



| <b>Data and Business Rules – Asthma Indicator Set</b> |  |            |      |              |            |
|---|--|------------|------|--------------|------------|
| Author  | NHS IC – QOF<br>Business Rules<br>team | Version No | 19.0 | Version Date | 13/12/2010 |

**New GMS Contract QOF Implementation**

**Dataset and Business Rules**

**-**

**Asthma 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            | 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<br>a) Amend wording for Note 3<br>b) Amend Numerator Rules 2 for ASTHMA8                            |
| 8.5            | 18-May-2006  | Approved by NHSE   |
| 8.6            | 20-Oct-2006  | April Read Code Release<br>April SNOMED CT Release<br>October Read Code Release<br>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<br>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<br>April 2008 SNOMED CT Release<br>QOF Review 2007  |
| 12.0           | 24-Jul-2008  | Signed off following 4 Country review  |
| 12.1           | 06-Oct-2008  | October 2008 Read Code Release<br>October 2008 SNOMED CT Release<br>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                  |

## **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 October 2010 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 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:<br>registration date < (REF_DAT); and<br>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>  |
|                      | H33..% (excluding H333., H33z1)  | H33..% (excluding Xa1hD, XE0YW%, H44..%)<br>X1020  |   |
|                      | <i>(Asthma diagnosis codes)</i>  |  |   |
| <i>Excluded</i>      | <i>Read codes v2</i>   | <i>CTV3</i>  | <i>Latest &lt; (REF_DAT)<br/>AND &gt; Date of<br/>diagnostic code above</i> |
|                      | 21262<br>212G.   | 21262  |   |
|                      | <i>(Codes for asthma resolved)</i>   |  |   |
| <i>Required</i>      | <i>Read codes v2</i>   | <i>CTV3</i>  | <i>Latest &gt;= (REF_DAT –<br/>1y) AND &lt; REF_DAT</i>                     |
|                      | c1...%<br>c2...%<br>c3...%<br>c4...%<br>c5...%<br>c6...%<br>c7...%<br>cA...% | x02IF%<br>x02IG%<br>c67..%<br>c1C..%<br>x01Cm%<br>cA...%<br>c41..%<br>c42..%<br>c43..%<br>c69..% |   |
|                      | <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..%<br>9OJ2.                           | XaJ4W%<br>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..% (excluding H333., H33z1)           | H33..% (excluding Xa1hD, XE0YW%,<br>H44..%)<br>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.<br>33H1.<br>33I1.<br>33J1.<br>33K1.<br>663J.<br>8HRC.                 | XaFrX<br>XaIUg<br>XaIUh<br>XaIUj<br>XaIUk<br>663J.<br>XaK02           |                  |
| <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.<br>339g.<br>339n.<br>339A. - 339B.<br>66Yc.<br>66YX.<br>66YY. | XaJEg<br>XaIxT<br>XaIxS<br>X77RW<br>XaEHe<br>XaEGA<br>XaIxD%<br>XaJvW |                  |
| <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.<br>137F. - 137H.<br>137J. - 137K.<br>137M. - 137T.<br>137V.   | Ub0oo%<br>(excluding XE0oo, XaIQi% Ub0oq, 137L.,<br>XaQzw)            |                  |

|    |          |  |  |                  |
|----|----------|--|--|------------------|
|    |          | 137X. - 137h.<br>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.<br>66YK.<br>66YQ.<br>66YR.<br>8B3j.<br>9OJA. | Xaleq<br>Xalu5<br>Xalu6<br>Xaler<br>XalfK<br>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 twelve 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 1st 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                 |