</i>			
73	FLU_DAT	Date of FLU_COD			Chosen record

**Indicator rulesets**

- 1 Indicator CHD 1: The practice can produce a register of patients with coronary heart disease

The terms of this indicator will be satisfied if the practice is able to produce a data extraction according to the above criteria.

No numerator or denominator determination is required.

- 2 **Indicator CHD 2:** The percentage of patients with newly diagnosed angina (diagnosed after 1 April 2003) who are referred for exercise testing and/or specialist assessment

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>ANG_COD</u> = Null	Reject	Next rule
2	If <u>ANG_DAT</u> >= 01.04.2003	Next rule	Reject
3	If <u>EXR_DAT</u> <= ( <u>ANG_DAT</u> + 12 months) AND If <u>EXR_DAT</u> >= ( <u>ANG_DAT</u> - 3 months)	Select	Next rule
4	If <u>REG_DAT</u> >= ( <u>REF_DAT</u> - 3 months)	Reject	Next rule
5	If <u>CHDEXC_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Next rule
6	If <u>EXREXC_DAT</u> <= ( <u>ANG_DAT</u> + 12 months)	Reject	Next rule
7	If <u>ANG_DAT</u> >= ( <u>REF_DAT</u> - 3 months)	Reject	Select

b) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>EXR_DAT</u> <= ( <u>ANG_DAT</u> + 12 months) AND If <u>EXR_DAT</u> >= ( <u>ANG_DAT</u> - 3 months)	Select	Reject

Indicator CHD 5: The percentage of patients with coronary heart disease, whose notes have a record of blood pressure in the previous 15 months.

c) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">BP_DAT</a> >= ( <a href="#">REF_DAT</a> – 15 months)	Select	Next rule
2	If <a href="#">BPEX_DAT</a> >= ( <a href="#">REF_DAT</a> – 15 months)	Reject	Next rule
3	If <a href="#">REG_DAT</a> >= ( <a href="#">REF_DAT</a> – 3 months)	Reject	Next rule
4	If <a href="#">CHDEXC_DAT</a> >= ( <a href="#">REF_DAT</a> – 15 months)	Reject	Next rule
5	If <a href="#">IHD_DAT</a> >= ( <a href="#">REF_DAT</a> – 3 months)	Reject	Select

d) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">BP_DAT</a> >= ( <a href="#">REF_DAT</a> – 15 months)	Select	Reject

3 Indicator CHD 6: The percentage of patients with coronary heart disease, in whom the last blood pressure reading (measured in the previous 15 months) is 150/90 or less.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>BP_SYS</u> <= 150            AND If <u>BP_DIA</u> <= 90            AND If <u>BP_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Select	Next rule
2	If <u>BPEX_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Next rule
3	If <u>REG_DAT</u> >= ( <u>REF_DAT</u> - 9 months)	Reject	Next rule
4	If <u>CHDEXC_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Next rule
5	If <u>IHD_DAT</u> >= ( <u>REF_DAT</u> - 9 months)	Reject	Next rule
6	If <u>HTMAX_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Select

b) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>BP_SYS</u> <= 150            AND If <u>BP_DIA</u> <= 90            AND If <u>BP_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Select	Reject

- 4 **Indicator CHD 7:** The percentage of patients with coronary heart disease, whose notes have a record of total cholesterol in the previous 15 months

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">CHOL_DAT</a> >= ( <a href="#">REF_DAT</a> – 15 months)	Select	Next rule
2	If <a href="#">REG_DAT</a> >= ( <a href="#">REF_DAT</a> – 3 months)	Reject	Next rule
3	If <a href="#">CHDEXC_DAT</a> >= ( <a href="#">REF_DAT</a> – 15 months)	Reject	Next rule
4	If <a href="#">IHD_DAT</a> >= ( <a href="#">REF_DAT</a> – 3 months)	Reject	Select

b) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">CHOL_DAT</a> >= ( <a href="#">REF_DAT</a> – 15 months)	Select	Reject

5 **Indicator CHD 8:** The percentage of patients with coronary heart disease, whose last measured total cholesterol (measured in the previous 15 months) is 5 mmol/l or less.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>CHOL_VAL</u> <= 5 AND If <u>CHOL_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Select	Next rule
2	If <u>REG_DAT</u> >= ( <u>REF_DAT</u> - 9 months)	Reject	Next rule
3	If <u>CHDEXC_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Next rule
4	If <u>IHD_DAT</u> >= ( <u>REF_DAT</u> - 9 months)	Reject	Next rule
5	If <u>CHEXC_COD</u> ≠ Null OR If <u>TCHEXC_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Select

b) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>CHOL_VAL</u> <= 5 AND If <u>CHOL_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Select	Reject

- 6 Indicator CHD 9: The percentage of patients with coronary heart disease with a record in the previous 15 months that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken (unless a contraindication or side effects are recorded).

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">SAL_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months) OR If <a href="#">WAR_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months) OR If <a href="#">CLO_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months) OR If <a href="#">OSAL_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months)	Select	Next rule
2	If <a href="#">REG_DAT</a> >= ( <a href="#">REF_DAT</a> - 3 months)	Reject	Next rule
3	If <a href="#">CHDEXC_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months)	Reject	Next rule
4	If <a href="#">IHD_DAT</a> >= ( <a href="#">REF_DAT</a> - 3 months)	Reject	Next rule
5	If <a href="#">XSAL_COD</a> = Null AND If <a href="#">TXSAL_DAT</a> = Null	Select	Next rule
6	If <a href="#">XSAL_COD</a> = Null AND If <a href="#">TXSAL_DAT</a> < ( <a href="#">REF_DAT</a> - 15 months)	Select	Next rule
7	If <a href="#">XWAR_COD</a> = Null AND If <a href="#">TXWAR_DAT</a> = Null	Select	Next rule
8	If <a href="#">XWAR_COD</a> = Null AND If <a href="#">TXWAR_DAT</a> < ( <a href="#">REF_DAT</a> - 15 months)	Select	Next rule
9	If <a href="#">XCLO_COD</a> = Null AND If <a href="#">TXCLO_DAT</a> = Null	Select	Next rule
10	If <a href="#">XCLO_COD</a> = Null AND If <a href="#">TXCLO_DAT</a> < ( <a href="#">REF_DAT</a> - 15 months)	Select	Reject

b) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">SAL_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months) OR If <a href="#">WAR_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months) OR If <a href="#">CLO_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months) OR If <a href="#">OSAL_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months)	Select	Reject

- 7 **Indicator CHD 10:** The percentage of patients with coronary heart disease who are currently treated with a beta blocker (unless a contraindication or side effects are recorded)

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">BB_DAT</a> >= ( <a href="#">REF_DAT</a> - 6 months)	Select	Next rule
2	If <a href="#">REG_DAT</a> >= ( <a href="#">REF_DAT</a> - 3 months)	Reject	Next rule
3	If <a href="#">CHDEXC_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months)	Reject	Next rule
4	If <a href="#">IHD_DAT</a> >= ( <a href="#">REF_DAT</a> - 3 months)	Reject	Next rule
5	If <a href="#">XBB_COD</a> ≠ Null	Reject	Next rule
6	If <a href="#">TXBB_DAT</a> >= ( <a href="#">REF_DAT</a> - 15 months)	Reject	Select

b) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">BB_DAT</a> >= ( <a href="#">REF_DAT</a> - 6 months)	Select	Reject

- 8 **Indicator CHD 11:** The percentage of patients with a history of myocardial infarction (diagnosed after 1 April 2003) who are currently treated with an ACE inhibitor or angiotensin II antagonist.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>MI_DAT</u> >= 01.04.2003	Next rule	Reject
2	If <u>ACE_DAT</u> >= ( <u>REF_DAT</u> - 6 months) OR If <u>AII_DAT</u> >= ( <u>REF_DAT</u> - 6 months)	Select	Next rule
3	If <u>REG_DAT</u> >= ( <u>REF_DAT</u> - 3 months)	Reject	Next rule
4	If <u>CHDEXC_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Next rule
5	If <u>MI_DAT</u> >= ( <u>REF_DAT</u> - 3 months)	Reject	Next rule
6	If <u>XACE_COD</u> = Null AND If <u>TXACE_DAT</u> = Null	Select	Next rule
7	If <u>XACE_COD</u> = Null AND If <u>TXACE_DAT</u> < ( <u>REF_DAT</u> - 15 months)	Select	Next rule
8	If <u>XAII_COD</u> = Null AND If <u>TXAII_DAT</u> = Null	Select	Next rule
9	If <u>XAII_COD</u> = Null AND If <u>TXAII_DAT</u> < ( <u>REF_DAT</u> - 15 months)	Select	Reject

b) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>ACE_DAT</u> >= ( <u>REF_DAT</u> - 6 months) OR If <u>AII_DAT</u> >= ( <u>REF_DAT</u> - 6 months)	Select	Reject

- 9 Indicator CHD 12: The percentage of patients with coronary heart disease who have a record of influenza immunisation in the preceding 1st September to 31st March.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>FLU_DAT</u> >= <u>FLU_COM</u> AND If <u>FLU_DAT</u> <= <u>FLU_END</u>	Select	Next rule
2	If <u>REG_DAT</u> >= ( <u>REF_DAT</u> - 3 months)	Reject	Next rule
3	If <u>CHDEXC_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Next rule
4	If <u>IHD_DAT</u> >= ( <u>REF_DAT</u> - 3 months)	Reject	Next rule
5	If <u>XFLU_COD</u> ≠ Null	Reject	Next rule
6	If <u>TXFLU_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Select

b) Numerator ruleset: To be applied to the above denominator population

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>FLU_DAT</u> >= <u>FLU_COM</u> AND If <u>FLU_DAT</u> <= <u>FLU_END</u>	Select	Reject