



Unrestricted					
Data and Business Rules – Records Indicator Set					
Author	Paul Amos	Version No	14.0	Version Date	01-May-2009

## **New GMS Contract QOF Implementation**

### **Dataset and Business Rules**

-

### **Records Indicator Set**

**Amendment History**

<b>Version</b>	<b>Date</b>	<b>Amendment History</b>
0.1	09-Jul-2004	From Peter Horsfield. Extracted from July Read Code Release. Contains Read v0 only.
1.0	27-Sep-2004	Amended following 4 Country Review
1.1	18-Jan-2005	Amended following January READ Code Release
1.2	21-Jun-2005	Amended following 4 Country review
2.0	21-July-2005	Signed off following 4 Country review
2.1	21-July-2005	Amended following July 2005 Read Code release and January 2005 SNOMED CT release
2.2	21-Aug-2005	Amended following 4 Country review
3.0	23-Sep-2005	Signed off following 4 Country review
3.1	21-Nov-2005	Amended following review by Phil Brown
3.2	22-Nov-2005	Amended following review by Peter Horsfield
3.3	3-Dec-2005	Draft revised for internal review
7.4	03-Mar-2006	Amended following internal & 4 Countries review. Also includes uplifting to 7.4 to bring the 4-Byte documents to the same version number as the 5-Byte/CTV3/SNOMED-CT documents
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 October Read Code Release Corrections and amendments following feedback
8.7	16-Nov-2006	Following 4-Country review: Addition of Lloyd George summary codes
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 smoking exceptions (SMOKEXC_COD cluster) from Records 22.
10.0	18-Jun-2007	Signed off following 4 Country review
10.1	23-Sep-2007	October 2007 Read Code Release
11.0	28-Nov-2007	Signed off following 4 Country review
11.1	30-Jun-2008	April 2008 Read Code Release QOF Review 2007 (Replace Record 22 with Record 23)
11.2	21-Jul-2008	Following 4-Country review: 137U. removed from SMOK_COD cluster EXSMOK, EXSMOK1 & EXSMOK2 cluster corrected for v2 Read Codes CSMOK cluster added Correct numbering for Indicator Records 23 Correct Denominator rules 3, 5 and 6 for indicator Records 23 Correct Numerator rules 2, 4 and 5 for indicator Records 23
12.0	24-Jul-2008	Signed off following 4 Country review
12.1	06-Oct-2008	October 2008 Read Code Release Application of v12.0 Addendum 2 corrections to EXSMOK1_COD & EXSMOK2_COD

		Denominator Rule 6 & Numerator Rule 5 (for Records 23)
12.2	26-Nov-2008	Following 4-Country Review: Correction to denominator rules 4, 5 & 6 and Numerator rules 3 & 4 definitions for Records 23
13.0	05-Dec-2008	Signed off following 4 Country review
13.1	20-Feb-2009	QOF Review 2008 – Records 23 amended following DH discussion. Correct Denominator rules 3, and 4 for indicator Records 23 Correct Numerator rules 4 and 5 for indicator Records 23
13.2	09-Mar-2009	Amendment following NHSE review
13.3	27-Apr-2009	Amendment following Four-Country Review
14.0	01-May-2009	Signed off following 4 Country review

## **New GMS contract Q&O framework implementation**

### Dataset and business rules – Records 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 October 2008 release of Read codes (version 0). The codes are shown within the document as a 4 character value to show that the Read Code is for a 4-Byte system.
  - i) Where a '%' wildcard is displayed, the Read Code is filled to 4 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 4 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

<i><u>Current registration status</u></i>	<i><u>Qualifying criteria</u></i>
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)

**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	PAT_AGE	Patient age in years at REF_DAT	Unconditional
3	PAT_DOB	Patient date of birth	Unconditional
4	REG_DAT	Date of patient registration	Latest < (REF_DAT)
5	SMOK_COD	<i>Read codes v0</i>	Latest < REF_DAT
		137. - 137D 137F - 137H 137J, 137K 137M - 137T 137V 137X - 137h	
		<i>(Smoking habit codes)</i>	
6	SMOK_DAT	Date of SMOK_COD	Chosen record
7	NSMOK_COD	<i>Read codes v0</i>	Most recent of SMOK_COD < REF_DAT
		1371	
		<i>(Code for never smoked)</i>	
8	NSMOK_DAT	Date of NSMOK_COD	Chosen record
9	EXSMOK_COD	<i>Read codes v0</i>	Most recent of SMOK_COD < REF_DAT
		1377 - 137B 137F 137K 137N - 137O 137S - 137T	
		<i>(Code for ex-smoker)</i>	
10	EXSMOK_DAT	Date of EXSMOK_COD	Chosen record
11	CSMOK_COD	<i>Read codes v0</i>	Most recent of SMOK_COD < REF_DAT
		1372 - 1376 137C - 137D 137G - 137H 137J 137M 137P - 137R 137V 137X - 137f 137h	

		<i>(Current smoker codes)</i>	
12	CSMOK_DAT	Date of CSMOK_COD	Chosen record
13	EXSMOK1_COD	<i>Read codes v0</i>	Latest >= EXSMOK_DAT - 24 months AND < EXSMOK_DAT - 12 months
		1377 - 137B 137F 137K 137N - 137O 137S - 137T	
		<i>(Code for ex-smoker)</i>	
14	EXSMOK_DAT	Date of EXSMOK1_COD	Chosen record
15	EXSMOK2_COD	<i>Read codes v0</i>	Latest >= (EXSMOK_DAT - 36 months) AND < (EXSMOK_DAT - 24 months)
		1377 - 137B 137F 137K 137N - 137O 137S - 137T	
		<i>(Code for ex-smoker)</i>	
16	EXSMOK2_DAT	Date of EXSMOK2_COD	Chosen record
17	LSMOK_COD	<i>Read codes v0</i>	Latest > REF_DAT
		1372 - 1376 137C - 137D 137G - 137H 137J 137M 137P - 137R 137V 137X - 137f 137h	
		<i>(Smoker codes)</i>	
18	LSMOK_DAT	Date of LSMOK_COD	Chosen record
19	BP_COD	<i>Read codes v0</i>	Latest < REF_DAT
		246.% (excluding 2460, 2468, 246H, 246I, 246K, 246L, 246M)	
		<i>(BP recording codes)</i>	
20	BP_DAT	Date of BP_COD	Chosen record
21	CSUM_COD	<i>Read codes v0</i>	Latest < REF_DAT
		9348 9344 9311 9313	
		<i>(Clinical summaries recording codes)</i>	

22	CSUM_DAT	Date of CSUM_COD	Chosen record
23	ETH_COD	<i>Read codes v0</i>	Latest < REF_DAT
		9i..% 9S..%	
		<i>(Ethnic recording codes)</i>	
24	ETH_DAT	Date of ETH_COD	Chosen record

**Indicator rulesets**

- 1 Indicator Records 11: The blood pressure of patients aged 45 and over is recorded in the preceding 5 years for at least 65% of

a) Denominator ruleset

<i><u>Rule number</u></i>	<i><u>Rule</u></i>	<i><u>Action if true</u></i>	<i><u>Action if false</u></i>
1	If <u>PAT AGE</u> < 45	Reject	Next rule
2	If <u>BP_DAT</u> >= ( <u>REF_DAT</u> – 5 years)	Select	Next rule
3	If <u>REG_DAT</u> >= ( <u>REF_DAT</u> – 3 months)	Reject	Select

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

<i><u>Rule number</u></i>	<i><u>Rule</u></i>	<i><u>Action if true</u></i>	<i><u>Action if false</u></i>
1	If <u>BP_DAT</u> >= ( <u>REF_DAT</u> – 5 years)	Select	Reject

- 2 Indicator Records 15: The practice has up-to-date clinical summaries in at least 60 per cent of patient records.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>CSUM_DAT</u> ≠ Null	Select	Next Rule
2	If <u>REG_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>CSUM_DAT</u> ≠ Null	Select	Reject

- 3 Indicator Records 17: The blood pressure of patients aged 45 and over is recorded in the preceding 5 years for at least 80% of

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>PAT AGE</u> < 45	Reject	Next rule
2	If <u>BP_DAT</u> >= ( <u>REF_DAT</u> – 5 years)	Select	Next rule
3	If <u>REG_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>BP_DAT</u> >= ( <u>REF_DAT</u> – 5 years)	Select	Reject

- 4 Indicator Records 18: The practice has up-to-date clinical summaries in at least 80 per cent of patient records.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>CSUM_DAT</u> ≠ Null	Select	Next Rule
2	If <u>REG_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>CSUM_DAT</u> ≠ Null	Select	Reject

- 5 Indicator Records 20: The practice has up-to-date clinical summaries in at least 70 per cent of patient records.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>CSUM_DAT</u> ≠ Null	Select	Next Rule
2	If <u>REG_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>CSUM_DAT</u> ≠ Null	Select	Reject

- 6 Indicator Records 21: Ethnic origin is recorded for 100% of new registrations from 1st April 2006.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <a href="#">REG_DAT</a> >= 01.04.2006	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="#">ETH_DAT</a> ≠ Null	Select	Reject

- 7 Indicator Records 23: The percentage of patients aged over 15 years whose notes record smoking status in the past 27 months, except those who have never smoked where smoking status need be recorded only once.

a) Denominator ruleset

<u>Rule number</u>	<u>Rule</u>	<u>Action if true</u>	<u>Action if false</u>
1	If <u>PAT AGE</u> < 15	Reject	Next rule
2	If <u>CSMOK_DAT</u> >= ( <u>REF_DAT</u> – 27 months)	Select	Next rule
3	If <u>PAT AGE</u> > 25 AND <u>NSMOK_DAT</u> ≠ Null AND <u>NSMOK_DAT</u> > <u>PAT_DOB</u> +25 years	Select	Next rule
4	If <u>PAT AGE</u> <= 25 AND <u>NSMOK_DAT</u> >= ( <u>REF_DAT</u> – 27 months)	Select	Next rule
5	If <u>EXSMOK_COD</u> ≠ Null AND <u>EXSMOK_DAT</u> >= ( <u>REF_DAT</u> – 27 months)	Select	Next rule
6	If (( <u>EXSMOK_COD</u> ≠ Null) AND If ( <u>EXSMOK1_COD</u> ≠ Null) AND If ( <u>EXSMOK2_COD</u> ≠ Null)) AND If (( <u>LSMOK_COD</u> = Null) OR If ( <u>LSMOK_DAT</u> < <u>EXSMOK2_DAT</u> ))	Select	Next rule
7	If <u>REG_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>CSMOK_DAT</u> >= ( <u>REF_DAT</u> – 27 months)	Select	Next rule
2	If <u>PAT AGE</u> > 25 AND <u>NSMOK_DAT</u> ≠ Null AND <u>NSMOK_DAT</u> > <u>PAT_DOB</u> +25 years	Select	Next rule
3	If <u>PAT AGE</u> <= 25 AND <u>NSMOK_DAT</u> >= ( <u>REF_DAT</u> – 27 months)	Select	Next rule
4	If <u>EXSMOK_COD</u> ≠ Null AND <u>EXSMOK_DAT</u> >= ( <u>REF_DAT</u> – 27 months)	Select	Next rule
5	If (( <u>EXSMOK_COD</u> ≠ Null) AND If ( <u>EXSMOK1_COD</u> ≠ Null) AND If ( <u>EXSMOK2_COD</u> ≠ Null)) AND If (( <u>LSMOK_COD</u> = Null) OR If ( <u>LSMOK_DAT</u> < <u>EXSMOK2_DAT</u> ))	Select	Next rule

**Additional Notes:**

**Rule 1:** The aim of this rule is to reject any patient, aged under 15.

True: If the patient is aged under 15, the patient should not be included in the denominator .

False: If the patient is aged under 15 or over, then the patient is further considered.

After following the logic of Rule 1, any patient that has not been rejected will therefore be considered for this indicator as the patient being of a suitable age.

**Rule 2:** The aim of this rule is to identify any patient who's most recent smoking status is 'current smoker' and that it has been recorded in the last 27 months.

True: If the patient has a latest smoking status recorded in the last 27 months of 'current smoker', then the patient is to be included in both the numerator and the denominator.

False: If the patient does not have a latest smoking status recorded in the last 27 months of 'current smoker', then the patient is further considered.

Rules 3 & 4 are to handle the scenarios for patients who have 'never smoked'.

**Rule 3:** The aim of this rule is to identify any patient aged over 25 that has, as the most recent smoking status, a status of 'never smoked'.

True: If the patient is aged over 25 and has a latest smoking status of 'never smoked' which has been recorded after the patient's 25<sup>th</sup> birthday, then the patient is to be included in both the numerator and the denominator.

False: If the patient is aged over 25 and but does not have a latest smoking status of 'never smoked' recorded after the patient's 25<sup>th</sup> birthday, then the patient is further considered.

**Rule 4:** The aim of this rule is to identify any patient aged 25 or under that has, as the most recent smoking status, a status of 'never smoked'.

True: If the patient is aged 25 or under and has a latest smoking status of 'never smoked' which has been recorded in the last 27 months, then the patient is to be included in both the numerator and the denominator.

False: If the patient is aged 25 or under and does not have a latest smoking status of 'never smoked' recorded in the last 27 months, then the patient is further considered.

Rules 5 & 6 are to handle the scenarios for patients who are 'ex-smokers'.

**Rule 5:** The aim of this rule is to identify any patient that has, as the most recent smoking status, a status of 'ex-smoker'.

True: If the patient has a latest smoking status of 'ex-smoker' which has been recorded in the last 27 months, then the patient is to be included in both the numerator and the denominator.

False: If the patient does not have a latest smoking status of 'ex-smoker' recorded in the last 27 months, then the patient is further considered.

**Rule 6:** The aim of this rule is to identify any patient that has, as the most recent smoking status, a status of 'ex-smoker' and has consecutive 'ex-smoker' status (i.e. unbroken by a period of a 'smoking' status recorded over three consecutive years.

True: If the patient has a latest smoking status of 'ex-smoker' and has a smoking status of 'ex-smoker' recorded in three consecutive years ending at the date the latest recording of 'ex-smoker' WITHOUT a later smoking status of 'smoker' recorded, then the patient is to be included in both the numerator and the denominator.

False: If the patient has a latest smoking status of 'ex-smoker' and does not have a smoking status of 'ex-smoker' recorded in three consecutive years WITHOUT a later smoking status of 'smoker' recorded, then the patient is further considered.

If there are three consecutive recordings of an 'ex-smoker' code within the patient record. These recordings should be made within three consecutive 12 month periods and should not be broken by a 'smoker' code.

Therefore this rule checks the patient record against five criteria:

- Firstly, it identifies if an 'ex-smoker' code is recorded in the patient record. The recording selected here is the latest recording of an acceptable code
- Secondly, there is a record of an 'ex-smoker' code recorded between 12 and 24 months before the latest 'ex-smoker' code identified in the first criterion of this rule
- Thirdly, there is a record of an 'ex-smoker' code recorded between 24 and 36 months before the latest 'ex-smoker' code identified in the first criterion of this rule
- Fourthly, there is no record of a 'smoker code', or
- Finally, the date of the latest 'smoker' code is before the date of the 'ex-smoker' code identified in criterion three of this rule.

If all these criteria are met the record is selected into the denominator. If not, then the next rule is applied.

Where NO smoking status satisfying Rules 2 to 6 above are found, then the patient records should be further examined to see if there are any 'exceptions' (Rule 7) that apply before including/excluding the patient in/from the denominator.

**Rule 7:** The aim of this rule is to identify any patient that 'recently registered' at the practice. If the patient has registered at the practice in the last 3 months, the patient should not be included in the denominator.