



Data and Business Rules – Asthma Indicator Set					
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New GMS Contract QOF Implementation

Dataset and Business Rules

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Asthma Indicator Set

Amendment History:

Version	Date	Amendment History
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	25-Feb-2006	Amended following internal & 4 Countries review
8.0	15-Mar-2006	Signed off following 4 Country review
8.1	20-Apr-2006	Responding to queries raised a) Amend wording for Note 3 b) Amend Numerator Rules 2 for ASTHMA8
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
9.0	30-Nov-2006	Approved by NHSE
9.1	11-Apr-2007	April 2007 Read Code Release
10.0	18-Jun-2007	Signed off following 4 Country review
10.1	18-Aug-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
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
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 Application of v12.0 Addendum 2 corrections to SMOK_COD
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
14.2	14-August-2009	Amendments following 4 Country review
15.0	17-August-2009	Sign off following 4 Country review
15.1	12-October-2009	October 2009 Clinical Code Release Updates
15.2	28-October-2009	October 2009 Clinical Code Release Review
16.0	02-December-2009	Signed off following 4 Country review
16.1	05-May-2010	Internal NHS IC 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

New GMS contract Q&O framework implementation

Dataset and business rules – Asthma 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 its 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 1st September and 31st 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 1st September 2004 and 31st 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 < (REF_DAT)</i>
	H33..%	H33..% (excluding H44..%, H441., H440.%, X1025%, X1023, XaOIZ, XaKdk, XaJFG) X1020	
	<i>(Asthma diagnosis codes)</i>		
<i>Excluded</i>	<i>Read codes v2</i>	<i>CTV3</i>	<i>Latest < (REF_DAT) AND > Date of diagnostic code above</i>
	21262 212G.	21262	
	<i>(Codes for asthma resolved)</i>		

	<i>Read codes v2</i>	<i>CTV3</i>	
<i>Required</i>	<p>c1... – c15z. c19..% c1B.. – c1EE. c1b..% c2...% (Excluding c23..%, c24..%) c3...% (Excluding c32..%) c4...% (Excluding c42..%, c44..%) c5...% (Excluding c52..%) c6...% c7...% cA...%</p>	<p>c1...% (Excluding c16..%, x01Cn%, x01Co%, x01Ct%, x01Df%, x01Cp%) x02IG% c221., c222., c224., c226., c227. c31..% (Excluding I863.%, I861.%) c33..% c41..% c43..% c51G., c51H., c51n. c64..% c69..% cA...% x01EF% c71..% x02LJ% (Excluding k6k1.%, I89.., k6k..) x01EJ% (Excluding k6e1.%, I891.%, k6e.., I89..)</p>	<i>Latest >= (REF_DAT – 1y) AND < REF_DAT</i>
<i>(Asthma-related drug treatment codes)</i>			

**N.B. Codes required to be present from both groups to qualify a patient for inclusion*

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	PAT_AGE	Patients age (years) at REF_DAT		Unconditional
4	ASTEXC_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		9hA..% 9OJ2.	XaJ4W% 9OJ2.	
		<i>(Asthma exception reporting codes)</i>		
5	ASTEXC_DAT	Date of ASTEXC_COD		Chosen record
6	AST_COD	<i>Read codes v2</i>	<i>CTV3</i>	Earliest < REF_DAT
		H33..%	H33..% (excluding H44..%, H441., H440.%, X1025%, X1023, Xa0IZ, XaKdk, XaJFG) X1020	
		<i>(Asthma diagnosis codes)</i>		
7	AST_DAT	Date of AST_COD		Chosen record

8	ASTSPIR_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		33G1. 33H1. 33I1. 33J1. 33K1. 663J. 8HRC. 745D4	XaFrX XaIUg XaIUh XaIUj XaIUk 663J. XaK02 XaXeg	
<i>(Spirometry codes for Asthma)</i>				
9	ASTSPIR_DAT	Date of ASTSPIR_COD		Chosen record
10	PEFR_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		339c. - 339d. 339g. 339n. 339A. - 339B. 66Yc. 66YX. 66YY. 33950	XaJEg XaIxT XaIxS X77RW XaEHe XaEGA XaIxD% XaJvW XaXHH	
<i>(PEFR codes)</i>				
11	PEFR_DAT	Date of PEFR_COD		Chosen record
12	SMOK_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		137.. - 137D. 137F. - 137H. 137J. - 137K.	Ub0oo% (excluding XE0oo, XaIQi% Ub0oq, 137L., XaQzw, XaXP9, XaXP8, XaXP6)	

		137M. – 137T. 137V. 137X. - 137h. 137j., 137l., 137m.		
		<i>(Smoking habit codes)</i>		
13	SMOK_DAT	Date of SMOK_COD		Chosen record
14	REV_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		66YJ. 66YK. 66YQ. 66YR. 8B3j. 9OJA.	Xaleq Xalu5 Xalu6 Xaler XalfK XE2Nb	
		<i>(Asthma review codes)</i>		
15	REV_DAT	Date of REV_COD		Chosen record

Indicator rulesets

- 1 **Indicator ASTHMA 1**: The practice can produce a register of patients with asthma, excluding patients with asthma who have been prescribed no asthma-related drugs in the preceding 12 months

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 ASTHMA 8: The percentage of patients aged 8 years and over diagnosed as having asthma from 1 April 2006 with measures of variability or reversibility.

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> < 8	Reject	Next rule
2	If <u>AST DAT</u> < 01.04.2006	Reject	Next rule
3	If <u>ASTSPIR DAT</u> >= (<u>AST DAT</u> – 3 months)	Select	Next rule
4	If <u>PEFR DAT</u> >= (<u>AST DAT</u> – 3 months)	Select	Next rule
5	If <u>REG DAT</u> >= (<u>REF DAT</u> – 3 months)	Reject	Next rule
6	If <u>ASTEXC DAT</u> >= (<u>REF DAT</u> – 15 months)	Reject	Next rule
7	If <u>AST 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>ASTSPIR DAT</u> >= (<u>AST DAT</u> – 3 months)	Select	Next rule
2	If <u>PEFR DAT</u> >= (<u>AST DAT</u> – 3 months)	Select	Reject

- 3 Indicator ASTHMA 3: The percentage of patients with asthma between the ages of 14 and 19 years in whom there is a record of smoking status in the preceding 15 months.

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> < 14	Reject	Next rule
2	If <u>PAT AGE</u> > 19	Reject	Next rule
3	If <u>SMOK DAT</u> >= (<u>REF DAT</u> – 15 months)	Select	Next rule
4	If <u>REG DAT</u> >= (<u>REF DAT</u> – 3 months)	Reject	Next rule
5	If <u>ASTEXC DAT</u> >= (<u>REF DAT</u> – 15 months)	Reject	Next rule
6	If <u>AST 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>SMOK DAT</u> >= (<u>REF DAT</u> – 15 months)	Select	Reject

- 4 Indicator ASTHMA 6: The percentage of patients with asthma who have had an asthma review in the preceding 15 months.

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>REV_DAT</u> >= (<u>REF_DAT</u> – 15 months)	Select	Next rule
2	If <u>REG_DAT</u> >= (<u>REF_DAT</u> – 3 months)	Reject	Next rule
3	If <u>ASTEXC_DAT</u> >= (<u>REF_DAT</u> – 15 months)	Reject	Next rule
4	If <u>AST_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>REV_DAT</u> >= (<u>REF_DAT</u> – 15 months)	Select	Reject