



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

## **New GMS Contract QOF Implementation**

### **Dataset and Business Rules - Established Hypertension 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            | 18-Jan-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            | 28-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<br>Amend wording for Note 3   |
| 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 |
| 8.7            | 13-Nov-2006  | Following 4-Country review:<br>BP_COD: Remove redundant '.'  |
| 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           | 27-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:<br>Remove superfluous 'z' from all instances of G2zz.  |
| 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   |

|      |             |  |
|------|-------------|--|
| 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 Four-Country review |

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

### Dataset and business rules – Established hypertension 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 2, clinical terms version 3 (CTV3) and 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:<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>SNOMED-CT</i>  | <i>CTV3</i>  | <i>Latest &lt; (REF_DAT)</i>  |
|                      | G2...<br>G20..%<br>G24.. - G2z..<br>(Excluding G24z1) | 38341003% (excluding 69909000,<br>72022006%, 198941007%, 367390009%,<br>62275004, 64715009%, 38481006%,<br>206596003, 169465000<br>194791005%, 199008003) | XE0Ub<br>XE0Uc%<br>G24..% (excluding<br>61462)<br>G2...%<br>Xa0Cs<br>XSDSbG202.<br>Xa3fQ |   |
|                      | <i>(Hypertension diagnosis codes)</i>                 |   |  |   |
| <i>Excluded</i>      | <i>Read codes v2</i>                                  | <i>SNOMED-CT</i>  | <i>CTV3</i>  | <i>Latest &lt; (REF_DAT)<br/>AND &gt; Date of diagnostic<br/>code above</i> |
|                      | 21261<br>212K.  | 162659009   | 21261  |   |
|                      | <i>(Codes for hypertension resolved)</i>              |   |  |   |

**2) Clinical data extraction criteria**

| <i>Field Number</i> | <i>Field name</i> | <i>Data item</i>   |  |  | <i>Qualifying criteria</i> |
|---------------------|-------------------|--|--|--|----------------------------|
| 1                   | PAT_ID            | Patient ID number  |  |  | Unconditional              |
| 2                   | REG_DAT           | Date of patient registration                             |  |  | Latest < REF_DAT           |
| 3                   | HYPEXC_COD        | <i>Read codes v2</i>                                     | <i>SNOMED-CT</i>   | <i>CTV3</i>  | Latest < REF_DAT           |
|                     |                   | 9h3..%   | 89831000000107%  | XaJ4P%   |                            |
|                     |                   | <i>(Hypertension exception reporting codes)</i>          |  |  |                            |
| 4                   | HYPEXC_DAT        | Date of HYPEXC_COD                                       |  |  | Chosen record              |
| 5                   | HYP_COD           | <i>Read codes v2</i>                                     | <i>SNOMED-CT</i>   | <i>CTV3</i>  | Earliest < REF_DAT         |
|                     |                   | G2...<br>G20..%<br>G24.. - G2z..<br>(Excluding<br>G24z1) | 38341003% (excluding 69909000<br>72022006%, 198941007%,<br>367390009%, 62275004,<br>64715009%, 38481006%,<br>206596003, 169465000,<br>194791005%, 199008003) | XEOUb<br>XEOUc%<br>G24..% (excluding<br>61462)<br>G2...%<br>Xa0Cs<br>XSDSb<br>G202.<br>Xa3fQ |                            |
|                     |                   | <i>(Hypertension diagnosis codes)</i>                    |  |  |                            |
| 6                   | HYP_DAT           | Date of HYP_COD  |  |  | Chosen record              |

|    |           |   |   |   |                  |
|----|-----------|---|---|---|------------------|
| 7  | BP_COD    | <i>Read codes v2</i>  | <i>SNOMED-CT</i>  | <i>CTV3</i>   | Latest < REF_DAT |
|    |           | 246..%<br>(excluding<br>2460.,.2468<br>246H.,<br>246I.246K.,<br>246L.246M.) | 163020007% (excluding 163021006,<br>310357009, 163029008, 310356000,<br>274283008%)<br>75367002% (excluding 37087001%,<br>315612005, 315613000, 386533006%,<br>6797001%, 251079001, 252076005%) | X773t%<br>(excluding XaI9f,<br>XaI9g)<br>246..%<br>(excluding<br>2460.2468.XaCFN,<br>XaCFO) |                  |
|    |           | <i>(BP recording codes)</i>   |   |   |                  |
| 8  | BP_DAT    | Date of BP_COD  |   |   | Chosen record    |
| 9  | BP_SYS    | Value 1 of BP_COD<br><i>(Systolic BP value)</i>                             |   |   | Chosen record    |
| 10 | BP_DIA    | Value 2 of BP_COD<br><i>(Diastolic BP value)</i>                            |   |   | Chosen record    |
| 11 | BPEX_COD  | <i>Read codes v2</i>  | <i>SNOMED-CT</i>  | <i>CTV3</i>   | Latest < REF_DAT |
|    |           | 8I3Y.   | 413123006   | XaJkR   |                  |
|    |           | <i>(BP recording exception codes)</i>                                       |   |   |                  |
| 12 | BPEX_DAT  | Date of BPEX_COD  |   |   | Chosen record    |
| 13 | HTMAX_COD | <i>Read codes v2</i>  | <i>SNOMED-CT</i>  | <i>CTV3</i>   | Latest < REF_DAT |
|    |           | 8BL0.   | 407567007   | XaJ5h   |                  |
|    |           | <i>(Code for maximal BP therapy)</i>  |   |   |                  |
| 14 | HTMAX_DAT | Date of HTMAX_COD   |   |   | Chosen record    |

### **Indicator rulesets**

- 1 Indicator BP 1: The practice can produce a register of patients with established hypertension

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 BP 4: The percentage of patients with hypertension in whom there is a record of the blood pressure in the previous 9 months.

a) Denominator ruleset

| <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> – 9 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> – 3 months)     | Reject                | Next rule              |
| 4                  | If <u>HYPEXC_DAT</u> >= ( <u>REF_DAT</u> – 15 months) | Reject                | Next rule              |
| 5                  | If <u>HYP_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> – 9 months) | Select                | Reject                 |

- 3 Indicator BP 5: The percentage of patients with hypertension in whom the last blood pressure (measured in the previous 9 months) is 150/90 or less.

a) Denominator ruleset

| <u>Rule number</u> | <u>Rule</u>   | <u>Action if true</u> | <u>Action if false</u> |
|--------------------|---|-----------------------|------------------------|
| 1                  | If <u>BP_SYS</u> <= 150           AND<br>If <u>BP_DIA</u> <= 90           AND<br>If <u>BP_DAT</u> >= ( <u>REF_DAT</u> – 9 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>HYPEXC_DAT</u> >= ( <u>REF_DAT</u> – 15 months)   | Reject                | Next rule              |
| 5                  | If <u>HYP_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

| <u>Rule number</u> | <u>Rule</u>   | <u>Action if true</u> | <u>Action if false</u> |
|--------------------|---|-----------------------|------------------------|
| 1                  | If <u>BP_SYS</u> <= 150           AND<br>If <u>BP_DIA</u> <= 90           AND<br>If <u>BP_DAT</u> >= ( <u>REF_DAT</u> – 9 months) | Select                | Reject                 |