



<b>Data and Business Rules – Atrial fibrillation Indicator Set</b>					
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**New GMS Contract QOF Implementation**

**Dataset and Business Rules**

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**Atrial Fibrillation Indicator Set**

**Amendment History:**

Version	Date	Amendment History
		The version number starts at 7.1 in order to coincide with existing datasets and business rules.
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	23-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	Following 4-Country Review: XSAL_COD: Delete 223005004 from SNOMED-CT
9.0	30-Nov-2006	Approved by NHSE
9.1	11-Apr-2007	April 2007 Read Code Release
9.2	11-June-2007	Following 4-Country Review: Changes to the qualifying criteria for AFIB_COD and AFIBDI_COD. Remove G5731 Diagnostic Code Status and AFIB_COD cluster Change date check for "anti-coagulant drug therapy or an anti-platelet drug therapy" (AF03) to 6 months
10.0	18-Jun-2007	Signed off following 4 Country review
10.1	12-Aug-2007	April SNOMED CT update
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
11.1	30-Jun-2008	April 2008 Read Code Release April 2008 SNOMED CT Release QOF Review 2007 (Replacing AF2 with AF4)
12.0	24-Jul-2008	Signed off following 4 Country review
12.1	06-Oct-2008	October 2008 Read Code Release October 2008 SNOMED CT Release
13.0	05-Dec-2008	Signed off following 4 Country review
13.2	09-Mar-2009	QOF Review 2008
14.0	01-May-2009	Signed off following 4 Country review
14.1	25-June-2009	April 2009 Read Code Release
15.0	17-August-2009	Sign off following 4 Country review
15.1	12-October-2009	October 2009 Clinical Code Release
15.2	28-October-2009	October 2009 Clinical Code Release review
16.0	02-December-2009	Sign off following 4 Country review
17.0	07-May-2010	April 2010 Read Code Release following NHS IC review
18.0	29-October-2010	October 2010 Read Code Release following NHS IC review
19.0	13-December-2010	Signed off following 4 Country review

20.0	13-May-2011	April 2011 Read Code Release following NHS IC review
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## **New GMS contract Q&O framework implementation**

### Dataset and business rules – Atrial fibrillation 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 2011 release of Read codes version 2 and clinical terms version 3 (CTV3). 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).

The version number starts at 7.1 in order to coincide with existing datasets and business rules.

- 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>Included</i>	<i>Read codes v2</i>	<i>CTV3</i>	<i>Latest &lt; (REF_DAT)</i>
	G573.% (excluding G5731)	G5730% G573.%	
	<i>(Atrial fibrillation codes)</i>		
<i>Excluded</i>	<i>Read codes v2</i>	<i>CTV3</i>	<i>Latest &lt; (REF_DAT)</i> <i>AND &gt; Date of</i> <i>diagnostic code</i> <i>above</i>
	212R.	XaLFz	
	<i>(Atrial fibrillation resolved codes)</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	AFIBEXC_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < (REF_DAT)
		9hF1. 9hFO.	XaLFj XaLFi	
		<i>(Atrial fibrillation exception reporting codes)</i>		
4	AFIBEXC_DAT	Date of AFIBEXC_COD		Chosen record
5	AFIB_COD	<i>Read codes v2</i>	<i>CTV3</i>	Earliest < (REF_DAT)
		G573.% (excluding G5731)	G5730% G573.%	
		<i>(Atrial fibrillation codes)</i>		
6	AFIB_DAT	Date of AFIB_COD		Chosen record
7	AFIBDI_COD	<i>Read codes v2</i>	<i>CTV3</i>	Earliest < (REF_DAT) AND >= (AFIB_DAT – 3 months)
		3272. 8H41. 8H44. 8HR1. 8H4R. 8HVJ.	3272. 8H41. 8H44. 8HR1. XaBTR% XaLFu	
		<i>(Atrial fibrillation diagnosis codes)</i>		
8	AFIBDI_DAT	Date of AFIBDI_COD		Chosen record
9	XSAL_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		14LK. ZV148	Xalpk XaDzd	

		U6051 TJ53.	Xa5FM% XE22E% Xa5dp% U6051	
		<i>(Salicylate contra-indications: persistent)</i>		
10	XSAL_DAT	Date of XSAL_COD		Chosen record
11	TXSAL_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		8I24. 8I38. 8I66. 8I70.	XaDvH XaFsE XaIli XaJ5a	
		<i>(Salicylate contra-indications: expiring)</i>		
12	TXSAL_DAT	Date of TXSAL_COD		Chosen record
13	XWAR_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		14LP. TJ42.% (excluding TJ420) U6042 ZV14A	XaJ60 TJ42.% (excluding TJ420) U6042 XaJ8B Xa5yP%	
		<i>(Warfarin contraindications: persistent)</i>		
14	XWAR_DAT	Date of XWAR_COD		Chosen record

15	TXWAR_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		8I25. 8I3E. 8I65. 8I71. 8I2R. 8I3d. 8I6N. 8I7A.	XaFsz XaIIn XaIh XaJ5b XaKAB XaKAD XaKA7 XaKA0	
		<i>(Warfarin contraindications: expiring)</i>		
16	TXWAR_DAT	Date of TXWAR_COD		Chosen record
17	XCLO_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		14LQ. U6048 ZV14B	XaJ8V XaJ3e XaJ5v	
		<i>(Clopidogrel contraindications: persistent)</i>		
18	XCLO_DAT	Date of XCLO_COD		Chosen record
19	TXCLO_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		8I2K. 8I3R. 8I6B. 8I72.	XaJ6Y XaJ6Z XaJ5l XaJ5c	
		<i>(Clopidogrel contraindications: expiring)</i>		
20	TXCLO_DAT	Date of TXCLO_COD		Chosen record

21	OSAL_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < (REF_DAT)
		6718. 8B63. 8B3T. 8B6P.	XaFsi XaF7N XE0hr% XaJd8	
		<i>(OTC salicylate codes)</i>		
22	OSAL_DAT	Date of OSAL_COD		Chosen record
23	SAL_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < (REF_DAT)
		bu2..% di1..% j11..% blm..% bu4..%	bu2..% x04tL% blm..% bu4..%	
		<i>(Salicylate prescription codes)</i>		
24	SAL_DAT	Date of SAL_COD		Chosen record
25	CLO_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < (REF_DAT)
		bu5..%	bu5..%	
		<i>(Clopidogrel prescription codes)</i>		
26	CLO_DAT	Date of CLO_COD		Chosen record
27	WAR_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < (REF_DAT)
		bs...% 8B2K.	x01O3% x01O5% XaKAK	
		<i>(Warfarin prescription codes)</i>		
28	WAR_DAT	Date of WAR_COD		Chosen record
29	DIPY_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < (REF_DAT)

		bu1..% bu4..% (excluding bu13., bu1z.)	bu1..% bu4..% (excluding bu1z.%)	
		<i>(Dipyridamole prescription codes)</i>		
30	DIPY_DAT	Date of DIPY_COD		Chosen record
31	XDIPY_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		14LX. TJC44 U60C3	Xa61Z Xa5d6 TJC44	
		<i>(Dipyridamole contraindications: persistent)</i>		
32	XDIPY_DAT	Date of XDIPY_COD		Chosen record
33	TXDIPY_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		8I2b. 8I3n. 8I6a. 8I7J.	XaLFv XaLFw XaLFx XaLFy	
		<i>(Dipyridamole contraindications: expiring)</i>		
34	TXDIPY_DAT	Date of TXDIPY_COD		Chosen record

### **Indicator rulesets**

- 1 **Indicator AF 1:** The practice can produce a register of patients with atrial fibrillation

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 AF 4: The percentage of patients with atrial fibrillation diagnosed after 1 April 2008 with ECG or specialist confirmed diagnosis

a) Denominator ruleset

<u>Rule number</u>	<u>Rule</u>	<u>Action if true</u>	<u>Action if false</u>
1	If <u>AFIB_DAT</u> >= 01.04.2008	Next rule	Reject
2	If <u>AFIBDI_DAT</u> <= ( <u>AFIB_DAT</u> + 3 months) AND If <u>AFIBDI_DAT</u> >= ( <u>AFIB_DAT</u> - 3 months)	Select	Next rule
3	If <u>REG_DAT</u> >= ( <u>REF_DAT</u> - 3 months)	Reject	Next rule
4	If <u>AFIBEXC_DAT</u> >= ( <u>REF_DAT</u> - 15 months)	Reject	Next rule
5	If <u>AFIB_DAT</u> >= ( <u>REF_DAT</u> - 3 months)	Reject	Select

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

<u>Rule number</u>	<u>Rule</u>	<u>Action if true</u>	<u>Action if false</u>
1	If <u>AFIBDI_DAT</u> <= ( <u>AFIB_DAT</u> + 3 months) AND If <u>AFIBDI_DAT</u> >= ( <u>AFIB_DAT</u> - 3 months)	Select	Reject

- 3 Indicator AF 3: The percentage of patients with atrial fibrillation who are currently treated with anti-coagulant drug therapy or an anti-platelet therapy

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>SAL DAT</u> >= ( <u>REF DAT</u> - 6 months) OR If <u>WAR DAT</u> >= ( <u>REF DAT</u> - 6 months) OR If <u>CLO DAT</u> >= ( <u>REF DAT</u> - 6 months) OR If <u>OSAL DAT</u> >= ( <u>REF DAT</u> - 6 months) OR If <u>DIPY DAT</u> >= ( <u>REF DAT</u> - 6 months)	Select	Next rule
2	If <u>REG DAT</u> >= ( <u>REF DAT</u> - 3 months)	Reject	Next rule
3	If <u>AFIBEXC DAT</u> >= ( <u>REF DAT</u> - 15 months)	Reject	Next rule
4	If <u>AFIB DAT</u> < ( <u>REF DAT</u> - 3 months)	Next rule	Reject
5	If <u>XSAL COD</u> = Null AND If <u>TXSAL DAT</u> = Null	Select	Next rule
6	If <u>XSAL COD</u> = Null AND If <u>TXSAL DAT</u> < ( <u>REF DAT</u> - 15 months)	Select	Next rule
7	If <u>XWAR COD</u> = Null AND If <u>TXWAR DAT</u> = Null	Select	Next rule
8	If <u>XWAR COD</u> = Null AND If <u>TXWAR DAT</u> < ( <u>REF DAT</u> - 15 months)	Select	Next rule
9	If <u>XCLO COD</u> = Null AND If <u>TXCLO DAT</u> = Null	Select	Next rule
10	If <u>XCLO COD</u> = Null AND If <u>TXCLO DAT</u> < ( <u>REF DAT</u> - 15 months)	Select	Next rule
11	If <u>XDIPY COD</u> = Null AND If <u>TXDIPY DAT</u> = Null	Select	Next rule
12	If <u>XDIPY COD</u> = Null AND If <u>TXDIPY 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>SAL DAT</u> >= ( <u>REF DAT</u> - 6 months) OR If <u>WAR DAT</u> >= ( <u>REF DAT</u> - 6 months) OR If <u>CLO DAT</u> >= ( <u>REF DAT</u> - 6 months) OR If <u>OSAL DAT</u> >= ( <u>REF DAT</u> - 6 months) OR If <u>DIPY DAT</u> >= ( <u>REF DAT</u> - 6 months)	Select	Reject