



Unrestricted					
Data and Business Rules – Chronic Obstructive Pulmonary Disease Indicator Set (COPD)					
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**New GMS Contract QOF Implementation**

**Dataset and Business Rules**

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**Chronic Obstructive Pulmonary Disease (COPD)**

**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	26-Feb-2006	Amended following internal & 4 Countries review
8.0	15-Mar-2006	Signed off following 4 Country review
8.1	04-May-2006	Responding to queries raised a) Amend wording for Note 3 b) Remove <=12 month check in Rule 1 (COPD9)
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	15-Nov-2006	INDR_COD: Correct typo and ensure ranges are not split over lines
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	21-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 the 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 (Replace COPD9 with COPD12)
11.2	21-Jul-2008	Following the 4-Country review: Amend COPDSPIR cluster Denominator rule 2 and Numerator Rule 1 corrected for COPD12

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
13.1	05-Feb-2009	QOF 2008 Review
13.2	09-Mar-2009	Amendments following NHSE review
13.3	16-Apr-2009	Plain English comments added to indicator rules and amendments following Four-Country Review
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
16.1	05-May-2010	Internal NHS IC review
17.0	07-May-2010	April 2010 Read Code Release following NHS IC review

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

Dataset and business rules – Chronic obstructive pulmonary disease (COPD) 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 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

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

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>	Earliest < (REF_DAT)
	H3... H31..% (excluding H3101, H31y0, H3122) H32..% H36.. - H3z..	H31..% H32..% H3...% (excluding XEOYL%, H3122%)	

**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	COPDEXC_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		9h5..%	XaJ4R%	
		<i>(COPD exception reporting codes)</i>		
4	COPDEXC_DAT	Date of COPDEXC_COD		Chosen record
5	COPD_COD	<i>Read codes v2</i>	<i>CTV3</i>	Earliest < REF_DAT
		H3... H31..% (excluding H3101, H31y0, H3122) H32..% H36.. - H3z..	H31..% H32..% H3...% (excluding XE0YL%, H3122%)	
		<i>(COPD codes)</i>		
6	COPD_DAT	Date of COPD_COD		Chosen record

7	SPEX_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		8I2M. 8I3b. 8I6L. 8I6d.	XaJz4 XaK27 XaK2A XaMh9	
		<i>(Spirometry exception codes)</i>		
8	SPEX_DAT	Date of SPEX_COD		Chosen record
9	COPDSPIR_COD	<i>Read codes v2</i>	<i>CTV3</i>	Earliest < REF_DAT AND >= (COPD_DAT - 3 months)
		33H..% 33I..% 33J..% 66Ya. - 66Yb. 8HRC.	XaIUy% XaIUa% XaIUc% XaJuz XaJv0 XaK02	
		<i>(Spirometry codes for COPD)</i>		
10	COPDSPIR_DAT	Date of COPDSPIR_COD		Chosen record

11	FEV1_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		33971 3398.-3399. 339M. 339O., 339O0 339R. - 339U. 339a. - 339b. 339e. - 339f. 339j. - 339m.	3397.% (excluding X77Qv, XaCJK, 33970) 3398. 3399.% XaJ9B XaJ9C XaJ9D XaJ9E X77RZ X77Rb X77Ra XaEFy XaEFz	
		<i>(Codes for FEV1)</i>		
12	FEV1_DAT	Date of FEV1_COD		Chosen record

13	XFLU_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		14LJ. U60K4 ZV14F	XaIAA XaJ7u XaJ8X Xa5um% Xa5WJ%	
		<i>(Flu vaccine contraindications: persisting)</i>		
14	XFLU_DAT	Date of XFLU_COD		Chosen record
15	TXFLU_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		8I2F. 8I6D. 68NE. 9OX5.	XaIBI XaIOT 68NE. XaJ5n	
		<i>(Flu vaccine contraindications: expiring)</i>		
16	TXFLU_DAT	Date of TXFLU_COD		Chosen record
17	FLU_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT
		n47..% (excluding n47A., n47B.) 65E.. – 65E4. ZV048	n47..% (excluding n47A., n47B.) 65E.., XaLNG, XaLNH, XaLK4, XaPyT, XaPwi, XaPwj, ZV048	
		<i>(Flu vaccination codes)</i>		
18	FLU_DAT	Date of FLU_COD		Chosen record
19	MRC_COD	<i>Read codes v2</i>	<i>CTV3</i>	Latest < REF_DAT

		173H. 173I. 173J. 173K. 173L.	XaIUi XaIUI XaIUm XaIUn XaIUo	
		<i>(Codes for MRC Breathlessness Scale Score)</i>		
20	MRC_DAT	Date of MRC_COD		Chosen record
21	COPDRVW_ COD	<i>Read codes v2</i>	CTV3	Latest < REF_DAT
		66YM.	Xalet	
		<i>(Codes for COPD review)</i>		
22	COPDRVW_ DAT	Date of COPDRVW_COD		Chosen record

### **Indicator rulesets**

- 1 **Indicator COPD 1:** The practice can produce a register of patients with COPD.

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 COPD 12: The percentage of all patients with COPD diagnosed after 1<sup>st</sup> April 2008 in whom the diagnosis has been confirmed by post bronchodilator spirometry

a) Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>COPD_DAT</u> >= 01.04.2008	Next rule	Reject
2	If <u>COPDSPIR_DAT</u> >= ( <u>COPD_DAT</u> – 3 months) AND If <u>COPDSPIR_DAT</u> <= ( <u>COPD_DAT</u> + 12 months)	Select	Next rule
3	If <u>REG_DAT</u> >= ( <u>REF_DAT</u> – 3 months)	Reject	Next rule
4	If <u>COPDEXC_DAT</u> >= ( <u>REF_DAT</u> – 15 months)	Reject	Next rule
5	If <u>SPEX_DAT</u> >= ( <u>REF_DAT</u> – 15 months)	Reject	Next rule
6	If <u>COPD_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>COPDSPIR_DAT</u> >= ( <u>COPD_DAT</u> – 3 months) AND If <u>COPDSPIR_DAT</u> <= ( <u>COPD_DAT</u> + 12 months)	Select	Reject

**Rule 1:** Check whether the patient has been diagnosed with COPD after or on the 01.04.2008

True: If the patient has been diagnosed on or after the 01.04.2008, then the patient is further considered

False: If the patient has been diagnosed before the 01.04.2008, then the patient is disregarded and not included in the denominator.

**Rule 2:** Check that the bronchodilator spirometry has been performed within 3 months prior to the COPD diagnosis and 12 months post diagnosis.

True: If the bronchodilator spirometry has been performed within 3 months prior and 12 months post COPD diagnosis, then the patient is selected.

False: If the bronchodilator spirometry has not been performed within 3 months prior or 12 months post COPD diagnosis then the patient is further considered.

**Rule 3:** 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.

**Rule 4:** The aim of this rule is to identify any patient that has an accepted 'COPD Exception' Read Code' recorded. If the patient has an accepted 'COPD Exception' Read Code recorded in the last 15 months, the patient should not be included in the denominator.

**Rule 5:** The aim of this rule is to identify any patient that has an accepted 'Spirometry exception Read Code' recorded. If the patient has an accepted 'Spirometry exception Read Code recorded in the last 15 months, the patient should not be included in the denominator.

**Rule 6:** The aim of this rule is to identify any patient that has been 'recently diagnosed' as a COPD patient. If the patient has been diagnosed in the last 3 months, the patient should not be included in the denominator.

- 3 Indicator COPD 10: The percentage of patients with COPD with a record of FeV1 in the previous 15 months

a) Denominator ruleset

<u>Rule number</u>	<u>Rule</u>	<u>Action if true</u>	<u>Action if false</u>
1	If <u>FEV1_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>COPDEXC_DAT</u> >= ( <u>REF_DAT</u> – 15 months)	Reject	Next rule
4	If <u>SPEX_DAT</u> >= ( <u>REF_DAT</u> – 15 months)	Reject	Next rule
5	If <u>COPD_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>FEV1_DAT</u> >= ( <u>REF_DAT</u> – 15 months)	Select	Reject

**Rule 1:** Check whether the patient has had a forced expiratory volume in 1 second within 15 months of the end of the current QOF Financial Year.

True: If the patient has had a forced expiratory volume in 1 second recorded within 15 months of the end of the current QOF Financial Year then the patient is selected.

False: If the patient has had a forced expiratory volume in 1 second recorded outside 15 months of the end of the current QOF Financial Year then the patient is further considered.

**Rule 2:** 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.

**Rule 3:** The aim of this rule is to identify any patient that has an accepted 'COPD Exception' Read Code recorded. If the patient has an accepted 'COPD Exception' Read Code recorded in the last 15 months, the patient should not be included in the denominator.

**Rule 4:** The aim of this rule is to identify any patient that has an accepted 'Spirometry exception Read Code' recorded. If the patient has an accepted 'Spirometry exception Read Code' recorded in the last 15 months, the patient should not be included in the denominator.

**Rule 5:** The aim of this rule is to identify any patient that has been 'recently diagnosed' as a COPD patient. If the patient has been diagnosed in the last 3 months, the patient should not be included in the denominator.

- 4 **Indicator COPD 8:** The percentage of patients with COPD who have had influenza immunisation in the preceding 1 September to 31 March.

a. Denominator ruleset

<i>Rule number</i>	<i>Rule</i>	<i>Action if true</i>	<i>Action if false</i>
1	If <u>FLU DAT</u> >= <u>FLU COM</u> AND If <u>FLU DAT</u> <= <u>FLU END</u>	Select	Next rule
2	If <u>REG DAT</u> >= ( <u>REF DAT</u> – 3 months)	Reject	Next rule
3	If <u>COPDEXC DAT</u> >= ( <u>REF DAT</u> – 15 months)	Reject	Next rule
4	If <u>COPD DAT</u> >= ( <u>REF DAT</u> – 3 months)	Reject	Next rule
5	If <u>XFLU COD</u> ≠ Null	Reject	Next rule
6	If <u>TXFLU DAT</u> >= ( <u>REF DAT</u> – 15 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>FLU DAT</u> >= <u>FLU COM</u> AND If <u>FLU DAT</u> <= <u>FLU END</u>	Select	Reject

**Rule 1:** The aim of this rule is to identify those patients who have had flu vaccination recorded between the 1<sup>st</sup> of September and 31<sup>st</sup> of March in the current financial year (see item 8 in the notes section).

True: If the patient has had a flu vaccination within the time period then they are selected.

False: If the patient has not had a flu vaccination within the time period they are further considered.

**Rule 2:** The aim of this rule is to identify any patient that has an accepted 'COPD Exception' Read Code' recorded. If the patient has an accepted 'COPD Exception' Read Code recorded in the last 15 months, the patient should not be included in the denominator.

**Rule 3:** The aim of this rule is to identify any patient that has an accepted 'Spirometry exception Read Code' recorded. If the patient has an accepted 'Spirometry exception Read Code recorded in the last 15 months, the patient should not be included in the denominator.

**Rule 4:** The aim of this rule is to identify any patient that has been 'recently diagnosed' as a COPD patient. If the patient has been diagnosed in the last 3 months, the patient should not be included in the denominator.

**Rule 5:** Determines if the patient has a record of Flu vaccine contraindications: persisting.

True: If the patient has a recording of Flu vaccine contraindications: persisting, then the patient is disregarded and not included in the denominator.

False: If the patient does not have a recording of Flu vaccine contraindications: persisting then the patient is further considered.

**Rule 6:** Determines if the patient has a record of Flu vaccine contraindications: expiring within the last 15 months from the end of the current QOF Financial Year.  
True: If the patient has a recording of Flu vaccine contraindications: expiring within the 15 months from the end of the QOF Financial year end, then the patient is disregarded and not included in the denominator.  
False: If the patient has a recording of Flu vaccine contraindications: expiring outside 15 months from the end of the QOF Financial year end, then the patient is selected.

- 5 Indicator COPD 13: The percentage of patients with COPD who have had a review, undertaken by a healthcare professional, including an assessment of breathlessness using the MRC dyspnoea score 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>COPDRVW DAT</u> >= ( <u>REF DAT</u> – 15 months) AND If <u>MRC 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>COPDEXC DAT</u> >= ( <u>REF DAT</u> – 15 months)	Reject	Next rule
4	If <u>COPD 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>COPDRVW DAT</u> >= ( <u>REF-DAT</u> – 15 months) AND If <u>MRC DAT</u> >= ( <u>REF DAT</u> – 15 months)	Select	Reject

**Rule 1:** The aim of this rule is to identify those patients who have had a COPD review and a MRC breathlessness scale score within 15 months from the end of the QOF Financial year end.

True: If the patient has a record of both a COPD review and a MRC breathlessness scale score within 15 months from the end of the QOF Financial year end they are selected.

False: If the patient has a record of either a COPD review or a MRC breathlessness scale score outside 15 months from the end of the QOF Financial year end they are further considered.

**Rule 2:** The aim of this rule is to identify any patient that has an accepted 'COPD Exception' Read Code' recorded. If the patient has an accepted 'COPD Exception' Read Code recorded in the last 15 months, the patient should not be included in the denominator.

**Rule 3:** The aim of this rule is to identify any patient that has an accepted 'Spirometry exception Read Code' recorded. If the patient has an accepted 'Spirometry exception Read Code recorded in the last 15 months, the patient should not be included in the denominator.

**Rule 4:** The aim of this rule is to identify any patient that has been 'recently diagnosed' as a COPD patient. If the patient has been diagnosed in the last 3 months, the patient should not be included in the denominator.